Oxygen XML Editor Eclipse Plugin 20.0

User Guide

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Copyright....

Introduction

1

Welcome to the User Manual of Oxygen XML Editor plugin 20.0.

Oxygen XML Editor plugin is a cross-platform application designed to accommodate all of your XML editing, authoring, developing, and publishing needs. It is the best XML editor available for document development using structured mark-up languages such as XML, XSD, Relax NG, XSL, DTD. It is a comprehensive solution for authors who want to edit XML documents visually, with or without extensive knowledge about XML and XML-related technologies. The WYSIWYG-like editor is driven by CSS stylesheets associated with the XML documents and offers many innovative, user-friendly authoring features that make XML authoring easy and powerful.

It offers developers and authors a powerful **Integrated Development Environment** and the intuitive **Graphical User Interface** of Oxygen XML Editor plugin is easy to use and provides robust functionality for content editing, project management, and validation of structured mark-up sources. Coupled with *XSLT* and *FOP* transformation technologies, Oxygen XML Editor plugin offers support for generating output to multiple target formats, including: *PDF*, *PS*, *TXT*, *HTML*, *JavaHelp*, *WebHelp*, and *XML*.

This user guide is focused on describing features, functionality, the application interface, and to help you quickly get started. It also includes a vast amount of advanced technical information and instructional topics that are designed to teach you how to use Oxygen XML Editor plugin to accomplish your tasks. It is assumed that you are familiar with the use of your operating system and the concepts related to XML technologies and structured mark-up.

Getting Started

2

Topics:

- What is Oxygen XML Editor plugin
- Getting Familiar with the Interface
- Supported Document Types
- Resources to Help You Get Started Using Oxygen XML Editor plugin
- Your First Document or Project
- Getting Help
- Accessibility Support in Oxygen

This section provides a variety of resources to help you get the most out of the application. Typically, the first step of getting started with Oxygen XML Editor plugin would be to install the software. For detailed information about that process, see the Installation chapter.

After installation, when you launch Oxygen XML Editor plugin for the first time, you are greeted with a **Welcome** dialog box. It presents upcoming events, useful video demonstrations, helpful resources, the tip of the day, and also gives you easy access to recently used files and projects and to create new ones.

What is Oxygen XML Editor plugin

Oxygen XML Editor plugin is the best XML editor available and is a complete XML development and authoring solution. It is designed to accommodate a large number of users, ranging from beginners to XML experts. It is the only XML tool that supports all of the XML schema languages and provides a large variety of powerful tools for editing and publishing XML documents.

You can use Oxygen XML Editor plugin to work with most XML-based standards and technologies. It is a cross-platform application available on all the major operating systems (Windows, Mac OS X, Linux, Solaris) and can be used either as a standalone application or as an Eclipse plugin.

For a list of many of the features and technologies that are included in Oxygen XML Editor plugin, see the Oxygen Website.

Getting Familiar with the Interface

Oxygen XML Editor plugin includes several *perspectives* and editing modes to help you accomplish a wide range of tasks. Each *perspective* and editing mode also includes a large variety of helper view, menu actions, toolbars, and contextual menu functions.

Regardless of the *perspective* or editing mode that you are working with, the default layout consists of the following areas:

Menus

Menu driven access to all the features and functions available in Oxygen XML Editor plugin. Most of the menus are common for all types of documents, but Oxygen XML Editor plugin also includes some context-sensitive and *framework*-specific menus and actions that are only available for a specific context or type of document.

Toolbars

Easy access to common and frequently used functions. Each icon is a button that acts as a shortcut to a related function. Some of the toolbars are common for all *perspectives*, editing modes, and types

of documents, while others are specific to the particular *perspective* or mode. Some toolbars are also *framework*-specific, depending on the type of document that is being edited.

Helper Views

Oxygen XML Editor plugin includes a large variety of *dockable* views to assist you with editing, viewing, searching, validating, transforming, and organizing your documents. Many of the views also contain useful contextual menu actions, toolbar buttons, or menus. The most commonly used views for each *perspective* and editing mode are displayed by default and you can choose to display others to suit your specific needs.

Editor Pane

The main editing area in the center of the application. Each editing mode provides a main editor pane where you spend most of your time reading, editing, applying markup, and validating your documents. The editor pane in each editing mode also includes a variety of contextual menu actions and other features to help streamline your editing tasks. Each file that has been opened has a tab at the top of the editing pane.

Perspectives

Oxygen XML Editor plugin includes several different *perspectives* that you can use to work with your documents. The **Oxygen XML** *perspective* is the most commonly used *perspective* used for displaying and editing the content of your XML documents, and it is the default *perspective* when you start Oxygen XML Editor plugin for the first time. Oxygen XML Editor plugin also includes a **Database** *perspective* that allows you to manage databases and their connections and a few debugging *perspectives* that allow you to detect problems in XSLT or XQuery transformations.

Supported Document Types

You can use the main editing pane in Oxygen XML Editor plugin to edit a large variety of document types. You can see the type of document association by the special icons displayed in the tabs of the editor title bar.

The supported document types include the following:

- - XML documents
- - XSLT stylesheets
- - XML Schema
- - DTD (Document Type Definition) schemas
- - RELAX NG full syntax schemas
- - RELAX NG compact syntax schemas
- - NVDL (Namespace-based Validation Dispatching Language) schemas
- - XSL:FO documents
- - XQuery documents
- - WSDL documents
- - Schematron documents
- - JavaScript documents
- - Python documents
- - CSS documents
- - XProc scripts
- - SQL documents
- - JSON documents
- - Ant build scripts
- - Markdown documents

Resources to Help You Get Started Using Oxygen XML Editor plugin

Configuring Oxygen XML Editor plugin

There are numerous ways that you can configure Oxygen XML Editor plugin to accommodate your specific needs.

- See the Configuring Oxygen section for details on the various ways that you can configure the application and its features.

Video Tutorials

The Oxygen XML Editor plugin website includes numerous video demonstrations and webinars that present many of the features that are available in Oxygen XML Editor plugin and show you how to complete specific tasks or how to use the various features.

- Go to the Oxygen XML Editor plugin Videos Page to see the list of video tutorials and webinars.

Oxygen XML Editor plugin Documentation

The Oxygen XML Editor plugin documentation includes a plethora of sections and topics to provide you with a variety of information, ranging from basic authoring tasks to advanced developer techniques. You can, of course, search through the documentation using standard search mechanisms, but you can also place the cursor in any particular position in the interface and use the **F1** key to open a dialog box that presents a section in the documentation that is appropriate for the context of the current cursor position. Aside from the other topics in this *Getting Started* section, the following are links to other sections of the documentation that might be helpful for your specific needs:

- **Text Editing Mode Section** - Provides information about the **Text** editor.
- **Author Editing Mode Section** - Provides information about the visual WYSIWYG-like **Author** editing mode.
- **XML Schema Diagram Editor** - Provides information about the schema design mode.
- **Editing Specific Document Types Chapter** - Includes information about editing numerous different types of documents.
- **DITA Authoring Chapter** - Provides information about using DITA to edit and structure your content.
- **Publishing Chapter** - Provides information about the various ways that you can publish content.
- **Importing Data Chapter** - Provides information about importing data from text files, MS Excel files, database data, and HTML files.
- **Tools Chapter** - Details about the various built-in tools that are available in Oxygen XML Editor plugin.

Sample Documents

Your installation of Oxygen XML Editor plugin includes a large variety of sample documents and projects that you can use as templates to get started and to experiment with the various features and technologies. They are located in the **samples** folder that is located in the installation directory of Oxygen XML Editor plugin. You will find files and folders for various types of documents, including the following:

- **Sample project file (*sample.xpr*)** - A sample project file that will allow you to experiment with how projects can be structured and used. When you open this project file, you will be able to see all the sample files and folders in the **Navigator** view.
- **Sample files (*personal.xml, etc.)*** - A collection of interrelated sample files that will allow you to experiment with the structure and relationship between XML files, stylesheets, and schemas.
- **Various document type folders** - The various folders contain sample files for numerous document types, such as CSS, DITA, DocBook, ePub, TEI, XHTML, and many others.

Other Resources

The following list includes links to various other resources that will help you get started using the features of Oxygen XML Editor plugin:

- See the Oxygen XML Editor plugin Blog Site for a large variety of current and archived blogs in regards to numerous features, requests, and instructional topics.

- Take advantage of the Oxygen XML Editor plugin Forum to see various announcements and learn more about specific issues that other users have experienced.
- If you are using DITA, see the incredibly helpful DITA Style Guide Best Practices for Authors.
- To learn about the WebHelp features in Oxygen XML Editor plugin, see the Publishing DITA and DocBook to WebHelp section of the website.
- For more information about various additional tools that are integrated into Oxygen XML Editor plugin, see the Tools section.
- See the External Resource Page for links to various other helpful resources, such as discussion lists, external tutorials, and more.
- See the Oxygen SDK section for details about the SDK that allows you to extend and develop Oxygen XML Editor plugin *frameworks* and *plugins*, and to integrate Eclipse plugins.
- For a list of new features that were implemented in the latest version of Oxygen XML Editor plugin, see the What's New Section of the Website

Your First Document or Project

This section includes several topics that will help you get started with your first document or project.

Your First XML Document

To create your first XML document, select **File** > **New** > **Other** > **Oxygen** or click the **New** button on the toolbar. The **New** document wizard is displayed:

You can either create a new XML document from scratch by choosing one of the available types in the wizard. You can also create one from a template by selecting **File** > **New** > **New from Templates** and choosing a template from the **Global templates** or **Framework templates** folders. If you are looking for a common document type, such as DITA or DocBook, you can find templates for these document types in the **Framework templates** folder. If your company has created its own templates, you can also find them there.

For some document types, you may find a lot of different templates. For example, there are numerous templates for DocBook documents, and DITA topic types and maps. Choose the template that best meets your needs.

Writing Your First Document

Depending on the type of document you choose, the Oxygen XML Editor plugin interface changes to support editing that document type. This may include new menus, toolbar buttons, and items in the contextual menus.

Also, depending on the type of document you choose, Oxygen XML Editor plugin may open your document in **Text** or **Author** mode. **Text** mode shows the raw XML source file, while **Author** mode shows a graphical view of the document.

The availability of **Author** mode for your document type depends on the type you choose and if there is a CSS stylesheet available to create the **Author** mode. Oxygen XML Editor plugin includes default **Author** mode views for most of the document types it supports. If your company has created its own document types, **Author** mode stylesheets may have also been created for that type. However, if you create a plain XML file, or one based on a schema that is not included in the Oxygen XML Editor plugin built-in support, you need to edit it in **Text** mode or create your own **Author** mode style sheet for it.

You can switch back and forth between **Author** mode and **Text** mode at any time by clicking the buttons at the bottom left of the editor window. You do not lose any formatting when switching from **Author** to **Text** mode. **Text** and **Author** modes are just different views for the same XML document.

There is also a **Grid** mode available that displays all content in an XML document as a structured grid of nested tables. This is useful for certain kinds of documents, particularly those that are structured like databases. You can also use it when you want to display XML content in a table-like manner (for example, if you need to extract XML content to a spreadsheet).

If you use **Author** mode, you might find that it is similar to word processors that you are used to. Likewise, the **Text** mode is similar to many typical text editors. If you are new to XML, the biggest difference is that XML

documents have a particular structure that you have to follow. Oxygen XML Editor plugin assists you with a continuous validation of the XML markup.

Structuring Your First Document

Each XML document type has a particular structure that you have to follow as you write and edit the document. Some document types give you a lot of choices, while others give you very few. In either case, you need to make sure that your document follows the particular structure for the document type you are creating. This means:

- At any given location in the document, there are only certain XML elements allowed. Oxygen XML Editor plugin helps you determine which elements are allowed. In **Author** mode, when you press **Enter**, Oxygen XML Editor plugin assumes that you want to enter a new element and shows you a list of elements that can be created in this location. Keep typing until the element you want is highlighted and press **Enter** to insert the element. If you want to view the overall structure of a document and see what is allowed (and where), you can use the **Model** view (**Window** > **Show View** > **Model**).
- When you create certain elements, you may find that your text gets a jagged red underline and you get a warning that your content is invalid. This is usually because the element you have just created requires certain other elements inside of it. Your document will be invalid until you create those elements. Oxygen XML Editor plugin does its best to help you with this. If there is only one possible element that can go inside the element you just created, Oxygen XML Editor plugin creates it for you. However, if there is more than one possibility, you have to create the appropriate elements yourself. In many cases, Oxygen XML Editor plugin presents XML *Quick Fixes* that help you resolve errors by offering proposals to quickly fix problems such as missing required attributes or invalid elements.

Editing Your First Document

Once you have completed the first draft of your document, you may need to edit it. As with any editor, Oxygen XML Editor plugin provides the normal cut, copy, and paste options as well as drag and drop editing. However, when you are editing an XML document, you have to make sure that your edits respect the structure of the XML document type. In fact, you are often editing the structure as well as the content of your document.

Oxygen XML Editor plugin provides many tools to help you edit your structure and to keep your structure valid while editing text.

The Document Breadcrumbs

Across the top of the editor window (in **Text** mode), there is a set of breadcrumbs that shows you exactly were the insertion point is in the structure of the document. You can click any element in the breadcrumbs to select that entire element in the document.

Showing Tags

To see exactly where you are in the structure of the document, you can show the tags graphically in the **Author** view. There are several levels of tag visibility that you can choose using the **Tags Display Mode** drop-down menu on the toolbar (the button may look a little different than this, as it changes to reflect the level of tags currently displayed).

Outline View

The **Outline** view shows you the structure of your document in outline format. You can use it to select elements, or to move elements around in the document.

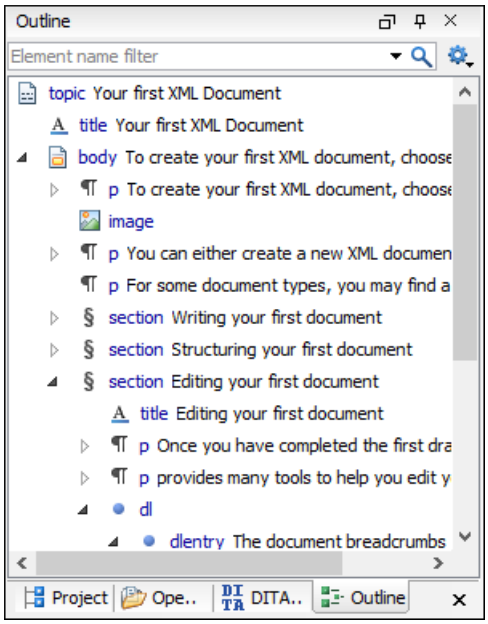


Figure 1: Outline View

You can configure the **Outline** view to determine what is shown, such as element names, attributes, and comments. Certain choices may work better for particular document types. You can also filter the **Outline** view to show only elements with a certain name.

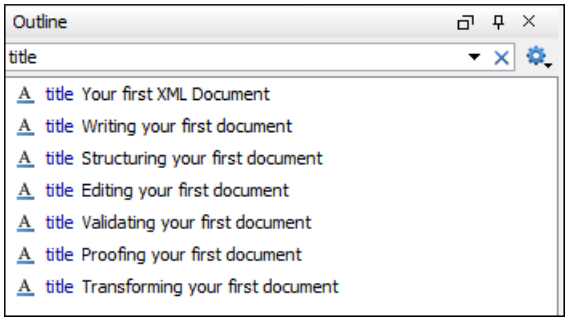


Figure 2: Outline View Filtered to only Show Element Names

Cut and Paste, Drag and Drop

You can cut and paste or drag and drop text, just as you would in any other editor. However, when you do this in **Author** view, it is important to remember that you are actually moving blocks of XML. When you cut and paste or drag and drop a block of XML, the result has to be valid both where the content is inserted, and where it is removed from.

A big part of doing this correctly is to make sure that you pick up the right block of text in the first place. Using the breadcrumbs or **Outline** view, or showing tags and using them to select content, can help ensure that you are selecting the right chunk of XML.

If you do try to paste or drop a chunk of XML somewhere that is not valid, Oxygen XML Editor plugin warns you and tries to suggest actions that make it valid (such as by removing surrounding elements from the chunk you are moving, by creating a new element at the destination, or by inserting it in a nearby location).

If you are using **Author** mode, you can also switch to **Text** mode to see exactly which bits of XML you are selecting and moving.

Refactoring actions

You can perform many common structure edits, such as renaming an element or wrapping text in an element, using the actions in the **Refactoring** menu of the contextual menu. More advanced refactoring operations are also available using the **XML Refactoring** tool that is available in the **XML Tools** menu.

Validating Your First Document

Validation is the process of making sure that an XML document abides by the rules of its schema. If Oxygen XML Editor plugin knows how to find the schema, it validates the document for you as you type. Oxygen XML Editor plugin finds the schema automatically for most of the document types created from templates. However, in some cases you may have to tell it how to find the schema.

When Oxygen XML Editor plugin validates as you type, there is a small bar at the right edge of the editor that shows you if the document is invalid and where errors are found. If the indicator at the top of that bar is green, your document is valid. If the document is invalid, the indicator turns red and a red flag shows you where the errors are found. Click that flag to jump to the error. Remember that sometimes your document is invalid simply because the structure you are creating is not yet complete.

In addition to problems with the validity of the XML document itself, Oxygen XML Editor plugin also reports warnings for a number of conditions, such as if your document contains a cross reference that cannot be resolved, or if Oxygen XML Editor plugin cannot find the schema specified by the document. The location of these warnings is marked in yellow on the validation bar. If the document contains warnings, but no errors, the validity indicator turns yellow.

You can also validate your document at any time by selecting the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu.. When you validate in this manner, if errors are found, the validation result opens in a new pane at the bottom of the editor that shows each validation error on a separate line. Clicking the error takes you to the location in your document where the error was detected.

Note: Be aware that the problem is sometimes in a different location from where the validator detects the error. To get more information about a validation error, right-click a validation error message, and select **Show Message**.

Proofing Your First Document

Oxygen XML Editor plugin includes an automatic (as-you-type) spell checking feature, as well as a manual spell checking action. To check the spelling of your document manually, use the **Check Spelling** action on the toolbar.

Transforming Your First Document

An XML document must be transformed to be published. Transformations are specific to the particular type of document you have created. For example, a DITA transformation cannot be used on a DocBook file, or vice versa. A single document type may have many multiple transformations that produce different kinds of outputs. For some document types, such a DITA, many different content files may be combined together by a transformation. You need to locate and launch a transformation that is appropriate for your document type and the kind of output you want to generate.

Oxygen XML Editor plugin uses transformation scenarios to control the transformation process. Depending on the document type you have created, there may be several transformation scenarios already configured for your use. This may include the default transformation scenarios supplied by Oxygen XML Editor plugin or ones created by your organization.

To see the list of transformations available for your document, select the **Apply Transformation Scenario(s)** action from the toolbar or the **XML** menu. A list of available transformation scenarios are displayed. Choose one or more scenarios to apply, and click **Apply associated**. Exactly how your transformed content appears depends on how the transformation scenario is configured.

Getting Started with DITA

The information in this topic is meant to be a very basic starting point for those who are just getting started using DITA in Oxygen XML Editor plugin. Oxygen XML Editor plugin makes it easy to create, edit, manage, and publish DITA content, but it requires at least some basic DITA knowledge. To truly get the most out of Oxygen XML Editor plugin and all of its DITA-related features, you should explore resources in the online DITA community to acquire knowledge of its concepts and uses.

Understanding DITA Topics

It is important to understand the role that a DITA topic plays in a DITA project. A DITA topic is not associated with a single published document. It is a separate entity that can potentially be included in many different books, help systems, or websites. Therefore, when you write a DITA topic you are not writing a book, a help system, or a website. You are writing an individual piece of content. This affects how you approach the writing task and how Oxygen XML Editor plugin works to support you as you write.

Most of your topics are actually related to other topics, and those relationships can affect how you write and handle things such as links and content reuse. Oxygen XML Editor plugin helps you manage those relationships. Depending on how your topics are related, you can use the tools provided in Oxygen XML Editor plugin, along with the features of DITA, in a variety of ways.

Creating a DITA Topic in Oxygen XML Editor plugin

To create a DITA topic:

1. Select **File** > **New** > **Other** > **Oxygen XML Editor plugin**, or click the **New** button on the toolbar, and select **New from Templates**.

   Step Result: The **New from Templates Wizard** is displayed:

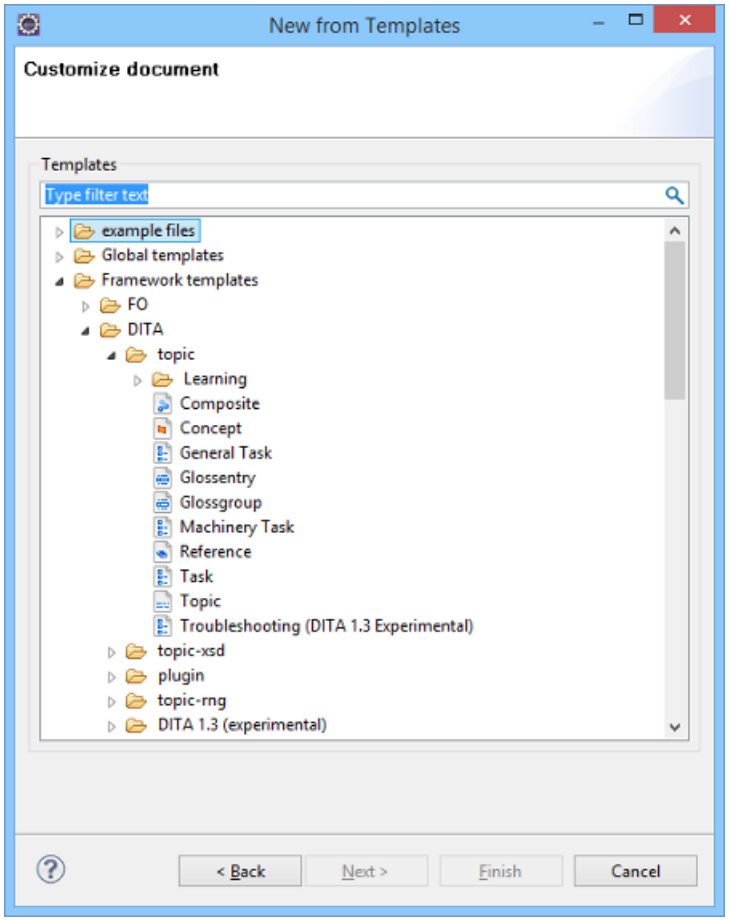


   Figure 3: New DITA Document from Templates Wizard

2. Go to **Framework templates** > **DITA** > **topic** and select the type of topic that you want to create, then click **Next**.

   Note: If your organization has created DITA customizations, the appropriate template files may be in another location, and various types of topics may be provided for your use. Check with the person who manages your DITA system to see if you should be using templates from another directory.
3. Select a file path where it will be saved.
4. Click **Finish**.

Result: Your document is opened in the editor. Eventually you will need to add a reference to it in your DITA map.

Your DITA topic is an XML document, thus all the editing features that Oxygen XML Editor plugin provides for editing XML documents also apply to DITA topics. Oxygen XML Editor plugin also provides additional specific DITA-related support for working with DITA topics, their associated *DITA maps*, and for creating DITA output.

Role of Maps

The basic method that DITA uses to express the relationship between topics is through a *DITA map*. Other relationships between topics, such as cross references, generally need to be made between topics in the same root map. DITA uses maps to determine which topics are part of any output that you create. While customized DITA solutions can use other mechanisms, generally DITA is not used as a way to publish individual topics. Output is created from a map and includes all the topics referenced by the map.

A publication is not always represented by a single map. For instance, if you are writing a book, you might use a submap to create each chapter and then organize the chapters in a main root map to create the book. This helps you to manage your content, offers the possibility of reusing submaps, and segregates content to support multiple people working on the same project.

Creating a Map in Oxygen XML Editor plugin

To create a map:

1. Select **File** > **New** > **Other** > **Oxygen XML Editor plugin**, or click the **New** button on the toolbar, and select **New from Templates**.
2. Go to **Framework templates** > **DITA Map** > **map** and select the type of map you want to create.
3. Choose whether you want to open the map in the **Editor** or in the **DITA Maps Manager**. Usually, opening it in the **DITA Maps Manager** is the best choice. The **DITA Maps Manager** presents a view of the *DITA map* that is similar to a table of contents.

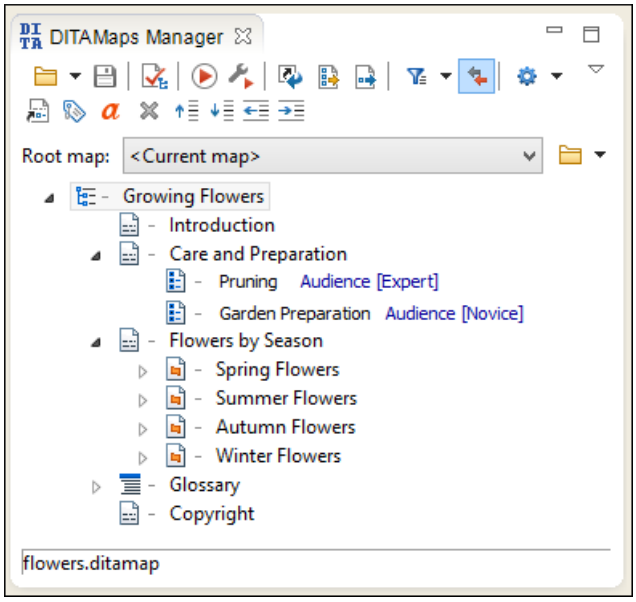


Figure 4: DITA Maps Manager View

Adding Existing Topics to a Map in Oxygen XML Editor plugin

There are several ways to add a topic reference to a map. Perhaps the easiest method is to add a reference to a topic that is already open in the editor:

1. Open the DITA topic in the main editing window.
2. Right-click the *DITA map* in the **DITA Maps Manager** view and choose **Reference to the currently edited file** from the **Append Child**, **Insert Before**, or **Insert After** submenu.

Step Result: This opens the **Insert Reference** dialog box with all of the required fields already filled in for you.

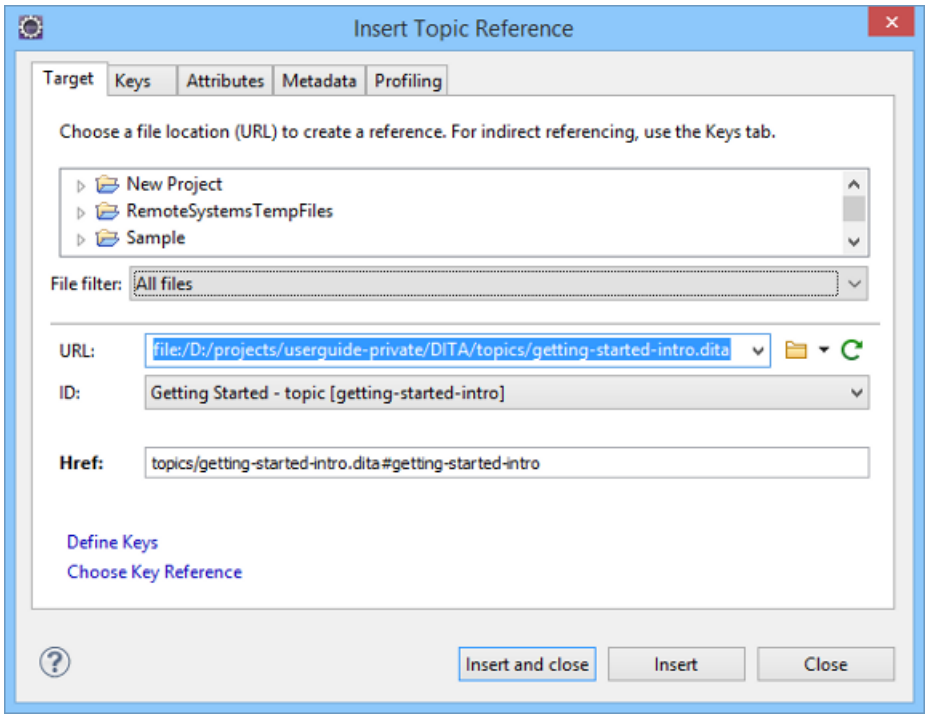


Figure 5: Insert Reference Dialog Box

3. You can fill in additional information in the various tabs in this dialog box or add it to the map later.
4. Select **Insert and close** to add a reference to your topic in the map.
5. Save the *DITA map*.

Adding New Topics to a Map in Oxygen XML Editor plugin

As you add topics to your map, you may want to create a new topic as a child or sibling of another topic. This is usually done at the map level.

To add a new topic to a map, follow these steps:

1. In the **DITA Maps Manager**, right-click the node in the current map where you want to add the new topic.
2. Select one of the following actions:
   - **Append Child** > **New** - Select this action to insert the new topic as a child of the selected node. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert Before** > **New** - Select this action to insert the new topic as a sibling to the current node, before it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert After** > **New** - Select this action to insert the new topic as a sibling to the current node, after it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Duplicate** - Select this action to create a copy of the selected topic and insert it as a sibling. This action opens a dialog box that allows you to choose the file name and location for the newly created copy of the topic. After you have selected the name and path for your new topic, click **OK**.

   Step Result: The new topic is now referenced (as a `topicref`) in the *DITA map* at the location where you inserted it and the new topic is opened in the editor.
3. Save the *DITA map*.

You can also change the order and nesting of topics in the **DITA Maps Manager** view by doing either of the following:

- Select the topic to move while holding down the **Alt** key and use the arrow keys to move it around.
- Use the mouse to drag and drop the topic to the desired location.

The way your parent and child topics are organized in any particular output depends on both the configuration of those topics in the map and the rules of the output transformation that is applied to them. Do not assume that your topics must have the same organization for all output types. The map defines the organization of the topics, not the topics themselves. It is possible to create a variety of maps, each with different organization and configuration options to produce a variety of outputs.

Adding Submaps in Oxygen XML Editor plugin

If you have a large set of information, such as a long book or extensive help system, a single map can become long and difficult to manage. To make it easier to manage, you can break up the content into smaller submaps. A submap might represent a chapter of a book, a section of a user manual, or a page on a website. To build a publication out of these smaller maps, you must add them to a map that represents the overall publication.

To add a child map to the current map:

1. Right-click the parent *DITA map* in the **DITA Maps Manager** view and choose **Append child** > **Map reference**.

   Step Result: This opens the **Insert Reference** dialog box with all of the required fields already filled in for you.
2. You can fill in additional information in the various tabs in this dialog box or add it to the map later.
3. Select **Insert and close** to add a reference to your submap in the main map.
4. Save the main *DITA map*.

Validating a Map in Oxygen XML Editor plugin

Just as it is with your individual topics, it is important to validate your maps. Oxygen XML Editor plugin provides a validation function for *DITA maps* that does more than simply validating that the XML is well formed. It also does the following:

- Validates all of the relationships defined in the maps.
- Validates all of the files that are included in the map.
- Validates all of the links that are expressed in the files.

Validating the map that describes your entire publication validates all the files that make up the publication and all of the relationships between them.

To validate a map:

1. Click the **Validate and Check for Completeness** button in the **DITA Maps Manager** view.

   Step Result: This opens the **DITA Map Completeness Check** dialog box.
2. Select any of the various options you want to check.
3. Click **Check** to run the validation process.

Publishing Your Topics in Oxygen XML Editor plugin

As noted previously, in DITA standards you usually do not publish output from an individual topic. Instead, you create published output by running a DITA transformation on a map. This collects all the topics that are referenced in the map, organizes them, and produces output in a particular format. By default, Oxygen XML Editor plugin uses the transformations provided by the **DITA Open Toolkit** for publishing to various output formats (such as PDF, WebHelp or EPUB). Your organization may have created various custom transformations or modified the built-in **DITA Open Toolkit** transformations. In either case, Oxygen XML Editor plugin manages them by using transformation scenarios.

To publish output for a map:

1. Click the **Configure Transformation Scenario(s)** button in the **DITA Maps Manager** view.

   Step Result: This opens the **Configure Transformation Scenario(s)** dialog box.

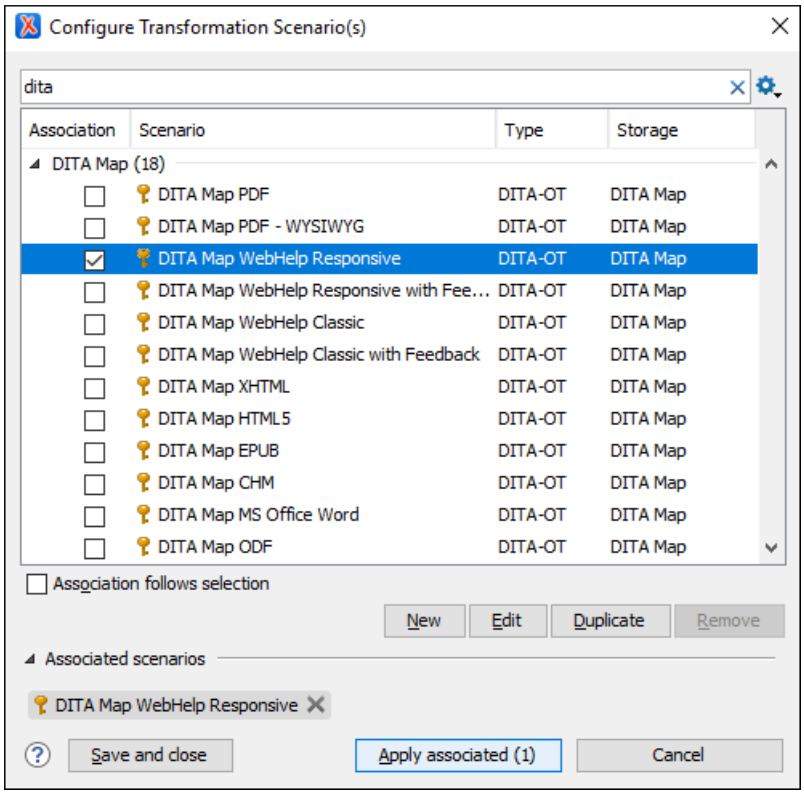


Figure 6: Configure Transformation Scenarios Dialog Box

2. Select the appropriate transformation depending on the type of output you desire.
3. To change or view the configuration or storage options for a transformation scenario, select the transformation and click **Edit**.
4. Click **Apply associated**.

   Result: Depending on the configuration of the transformation scenario, when the transformation is finished, your output may automatically be opened in the appropriate application.

Related Information:

DITA Authoring on page 1458
Editing XML Documents in Author Mode on page 441

Creating a New Project

Oxygen XML Editor plugin allows you to organize your XML-related files into projects. This helps you manage and organize your files and also allows you to perform batch operations (such as validation and transformation) over multiple files. Use the **Navigator** view to manage projects, and the files and folders contained within.

Creating a New Project

To create a new project, select **New** > **XML Project** or **New** > **Sample XML Project** from the contextual menu or **File** menu. This opens a dialog box that allows you to create and customize a new project and adds it to the structure of the project in the **Navigator** view.

Adding Items to the Project

To add items to the project, select the desired document type or folder from the **New** menu of the contextual menu, when invoked from the **Navigator** view (or from the **File** menu). You can also create a document from a template by selecting **New** > **New from Templates** from the contextual menu.

Using Linked Folders (Shortcuts)

Another easy way to organize your XML working files is to place them in a directory and then to create a corresponding linked folder in you project. If you add new files to that folder, you can simply use the **Refresh (F5)** action from the toolbar or contextual menu and the **Navigator** view will display the existing files and subdirectories. If your files are scattered amongst several folders, but represent the same class of files, you might find it useful to combine them in a logical folder.

You can create linked folders (shortcuts) by dragging and dropping folders from the Windows Explorer (Mac OS X Finder) to the project tree, or by using the contextual menu from the location in the project tree where you want it added and selecting **New** > **Folder** > **Advanced**. The linked folders presented in the **Navigator** view are marked with a special icon. To create a file inside a linked folder, use the contextual menu and select **New** > **File** (you can use the **Advanced** button to link to a file in the local file system).

Note: Files may have multiple instances within the folder system, but cannot appear twice within the same folder.

For more information on managing projects and their content, see Navigator View on page 157.

Related Information:
Using Projects to Group Documents on page 375

Getting Help

If you run into specific problems while using Oxygen XML Editor plugin you can take advantage of a variety of support related resources. Those resources include the following:

- The Oxygen XML Editor plugin Support Section of the Website
- The Oxygen XML Editor plugin Forum
- The Oxygen XML Editor plugin Video Tutorials
- The Common Problems and Solutions Section of the User Manual
- The Online Technical Support Form

The application also includes various specific help-related resources in the **Help** menu.

Help Menu

The Oxygen XML Editor plugin **Help** menu provides various resources to assist you with your tasks.

This menu includes the following actions or options:

Welcome

This option opens the **Welcome** screen that includes some resources to assist you with using Oxygen XML Editor plugin.

Help Contents

Use this action to open a dialog box that presents Eclipse help topics and it includes a section that is specific to Oxygen XML Editor plugin. Also, you can use the **F1** key to open a **Help** view that presents a section in the User Manual that is appropriate for the context of the current cursor position.

Report Oxygen problem

You can use this option to open a dialog box that allows you to write the description of a problem that was encountered while using the application. You can also select additional information to be sent to the technical support team in the five tabs:

- **General info** - You can edit your contact details in case you want to be contacted for further details or to be notified of a resolution.
- **Class Loader URLs** - You can choose whether or not to include the listed *Class Loader URLs* with your report.
- **System properties** - You can choose whether or not to include the listed system property details with your report.

Tip: You are able to change the URL where the reported problem is sent by using the *com.oxygenxml.report.problems.url* system property. The report is sent in XML format through the `report` parameter of the POST HTTP method.

- **Plugins** - You can choose whether or not to include details about your installed *plugins* with your report.
- **Frameworks** - You can choose whether or not to include details about your installed *frameworks* with your report.

Support Tools > Randomize XML text content

Use this action when you need to send samples to the *Oxygen* support team and you want to keep the text content confidential. It opens a dialog box that allows you to select the resources for which the text content will be randomized. You can then save the resources and send them to the *Oxygen* support team without fear of compromising sensitive or private data. For more information, see Randomize XML Text Content on page 15.

Warning: Before using this action, it is highly recommended that you copy the XML resources to be processed, save them in a separate folder, and then process this operation on the copies instead of the original files. Otherwise, you may lose your original content.

About Eclipse

Use this option and then click the Oxygen XML Editor plugin icon to open a dialog box that contains information about Oxygen XML Editor plugin and the installed version.

Related Information:

Details to Submit in a Request for Technical Support Using the Online Form on page 1447

Randomize XML Text Content

Oxygen XML Editor plugin includes an action that randomizes the text content of an XML document. This action is available in the **Help** > **Support Tools** menu. It is helpful if you need to send XML samples to the *Oxygen* support team and you want to keep the text content confidential. It opens a dialog box that allows you to select the resources for which the text content will be randomized. You can then save the resources and send them to the *Oxygen* support team without fear of compromising sensitive or private data.

Warning: Before using this action, it is highly recommended that you copy the XML resources to be processed, save them in a separate folder, and then perform this operation on the copies instead of the original files. Otherwise, you may lose your original content.

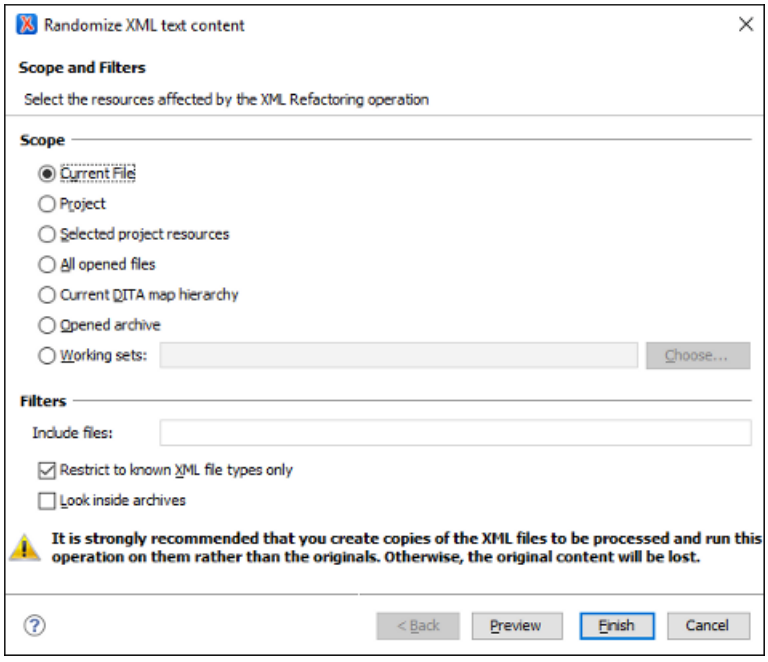


Figure 7: Randomize XML Text Content Dialog Box

The **Randomize XML Text Content** dialog box includes the following options:

Scope

Allows you to select the set of files whose text content will be randomized by the operation. You can select from predefined resource sets (such as the current file, your whole project, the current *DITA map* hierarchy for DITA projects, etc.) or you can define your own set of resources by creating a *working set*.

Filters

This section includes the following options:

- **Include files** - Allows you to filter the selected resources by using a file pattern. For example, to restrict the operation to only analyze build files you could use `build*.xml` for the file pattern.
- **Restrict only to known XML file types** - When selected, only resources with a known XML file type will be affected by the operation.

Accessibility Support in Oxygen

Our company is dedicated to developing software products that are usable for everyone, including those with physical challenges and disabilities. Oxygen XML Editor plugin was designed to adhere to the U.S. Government Section 508 accessibility standards: https://www.oxygenxml.com/xml_editor/section508.html

Adjusting Fonts and Colors

If you have low vision, go to **Options** > **Preferences** > **Appearance** > **Fonts** where you can adjust the font styles and sizes used in the entire application, both for the editing areas and UI labels. If you have color blindness, you can also adjust most of the colors used in Oxygen XML Editor plugin by going to **Options** > **Preferences** > **Appearance** and changing the current color theme. You can also search for other color related setting in the **Preferences** dialog box.

Text to Speech Narrators (JAWS)

If you are using a text to speech narrator, Oxygen XML Editor plugin support this since it is a Java application and it is periodically tested on Windows using the JAWS screen reader: http://www.freedomscientific.com/Products/Blindness/JAWS.

For JAWS to work, you need to enable the Java access bridge in Oxygen XML Editor plugin: http://docs.oracle.com/javase/7/docs/technotes/guides/access/enable_and_test.html

Since Oxygen XML Editor plugin comes bundled with its own Java VM, you need to open a console in the `jre` folder bundled with Oxygen XML Editor plugin and run the following command:

```
D:\PATH\TO\OXYGEN_INSTALLATION_FOLDER\jre>bin\jabswitch -enable
```

You will receive a notification in the console that the access bridge has been enabled.

Once the Java access bridge is enabled and if the JAWS narrator is active, when Oxygen XML Editor plugin starts, the narrator will start reading content from Oxygen XML Editor plugin and you can interact with the application, read menus, content from opened XML documents, and UI components from dialog boxes and side views.

Hints for the Visually Impaired

Here are a few hints for using Oxygen XML Editor plugin if you are visually impaired:

- The top main menu should contain most of the actions that you need to open, save, and close documents, switch between opened documents, or switch between the various editing modes for XML documents that are already opened.
  - The **File** menu contains actions to open, save, or close the currently edited XML document.
  - The **Edit** menu contains actions to undo/redo or cut/copy/paste content. They also have the usual shortcuts that can be used instead of directly invoking the actions from the menu.

    - The **Find** menu contains an action to show the **Find/Replace** dialog box. Sometimes the **JAWS** narrator overloads the **CTRL-F** shortcut and presents its own find/replace window but the Oxygen XML Editor plugin **Find/Replace** dialog box provides the ability to perform complex find/replace operations in the opened file.
    - In the **Options** menu, you have access to the **Preferences** dialog box that contains global application settings and access to the **Menu Shortcut Keys** table where you can configure shortcuts for the most commonly used actions.
    - The **Window** menu includes actions to switch between opened XML documents. Also, you can use the **Show view** submenu open a particular side view and move the focus to that view.
- An opened XML document can be edited with accessibility support either in the **Text** editing mode (where the XML tags are accessible in the edited content) or in the visual **Author** editing mode (where the XML tags are hidden and only the text content is shown). You can switch between these editing modes by using the **Document** > **Edit Mode** menu.
    - **Text** mode provides access to the entire source document with all of its **XML** content, just like you have in any text editing application. In addition, using the **Window** > **Show view** submenu, you can change focus to the **Attributes**, **Elements**, or **Outline** view. The **Attributes** view presents the existing and possible attributes that can be inserted in an XML tag. The **Elements** view shows you the list of XML elements that can be inserted at cursor position (also, pressing F2 on a selected element presents its annotation). The **Outline** view shows the current path in the XML structure.
    - **Author** mode is useful for reviewing written XML content because it has support for change tracking and for adding comments. Editing in the **Author** visual editing mode, you have access only to the text content in the XML document. Pressing **Shift-F2** will read to you the location in the XML structure. Again, you can also use the **Outline** view for this. In the **Author** editing mode, you can also use the **Attributes** and **Elements** views similar to using them in the **Text** editing mode. Pressing **ENTER** in the **Author** visual editing mode can also be used to present a list of allowed elements at the current position.

Installation

3

Topics:

- Installing Oxygen as an Eclipse Plugin
- Site-Wide Deployment
- Licensing
- Floating License Servers
- Upgrading
- Uninstalling

Oxygen XML Editor plugin is available on Windows, Linux, and Mac OS X and there are a variety of methods and options for installing and running Oxygen XML Editor plugin on your system or server. This section also includes information about registering, transferring, or releasing licenses, upgrading, installing *add-ons*, and uninstalling.

Choosing How Oxygen XML Editor plugin Runs

You can install Oxygen XML Editor plugin to run in several ways:

- As a desktop application (running standalone or as an Eclipse plugin) on Windows, Linux, or Mac OS X.
- As a desktop application (running standalone or as an Eclipse plugin) on a Unix or Linux server or on Windows Terminal Server.

Choosing an Installer

You also have a choice of several different installers:

- The native installer for your platform (Windows, Linux, or Mac OS X).
- On Windows and Linux, the native installer can also run in unattended mode.
- The Update Site installer.
- The Zip archive installer.

Choosing a License Option

You must obtain and register a license key to run Oxygen XML Editor plugin.

You can choose from two types of licenses:

- A named-user license, which can be used by a single person on multiple computers.
- A floating license, which can be used by different people at different times. Only one person can use a floating license at a time.

Upgrading, transferring, and uninstalling.

You can also upgrade Oxygen XML Editor plugin, transfer a license, or uninstall Oxygen XML Editor plugin.

Getting help with installation

If you need help at any point during these procedures, please send us an email at support@oxygenxml.com.

Installing Oxygen as an Eclipse Plugin

System Requirements

Operating Systems

- Windows Vista, Windows 7, Windows 8, Windows 10, Windows Server 2008, Windows Server 2012
- OS X version 10.8 64-bit or later
- Any Unix/Linux distribution with an available Java SE Runtime Environment version 1.6.0 or later from Oracle

CPU

- Minimum - 1 GHz processor
- Recommended - Dual Core class processor

Memory

- Minimum - 2 GB of RAM
- Recommended - 4 GB of RAM

Storage

- Minimum - 400 MB free disk space
- Recommended - 1 GB free disk space

Java

On Eclipse, Oxygen XML Editor plugin uses the same Java Virtual Machine as the copy of Eclipse it is running in.

Eclipse

The following Eclipse versions are officially supported: 3.6-3.8, 4.2-4.7.

Update Site Method

To install the Eclipse plugin using the *Update Site* method, follow this procedure:

1. Start Eclipse.
2. Go to **Help** > **Install New Software** > **Available Software**.
3. Click **Add** in the **Available Software** dialog box.
4. Enter `http://www.oxygenxml.com/InstData/Editor/Eclipse/site.xml` into the **Location** field of the **Add Site** dialog box.
5. Click **OK**.
6. Select the **Oxygen XML Editor plugin** checkbox.
7. Click **Next** and continue with the rest of the installation wizard.
8. Restart Eclipse when prompted.
9. Verify that Oxygen XML Editor plugin is installed correctly by creating a new XML Project. Go to **File** > **New** > **Other** and choose **Oxygen XML Editor plugin** > **XML Project**.
10. When prompted for a license key, enter the license information received in the registration email.

    Note: If you already have a native version of Oxygen XML Editor plugin installed on your computer, you will not be prompted for a license key for the Eclipse version. The existing license key will be used automatically.

Zip Archive Method

To install the Eclipse plugin using the *Zip Archive* method, follow this procedure:

1. Download the zip archive with the Eclipse plugin.
2. Unzip the downloaded zip archive in the `dropins` subdirectory of the Eclipse installation directory.
3. Restart Eclipse.

4. Verify that Oxygen XML Editor plugin is installed correctly by creating a new XML Project. Go to **File** > **New** > **Other** and choose **Oxygen XML Editor plugin** > **XML Project**.
5. When prompted for a license key, enter the license information received in the registration email.

   Note: If you already have a native version of Oxygen XML Editor plugin installed on your computer, you will not be prompted for a license key for the Eclipse version. The existing license key will be used automatically.

Site-Wide Deployment

If you are deploying Oxygen XML Editor plugin for a group, there are various things you can do to customize Oxygen XML Editor plugin for your users and to make the deployment more efficient.

Creating custom default options

You can create a custom set of default options for Oxygen XML Editor plugin. These will become the default options for each of your users, replacing the normal default settings. Users can still set options to suit themselves in their own copies of Oxygen XML Editor plugin, but if they choose to reset their options to defaults, the custom defaults that you set will be used.

Creating default project files

Oxygen XML Editor plugin project files are used to configure a project. You can create and deploy default project files for your projects so that your users will have a preconfigured project file to begin work with.

Using floating licenses

If you have a number of people using Oxygen XML Editor plugin on a part-time basis or in different time zones, you can use a floating license so that multiple people can share a license.

Licensing

Oxygen XML Editor plugin is not free software. To activate and use Oxygen XML Editor plugin, you need a license.

For demonstration and evaluation purposes, a time limited license is available upon request at https://www.oxygenxml.com/register.html. This license is supplied at no cost for a period of 30 days from the date of issue. During this period, the software is fully functional, enabling you to test all its functionality. To continue using the software after the trial period, you must purchase a permanent license.

Choosing a License Type

You can use one of the following license types with Oxygen XML Editor plugin:

1. A **Named-User License** may be used by a single *Named User* on one or more computers. Named-user licenses are not transferable to a new *Named User*. If you order multiple named-user licenses, you will receive a single license key good for a specified number of *named users*. It is your responsibility to keep track of the *named users* that each license is assigned to.
2. A **Floating License** may be used by any user on any machine. However, the total number of copies of Oxygen XML Editor plugin in use at one time must not be more than the number of floating licenses available. A user who runs two different distributions of Oxygen XML Editor plugin (for example, Standalone and Eclipse Plugin) at the same time on the same computer, consumes a single floating license.
3. A **Subscription** license that allows you to use the application for a specific period of time (either 6 months or 1 year). This type of license is user-based and is covered by a Support and Maintenance Pack, which means that during the subscription period you will get free upgrades to all major and minor releases and priority technical support.
4. A special **Academic Group License** (*Classroom*, *Department*, or *Site* license) may be used by students and teachers in academic institutions. These licenses provide a cost effective way of getting access to Oxygen XML Editor plugin for learning purposes.

For definitions and legal details of the license types, consult the End User License Agreement available at https://www.oxygenxml.com/eula.html.

Obtaining a License Key

You can obtain a license key for Oxygen XML Editor plugin in one of the following ways:

- You can purchase one or more licenses from the Oxygen XML Editor plugin website at https://www.oxygenxml.com/buy.html. A license key will be sent to you by email.
- If your company or organization has already purchased licenses, please contact your license administrator to obtain a license key.
- If you purchased a subscription and you received a registration code, you can use it to obtain a license key from https://www.oxygenxml.com/registerCode.html. A license key will be sent to you by email.
- If you want to evaluate the product, you can obtain a trial license key for 30 days from the Oxygen XML Editor plugin website at https://www.oxygenxml.com/register.html.

Register a Named-User or Subscription License

To register a *Named-User License* or *Subscription License* on a machine owned by the *Named User*, follow these steps:

1. Purchase a license from the Oxygen XML Editor plugin website. You will receive an email that contains your license key.
2. Save a backup copy of your email message that contains the new license key.
3. Open an XML document in the Oxygen XML Editor plugin.
   If this is a new install of Oxygen XML Editor plugin, the registration dialog box is displayed. If the registration dialog box is not displayed, go to **Window** (**Eclipse** on Mac OSX) and choose **Preferences** > **Oxygen XML Editor plugin** and click the **Register** button.

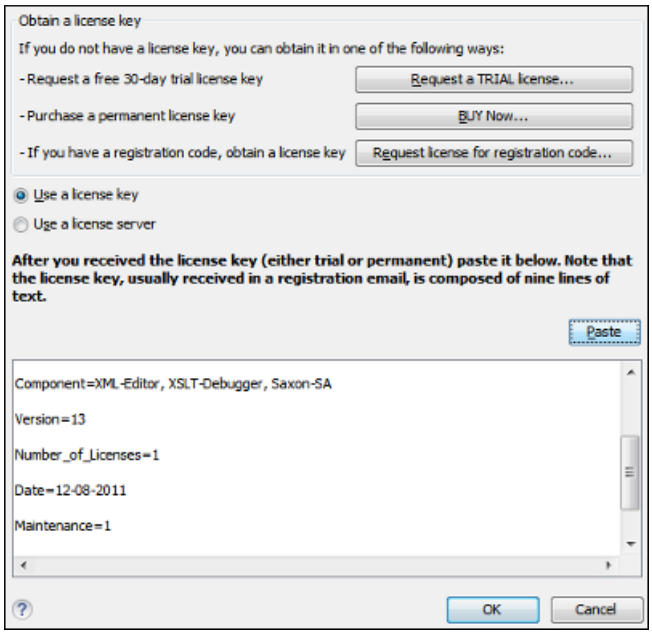


Figure 8: License Registration Dialog Box

4. Select **Use a license key** as the licensing method.
5. Paste your license key into the registration dialog box. The license key is composed of nine lines of text between two text markers.
6. Press **OK**.

Related Information:

Oxygen XML Editor plugin End-User License Agreement

Floating Licenses

The floating license type is commonly used by organizations that have a large number of infrequent users who do not need to use Oxygen XML Editor plugin all at the same time. Instead of each user having their own individual

license key to use at their discretion, there are a pool of licenses that are used one at a time by various users upon request.

To use floating licenses, a license server is required and the license key needs to be activated. Your system administrator will most likely be responsible for setting up the license server. Then you will need to request a floating license from the server. This process is designed to help you comply with the *Oxygen End User License Agreement*. This means that the license key will be locked to a particular license server deployment, and the same license key cannot be used with any other license server.

For information about releasing and returning a floating license to the pool for other users, see Releasing a Floating License on page 23.

For information about reserving (or locking) a floating license so that it does not get returned to the pool, see Reserving a Floating License on page 23.

Requesting a Floating License from an HTTP License Server

To request a floating license from an HTTP license server, follow this procedure:

1. Contact your server administrator to make sure the license server has already been set up and get network address and login details for the license server.
2. Start the Eclipse platform.
3. Open the **Preferences** dialog box and click the **Register** button.
   The license registration dialog box is displayed.
4. Choose **Use a license server** as licensing method.
5. Select **HTTP/HTTPS Server** as server type.
6. In the *URL* field, enter the address of the license server.

   The URL address has the following format: `http://hostName:port/oXygenLicenseServlet/license-servlet`.
7. Complete the *User* and *Password* fields.
8. Click the **OK** button.

If a floating license is available, it is registered in Oxygen XML Editor plugin. To display the license details, open the **Preferences** dialog box . If a floating license is not available, you will get a message listing the users currently using floating licenses.

Related Information:

Setting up an HTTP Floating License Server on page 24

Requesting a Floating License from a TCP License Server

Use this procedure if your company uses an Oxygen XML Editor plugin TCP license server and the license server has already been set up by your server administrator:

1. Contact your server administrator to get network address and login details for the license server.
2. Start the Eclipse platform.
3. Open the **Preferences** dialog box and click the **Register** button.
   The license registration dialog box is displayed.
4. Choose **Use a license server** as licensing method.
5. Select **TCP server** as server type.
6. In the *Host* field, enter the host name or IP address of the license server.
7. In the *Port* field, enter the port number used to communicate with the license server.
8. Click the **OK** button.

If a floating license is available, it is registered in Oxygen XML Editor plugin. To display the license details, open the **Preferences** dialog box . If a floating license is not available, you will get a message listing the users currently using floating licenses.

Related Information:

Setting up a TCP Floating License Server Using a 32-bit Windows Installer on page 29

Setting up a TCP Floating License Server Using All-Platforms Distribution on page 31

Releasing a Floating License

The floating license you are using will be released and returned to the pool if any of the following occur:

- The connection with the license server is lost.
- The Oxygen XML Editor plugin will consume one license from the server's pool of licenses if at least one *Oxygen* editor window is opened (not necessarily focused). In other words, if a user wants to release a license, all *Oxygen* editor windows must be closed.
- You exit the application running on your machine, and no other copies of Oxygen XML Editor plugin running on your machine are using your floating license.
- You register a *Named User* license with your copy of Oxygen XML Editor plugin, and no other copies of Oxygen XML Editor plugin running on your machine are using your floating license.
- Your computer idles for more than 2 hours.
- Your system administrator manually revokes the license.

Tip: To prevent your floating license from being released, you can use the **Lock floating license** action available in the **Preferences** dialog box (go to **Window** (**Eclipse** on Mac OSX) and choose **Preferences** > **Oxygen XML Editor plugin**. You can use the same action to unlock the license. Note that your system administrator also has the ability to unlock your license.

To release a floating license on demand, follow these steps:

1. Open the **Preferences** dialog box and click **Register**.
   The license registration dialog box is displayed.
2. The license key field should be empty (this is normal). If it is not empty, delete any text in the field.
3. Make sure the **Use a license key** option is selected.
4. Click **OK**.
   A dialog box is displayed asking if you want to reset your license key.
5. Select between:
   - **Use the last one** - Falls back to your previous license key. Use this option if you want to release a floating license and revert to a *Named User* license.
   - **Reset** - Removes your license key from your user account on the current computer.

   The **Reset** button erases all the licensing information. To complete the reset operation, close and restart Oxygen XML Editor plugin.

Reserving a Floating License

There are instances where you might want to reserve or lock a floating license. For example, you could lock a floating license if you want to use your floating license offline while traveling.

To reserve/lock a floating license, follow these steps:

1. Select **Lock floating license** from the **Preferences** dialog box (go to **Window** (**Eclipse** on Mac OSX) and choose **Preferences** > **Oxygen XML Editor plugin**.
2. Click **OK**.
   Your floating license is now locked. You can use the same action to unlock the license or you can contact your system administrator to unlock it.

Transferring a License Key

If you want to transfer your Oxygen XML Editor plugin license key to another computer (for example, if you are disposing of your old computer or transferring it to another person), you must first unregister your license. You can then register your license on the new computer in the normal way.

To transfer a license, follow this procedure:

1. Open the **Preferences** dialog box and click **Register**.
   The license registration dialog box is displayed.
2. The license key field should be empty (this is normal). If it is not empty, delete any text in the field.

3. Make sure the **Use a license key** option is selected.
4. Click **OK**.
   A dialog box is displayed asking if you want to reset your license key.
5. Select between:
   - **Use the last one** - Falls back to your previous license key, if applicable.
   - **Reset** - Removes your license key from your user account on the current computer.

   The **Reset** button erases all the licensing information. To complete the reset operation, close and restart Oxygen XML Editor plugin.

Floating License Servers

Installing a License Server to Manage Floating Licenses

If you are using floating licenses for Oxygen XML Editor plugin, you must set up an Oxygen XML Editor plugin floating license server. A floating license server can be installed as one of the following:

- An HTTP server. This is the recommended method.
- A TCP server (deprecated).

Note: Oxygen XML Editor plugin version 17 or higher requires a license server version 17 or higher. License servers version 17 or higher can be used with any version of a floating license key.

Activating Floating License Keys

To help you comply with the Oxygen XML Editor plugin EULA (terms of licensing), all floating licenses require activation. This means that the license key will be locked to a particular license server deployment and no multiple uses of the same license key are possible.

During the activation process, a code that uniquely identifies your license server deployment is sent to the Oxygen XML Editor plugin servers, which in turn will sign the license key.

Split or Combine License Keys to Work with Your License Servers

A license server can only manage one license key (which can cover any number of floating licenses). If you have multiple license keys for the same Oxygen XML Editor plugin version and you want to have all of them managed by the same server, or if you have a multiple-user floating license and you want to split it between two or more license servers, please contact our support team and ask for a new license key.

Setting up an HTTP Floating License Server

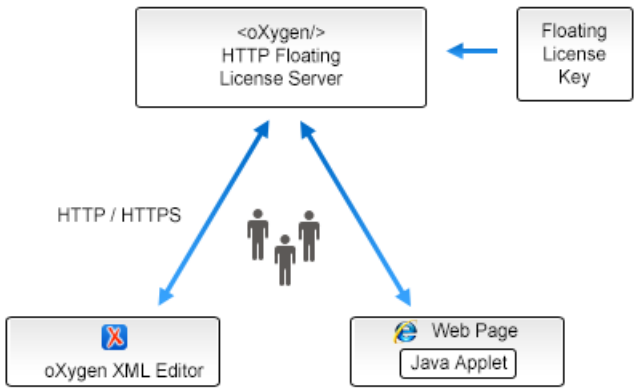


Figure 9: Floating License Server (HTTP Server)

The Oxygen XML Editor plugin license server is available in several distributions, tailored for covering a variety of deployment configurations:

- **Windows installer** - Easy-to-use Windows installation wizard. Requires elevated permissions to run it.
- **All-platform distribution** - Script-based deployment that does not require elevated permissions to run it. Provides scripts for Windows, Mac, and Linux.
- **Web Archive (WAR) distribution** - Provides more flexibility in your deployment configuration, but it requires an existing HTTP server (such as Apache Tomcat).

Installation Steps for the HTTP License Server Installer Distribution for Windows

1. Download the HTTP license server installer from the Oxygen XML Editor plugin website.
2. Run the installer and follow the on-screen instructions.
3. You need to configure two sets of credentials:
   a. **Administrator credentials** - used for accessing the Oxygen XML Editor plugin license server administrative interface. Optionally you can choose to change the standard 8080 port.
   b. **Standard user credentials** - used by an Oxygen XML Editor plugin application to connect to the license server.
4. Optionally you can choose to install the server as a Windows service. In this case, you can choose the name of the Windows service.

Installation Steps for the HTTP License Server All-Platform Distribution

1. Download the HTTP license server all-platform archive from the Oxygen XML Editor plugin website.
2. Unpack the archive.
3. Run the license server scripts suitable for your operating system (`licenseServer.bat` for Windows or `licenseServer.sh` for Linux and Mac).

   Note: To specify a different port (other than the default 8080), you can pass the new port number as an argument to the scripts (for example, `licenseServer.bat 8082`).
4. On the first run, you will be prompted to set two sets of credentials:
   a. **Administrator credentials** - used for accessing the Oxygen XML Editor plugin license server administrative interface.
   b. **Standard user credentials** - used by an Oxygen XML Editor plugin application to connect to the license server.

Installation Steps for the HTTP License Server WAR Distribution

1. Make sure that Apache Tomcat 5.5 or higher is running on the machine you have selected to be the license server. To get it, go to http://tomcat.apache.org.
2. Download the HTTP license server **Web ARchive** (**.war**) from the Oxygen XML Editor plugin website.
3. Configure two Tomcat users:
   a. One user with the role *user*, used by an Oxygen XML Editor plugin application to connect to the license server. In the subsequent example, this user name is **John**.
   b. Another user with the roles *admin* and *manager-gui*, used for accessing the Oxygen XML Editor plugin license server administrative interface and the Tomcat management interface. In the subsequent example, this user name is **Mary**.

   A typical way to achieve this is to edit the `tomcat-users.xml` file from your Tomcat installation (if using a Tomcat **zip**/**tar.gz** distribution, by default this configuration file is found in the `/TomcatInstallFolder/conf/` directory). After adding the two users, the configuration file might look like this:

```
<tomcat-users xmlns="http://tomcat.apache.org/xml"
              xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
              xsi:schemaLocation="http://tomcat.apache.org/xml tomcat-users.xsd"
              version="1.0">
  <!-- ... other user and role definitions ... -->
  <role rolename="user"/>
  <role rolename="admin"/>
  <role rolename="manager-gui"/>
  <user username="John" password="user_pass" roles="user"/>
  <user username="Mary" password="admin_pass" roles="admin,manager-gui"/>
```

```
</tomcat-users>
```

4. Go to the Tomcat Web Application Manager page and log-in with the user you configured with the *manager-gui* role (**Mary** in the example above). In the **WAR file to deploy** section, choose the WAR file and click the **Deploy** button. The `oXygenLicenseServlet` application is now up and running, but the license key is not yet registered.
5. Go to the *Oxygen* license server administration page by clicking the `oXygenLicenseServlet` link in the manager page. You will need to authenticate with the user configured with the `admin` role (Mary in our example).
6. Activate the floating license key. This process involves binding your license key to your license server deployment. Once the process is completed you cannot activate the floating license with another license server. Follow these steps to activate the license:
   a. Access the HTTP license server by following the link provided by the Tomcat Web Application Manager page. If prompted for authentication, use the credentials configured for the *admin* or *manager* users.

      Result: A page is displayed that prompts for a license key.
   b. Paste your floating license key into the form and press **Submit**. The browser used in the activation process needs to have Internet access.

      Result: You will be redirected to an online form hosted on the Oxygen XML Editor plugin website. This form is pre-filled with an activation code that uniquely identifies your license server deployment, and your license key.

      Note: If, for some reason, your browser does not take you to this activation form, refer to the Manual Activation Procedure.
   c. Press **Activate**.

      If the activation process is successfully completed, your license server is running. Follow the on-screen instructions to configure the Oxygen XML Editor plugin client applications.
7. By default, the license server logs its activity in the `TomcatInstallDir/logs/oxygenLicenseServlet.log` file. To change the log file location, edit the `log4j.appender.R2.File` property from the `TomcatInstallDir/webapps/oXygenLicenseServlet/WEB-INF/lib/log4j.properties` configuration file.

Manual License Activation Procedure

1. Access the HTTP license server by following the link provided by the Tomcat Web Application Manager page. You will be taken to the license registration page.
2. Copy the license server activation code.
3. Go to the activation page at `http://www.oxygenxml.com/activation/`.
4. Paste the license server activation code and floating license key in the displayed form, then click **Activate**.
5. The activated license key is displayed on-screen. Copy the activated license key and paste it in the license registration page of the HTTP server.

Automatic Subscription Renewal

If the HTTP license server is configured with a subscription license, then the license server will automatically check to see if a new subscription license was purchased and will automatically download and install it for you.

Important: This automatic checking procedure implies a connection to a web service located at `oxygenxml.com`. You can deactivate this automatic behavior by deselecting the **Automatically check for subscription renewal** option from the main management page of the license server.

If the automatic renewal process fails, you can try either of the following possible solutions:

- If your server uses a proxy to connect to the Internet, go to the main management page of the license server and configure the proxy settings by clicking the **Proxy settings** link in the **Management tasks** section.
- Manually replace the floating license key.

Floating License Server Management and Statistics Pages

A system administrator can manage and access information about the floating license server at: `http://hostName:port/oXygenLicenseServlet`.

This page provides access to several statistics reports and management tasks. It also shows the current status of the server and provides additional instructions for using the license server with Oxygen XML Editor plugin.

This page includes the following links for accessing statistics or managing tasks:

- **Current Allocated Licenses** - Opens the Allocated License Report page.
- **Usage Statistics** - Opens the Floating License Usage Statistics page.
- **View License Key** - Use this link to view details about the license key.
- **Replace License Key** - Use this link if you need to replace a license key.
- **Configuration** - Opens a page where you can configure notification settings and specify whether or not users are allowed to lock licenses. This page can be used for setting up the mail server used for sending rejection emails.

Allocated License Report Page

This report page provides a system administrator the ability to revoke or unlock current running instances of licenses and includes the following information:

- **License load** - A graphical indicator that shows how many licenses are available.
- **Floating license server status** - General information about the license server status, such as start time, license counts, rejected and acknowledged requests, average usage time, license refresh and timeout intervals, location of the license key, and the server version.
- **Current running instances** - Lists all currently acknowledged users, including user name, date and time when the license was granted, IP and MAC address of the computer where Oxygen XML Editor plugin runs, and lock status.
  - **Revoke** - A system administrator can click on the **Revoke** icon next to a user name to release that particular license and return it to the pool.
  - **Unlock** - If a user has locked their floating license, the system administrator can also unlock it from this page.

Note: This report is also available in XML format at: `http://hostName:port/oXygenLicenseServlet/license-servlet/report-xml`.

Floating License Usage Statistics Page

This report page provides some usage statistics for the floating licenses. It is helpful for determining the number of licenses that are needed and monitoring times when licenses are consumed. It includes the following information:

- **Maximum number of concurrent licenses** - Shows the maximum number of floating licenses that can be consumed at any given time.
- **Concurrent license consumption per day** - A chart that shows the peak number of licenses that were consumed and the total number of users that were rejected, on a daily basis. This chart can be used to detect the amount of concurrent licenses that are needed to avoid having rejected users.

  Tip: You can click on any bar to see the license consumption per hour for that particular day.

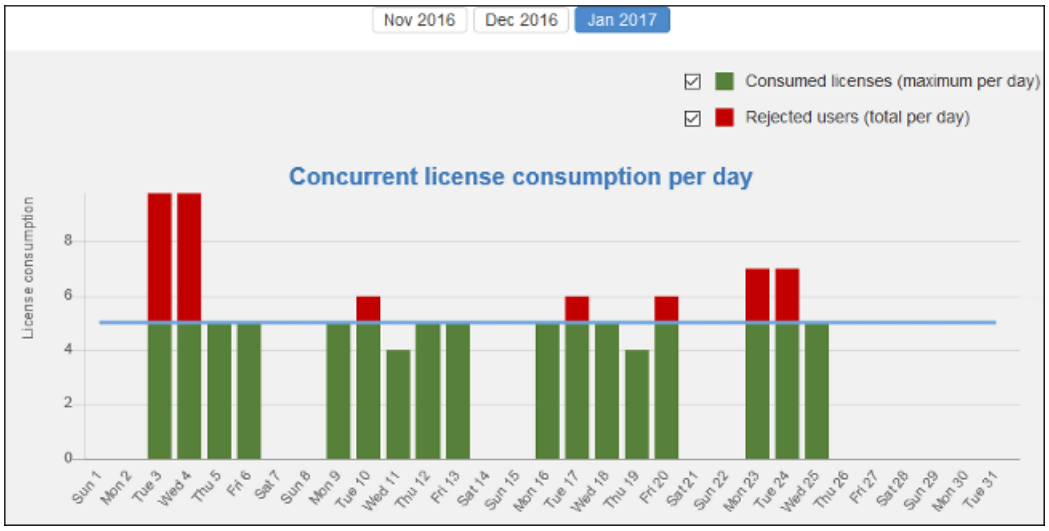


Figure 10: Concurrent License Consumption per Day Chart

- **Concurrent license consumption per hour** - A chart that shows the peak number of licenses that were consumed per hour throughout that particular month. This is useful for identifying the time of day when the most licenses were consumed.

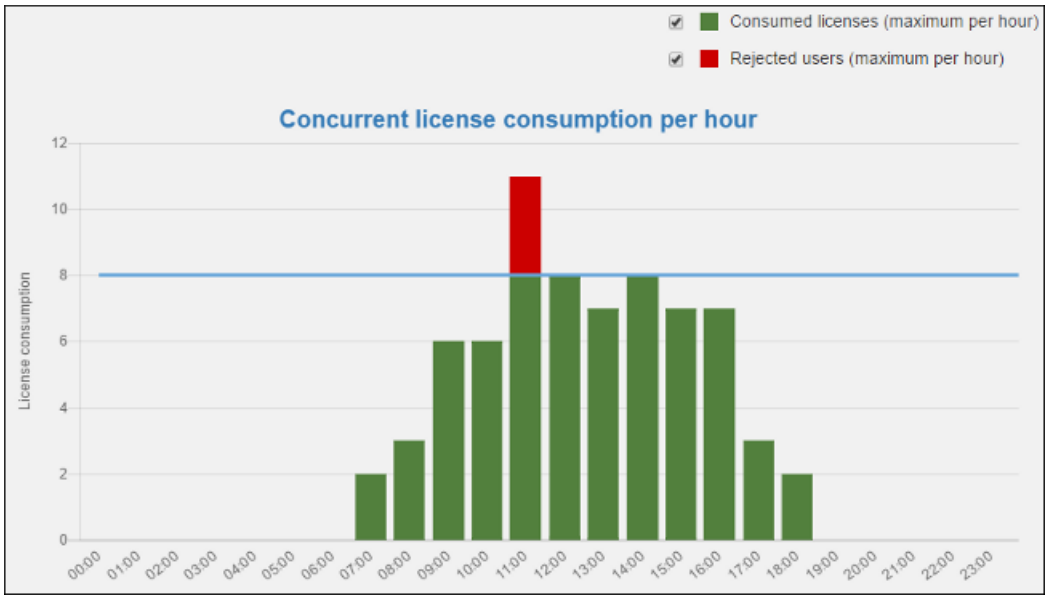


Figure 11: Concurrent License Consumption per Hour Chart

Replacing a Floating License Key in an HTTP Floating License Server

The following procedure assumes that your Oxygen XML Editor plugin HTTP floating license server contains a previously activated license key and provides instructions for replacing it with another one. The goal of the procedure is to allow you to activate and configure the new license key without any downtime.

This is useful if, for instance, you want to upgrade your existing license to the latest version or if you receive a new license key that accommodates a different number of users.

To replace a floating license key that is activated on your HTTP floating license server with a new one, follow these steps:

1. Access the license server by following the link provided by the Tomcat Web Application Manager page.
2. Click the **Replace license key** link. This will open a page that contains details about the license currently in use.
3. Click the **Yes** button to begin the replacement procedure.

4. Paste the new floating license key in the displayed form, then click **Submit**. The browser used in the process needs to have Internet access.

   You will be redirected to an online form hosted on the Oxygen XML Editor plugin website. This form is pre-filled with an activation code that uniquely identifies your license server deployment and your license key.

   Note: If for some reason your browser does not take you to this activation form, refer to the Manual Activation Procedure.
5. Press **Activate**.

   If the activation process is completed successfully, your license server is now running using the new license key. You can click **View license key** to inspect the key currently used by the license server.

Upgrading Your HTTP Floating License Server

The goal of the following procedure is to help you minimize the downtime when you upgrade the Oxygen XML Editor plugin HTTP floating license server to its latest version.

Follow this procedure:

1. Access the license server by following the link provided by the Tomcat Web Application Manager page. If prompted for authentication, use the **admin** or **manager** credentials.
2. Click the **View license key** link and copy the displayed license key to a file for later use.
3. Go to the Tomcat Web Application Manager page, log in with the user you configured with the **manager** role, and *Undeploy* the floating license server.
4. Go to Oxygen XML Editor plugin website and download the HTTP license server.
5. Deploy the downloaded license server.
6. Access the license server by following the link provided by the Tomcat Web Application Manager page. If prompted for authentication, use the credentials configured for the **admin** or **manager** users.
7. Paste the license key into the form and register it.

Registering a Floating License for Multiple Users

If you are an administrator registering floating licenses for multiple users, you can avoid having to open Oxygen XML Editor plugin on each machine and configuring the registration details by using the following procedure:

1. Reset the registration details:
   a. Select **Register** from the **Help** menu.
   b. Click **OK** without entering any information in this dialog box.
   c. Click **Reset** and restart the application.
2. Register the license using one of the floating license registration procedures.
3. Copy the `license.xml` file from the Oxygen XML Editor plugin preferences directory to the `lib` sub-folder of the installation folder on each installation to be registered.

Setting up a TCP Floating License Server Using a 32-bit Windows Installer

This section contains information about setting up the TCP floating license server as a Windows process.

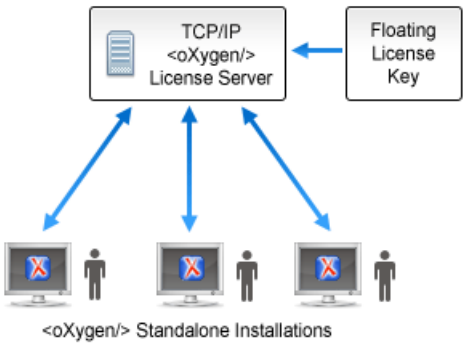


Figure 12: TCP Floating License Server (Process in Windows)

Installation Steps

1. Download the license server installation kit for Windows from the Oxygen XML Editor plugin website.
2. Run the downloaded installer and follow the on-screen instructions.

   By default, the installer installs the license server as a Windows service. Optionally, you have the ability to start the Windows service automatically at Windows startup or create shortcuts on the **Start** menu for starting and stopping the Windows service manually. If you want to manually install, start, stop, or uninstall the server as a Windows service, run the following scripts from a command line as an Administrator:

   - `installWindowsService.bat [serviceName]` - Installs the server as a Windows service with the name *serviceName*. The parameters for the license key folder and the server port can be set in the `oXygenLicenseServer.vmoptions` file.
   - `startWindowsService.bat [serviceName]` - Starts the Windows service.
   - `stopWindowsService.bat [serviceName]` - Stops the Windows service.
   - `uninstallWindowsService.bat [serviceName]` - Uninstalls the Windows service.

   Note: If you do not provide the `serviceName` argument, the default name *oXygenLicenseServer* is used.

   If the license server is installed as a Windows service, the output and error messages are automatically redirected to the following log files that are created in the install folder:

   - `outLicenseServer.log` - Standard output stream of the server.
   - `errLicenseServer.log` - Standard error stream of the server.
3. Manually add the oXygenLicenseServer.exe file in the Windows Firewall list of exceptions. Go to **Control Panel** > **System and Security** > **Windows Firewall** > **Allow a program or feature through Windows Firewall** > **Allow another program** and browse for oXygenLicenseServer.exe from the Oxygen XML Editor plugin License Server installation folder.
4. Floating licenses require activation prior to use. More details are available either on-screen (if the license server is started in a command line interface) or in the `outLicenseServer.log` log file.

   Note: A license server can only manage one license key (which can cover any number of floating licenses). If you have multiple license keys for the same Oxygen XML Editor plugin version and you want to have all of them managed by the same server, or if you have a multiple-user floating license and you want to split it between two or more license servers, please contact our support team and ask for a new license key.

Replacing a Floating License Key in a TCP Floating License Server

The following procedure assumes that your Oxygen XML Editor plugin TCP floating license server contains a previously activated license key and provides instructions for replacing the activated license key with another one. The goal of the procedure is to minimize the license server downtime during the activation step of the new license key.

This is useful if, for instance, you want to upgrade your existing license to the latest version or if you receive a new license key that accommodates a different number of users.

To replace a floating license key that is activated on your floating license server with a new one, follow these steps:

1. Stop the service that runs the floating license server.
2. Locate the folder that holds the previous activated license key (by default, it is named `license` and it is located in the installation directory of the license server).
3. Remove the `license.txt` file and try to restart the server. Since the file that stores the license key is missing, the server will fail to start.
4. Find the license activation procedure in the on-screen instructions (if the license server is started in a **command line interface**) or in the `outLicenseServer.log` log file.
5. After you copy the activated license key in the `license.txt` file, restart the license server.

Upgrading Your TCP Floating License Server

The goal of the following procedure is to help you minimize the downtime generated when you upgrade the Oxygen XML Editor plugin floating license server to its newest version.

Follow this procedure:

1. Go to the Oxygen XML Editor plugin website and download the latest floating license server.
2. Run the installation kit.
3. Leave the default **Update the existing installation** option selected. This will ensure that some options set in the previous version (namely the installation folder, port number, and the floating license key in use) of the license server will be preserved.
4. Follow the on-screen instructions to complete the installation process.

Setting up a TCP Floating License Server Using All-Platforms Distribution

This installation method can be used for running the TCP license server on any platform where a Java virtual machine can run (OS X, Linux/Unix, Windows).

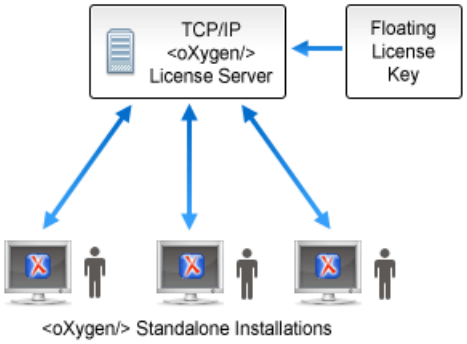


Figure 13: TCP Floating License Server (All-Platforms Distribution)

Installation Steps

1. Ensure that a Java runtime version 6 or later is installed on the server machine.
2. Download the license server installation kit for your platform from the Oxygen XML Editor plugin website.
3. Unzip the installation kit into a new folder.
4. Start the server using the startup script from a command line console.

   The startup script is called `licenseServer.sh` for OS X and Unix/Linux or `licenseServer.bat` for Windows. The following parameters are accepted:

   - `licenseDir` - The path of the directory where the license files will be placed. The default value is `license`.
   - `port` - The TCP port number used to communicate with Oxygen XML Editor plugin instances. The default value is **12346**.

   Example: The following is an example of the command line for starting the license server on Unix/Linux and OS X:

   ```
   sh licenseServer.sh myLicenseDir 54321
   ```

5. Floating licenses require activation prior to use. Follow the on-screen instruction to complete the license activation process.

Replacing a Floating License Key in a TCP Floating License Server

The following procedure assumes that your Oxygen XML Editor plugin TCP floating license server contains a previously activated license key and provides instructions for replacing the activated license key with another one. The goal of the procedure is to minimize the HTTP license server downtime during the activation step of the new license key.

This is useful if, for instance, you want to upgrade your existing license to the latest version or if you receive a new license key that accommodates a different number of users.

To replace a floating license key that is activated on your floating license server with a new one, follow these steps:

1. Stop the process that runs the floating license server.
2. Locate the folder that holds the previous activated license key (by default, it is named `license` and it is located in the installation directory of the license server).
3. Remove the `license.txt` file and try to restart the server. Since the file that stores the license key is missing, the server will fail to start.
4. Find the license activation procedure in the on-screen instructions.
5. After you copy the activated license key in the `license.txt` file, restart the license server.

Upgrading Your TCP Floating License Server

The goal of the following procedure is to help you minimize the downtime generated when you upgrade the Oxygen XML Editor plugin TCP floating license server to its newest version.

Follow this procedure:

1. Stop the current license server process.
2. Locate and open the floating server startup script. It should look like this:

```
sh licenseServer.sh pathToLicenseDir 54321
```

3. Make a note of the path to the license directory (in our example is `pathToLicenseDir`) and the port number (in our example is `54321`).
4. Go to the license directory and copy the license key file (`license.txt`) for later use.
5. Go to the Oxygen XML Editor plugin website and download the all-platforms floating license server installation kit.
6. Unzip the archive and overwrite the content of your current floating license server installation.
7. Copy the license key file (`license.txt`) saved in step 4 to `license` directory of the floating license server installation.
8. Edit the floating server startup script and configure with the info you made note of in step 3.
9. Start the floating license server process.

Common Problems: Floating License Server Errors

This section includes some common problems that may appear when setting up a floating license server.

Machine Signature Mismatch Error

Problem

During the floating license activation process, the license key becomes bound to a particular license server deployment. This means that a code that uniquely identifies your license server deployment (called *Machine Signature*) is sent to the Oxygen XML Editor plugin servers, which in turn will sign the license key. The *Machine Signature* is computed from the list of network interfaces of the machine where you deployed the floating license.

Causes

When starting the license server, if you receive an error stating that your server's Machine Signature does not match the one found in your license key, there are several possible causes:

1. You have moved your floating license key to a new machine that hosts your license server.
2. You have changed, added, or activated a new network interface in the machine that hosts your license server.

   Note: A specific example of when this could happen, is if you activate/deactivate the Bluetooth module or the WiFi module.

Solutions

- Revert back to your previous configuration.
- If this is not possible, contact our support team.

Windows Service Reports Incorrect Function Error When Starting (TCP Server)

Problem

My TCP floating license server reports an "Incorrect Function" error message when starting the Windows service.

Cause

This usually appears because the Windows service launcher cannot locate a Java virtual machine on your system.

Solution

Make sure that you have installed a 32-bit Java SE from Oracle (or Sun) on the system: http://www.oracle.com/technetwork/java/javase/downloads/index.html.

Windows Service Reports Process Terminated Unexpectedly Error (TCP Server)

Problem

My TCP floating license server reports a "Process Terminated Unexpectedly" error message for the Windows service.

Cause

This error message appears if the Windows service launcher quits immediately after being started. This problem usually happens because the license key has not been correctly deployed (`license.txt` file in the license folder).

Solution

Re-deploy your license key. For more information, see the Setting up a Floating License Server section.

Upgrading

From time to time, upgrades and patch versions of Oxygen XML Editor plugin are released to provide enhancements that fix problems and add new features.

Upgrading Oxygen XML Editor plugin on Windows/Linux

What is Preserved During an Upgrade?

When you install a new version of Oxygen XML Editor plugin, some data is preserved and some is overwritten. If there is a previous version of Oxygen XML Editor plugin already installed on your computer, it can coexist with the new one, which means you do not have to uninstall it.

If you install over a previously installed version:

- All the files from its install directory will be removed, including any modification in *framework* files, XSLT stylesheets, *XML Catalogs*, and templates.
- All global user preferences are preserved in the new version.
- All project preferences will be preserved in their project files.
- Any custom *frameworks* that were stored outside the installation directory (as configured in **Document type associations** > **Locations**) will be preserved and will be found by the new installation.

If you install in a new directory:

- All the files from the old install directory will be preserved, including any modification in *framework* files, XSLT stylesheets, *XML Catalogs*, and templates. However, these modifications will not be automatically imported into the new installation.
- All global user preferences are preserved in the new version.

- All project preferences will be preserved in their project files.
- Any custom *frameworks* that were stored outside the installation directory (as configured in **Document type associations** > **Locations**) will be preserved and will be found by the new installation.

How to Upgrade Oxygen XML Editor plugin on Windows or Linux

1. Uninstall the current version of Oxygen XML Editor plugin.
2. Download and install the new version according to the instructions for your platform and the type of installer you selected.
3. Restart Oxygen XML Editor plugin.
4. If you are upgrading from a minor version to a major version (for example, from 16.1 to 17.0) and you did not purchase a Maintenance Pack that covers the new major version, you will need to enter a new license for the new version into the registration dialog box that is displayed when the plugin is started.

Upgrading Oxygen XML Editor plugin on OS X

What is Preserved During an Upgrade?

When you install a new version of Oxygen XML Editor plugin, first you need to remove or rename the old installation directory. By renaming the directory, it can coexist with the new installation and the following data will be preserved:

- All the files from the old install directory will be preserved, including any modification in *framework* files, XSLT stylesheets, *XML Catalogs*, and templates. However, these modifications will not be automatically imported into the new installation.
- All global user preferences are preserved in the new version.
- All project preferences will be preserved in their project files.
- Any custom *frameworks* that were stored outside the installation directory (as configured in **Document type associations** > **Locations**) will be preserved and will be found by the new installation.

How to Upgrade Oxygen XML Editor plugin on OS X

1. Uninstall the current version of Oxygen XML Editor plugin or rename the installation directory (for example, `Oxygen XML Editor.old`).
2. Download and install the new version according to the instructions for your platform and the type of installer you selected.
3. Restart Oxygen XML Editor plugin.
4. If you are upgrading from a minor version to a major version (for example, from 16.1 to 17.0) and you did not purchase a Maintenance Pack that covers the new major version, you will need to enter a new license for the new version into the registration dialog box that is displayed when the plugin is started.

Uninstalling

How to Uninstall Oxygen XML Editor plugin

CAUTION: The following procedure will remove Oxygen XML Editor plugin from your system. It will not remove the Eclipse platform. If you want to uninstall Eclipse, refer to its uninstall instructions.

1. Choose the menu option **Help** > **About** > **Installation Details**.
2. Select Oxygen XML Editor plugin from the list of plugins.
3. Choose **Uninstall**.
4. Accept the Eclipse restart.
5. If you want to remove the user preferences:
   - **Windows** - Remove the directory: `%APPDATA%\com.oxygenxml` (usually `%APPDATA%` has the value: `[user-home-dir]\Application Data`). Note that this directory is hidden.
   - **OS X** - Remove the directory: `Library/Preferences/com.oxygenxml` of the user home folder.

- **On Linux**, remove the directory: `.com.oxygenxml` from the user home directory.

Configuring Oxygen XML Editor plugin

4

Topics:

- Preferences
- Configuring Options
- Associating a File Extension with Oxygen XML Editor plugin
- Import/Export Transformation or Validation Scenarios
- Editor Variables
- Custom System Properties
- Localizing of the User Interface

This chapter presents all the user preferences and options that allow you to configure various features and aspects of the application itself. It also includes information about storing and sharing options, importing and exporting options or scenarios, customizing system properties, setting startup parameters, and the editor variables that are available for customizing user-defined commands..

Preferences

You can configure Oxygen XML Editor plugin options using the **Preferences** dialog box.

To open the preferences dialog box, go to go to **Window** (**Eclipse** on Mac OSX) and choose **Preferences** > **Oxygen XML Editor plugin**.

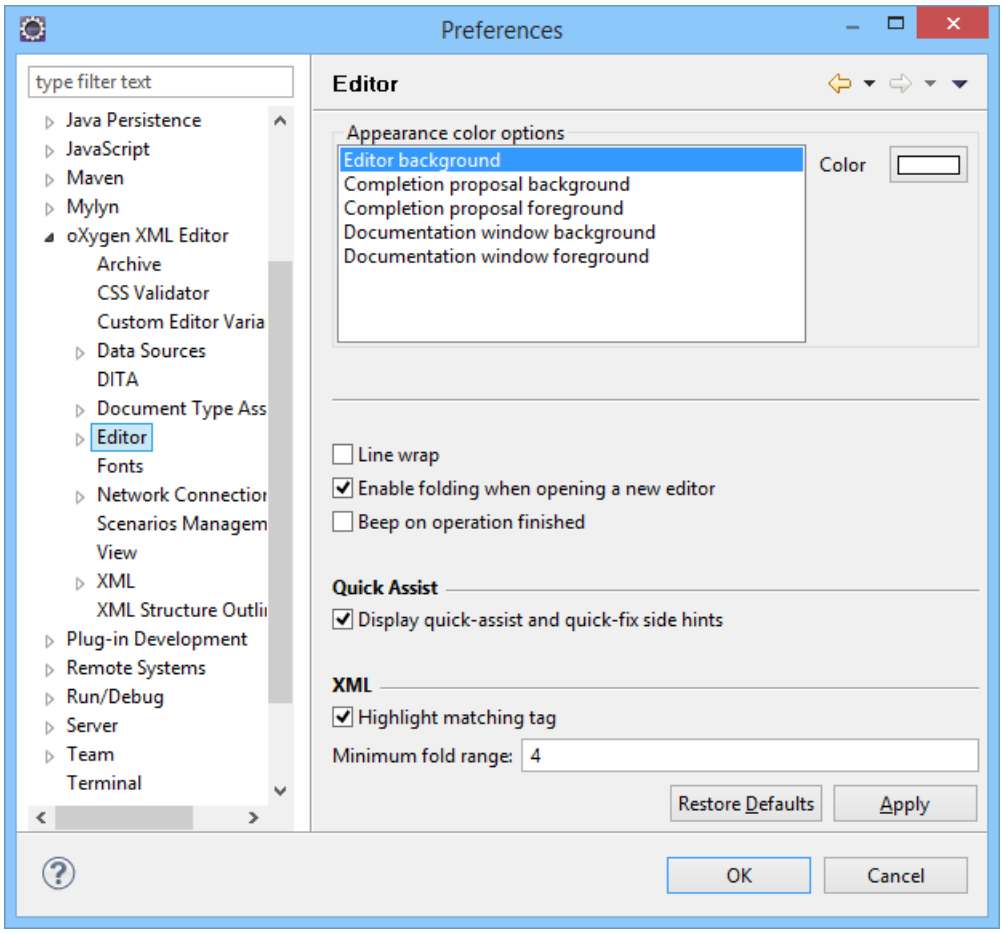


Figure 14: Eclipse Preferences Dialog Box

Press or **F1** for help on any preferences page.

You can restore options to their default values by pressing the **Restore Defaults** button, available in each preferences page.

A filtered version of the **Preferences** dialog box is available by selecting **Options** from the contextual menu in the editor. It displays an appropriate preferences page according to the context where the action was invoked and filters the tree on the left according to where the preference page is located in the hierarchy.

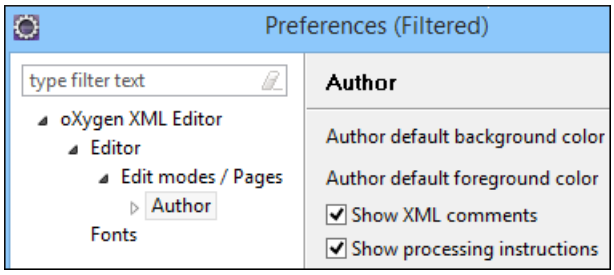


Figure 15: Eclipse Preferences Dialog Box - Filtered Version

Preferences Directory Location

A variety of resources (such as global options, license information, and history files) are stored in a preferences directory (`com.oxygenxml`) that is in the following locations:

- **Windows (Vista, 7, 8, 10)** - `[user_home_directory]\AppData\Roaming\com.oxygenxml`
- **Windows XP** - `[user_home_directory]\Application Data\com.oxygenxml`
- **Mac OS X** - `[user_home_directory]/Library/Preferences/com.oxygenxml`

- **Linux/Unix** - `[user_home_directory]/.com.oxygenxml`

Oxygen XML Editor plugin License

To configure the license options, open the **Preferences** dialog box . This preferences page presents the details of the license key that enables the Oxygen XML Editor plugin plugin, such as registration name, category and number of purchased licenses, encrypted signature of the license key. Clicking the **Register** button opens the Oxygen XML Editor plugin **License** dialog box that allows you to insert a new license key.

Archive Preferences

To configure *Archive* options, open the **Preferences** dialog box and go to **Archive**.

The following options are available in the **Archive** preferences page:

Archive backup options

Controls if the application makes backup copies of the modified archives. The following options are available:

- **Always create backup copies of modified archives** - When you modify an archive, its content is backed up.
- **Never create backup copies of modified archives** - No backup copy is created.
- **Ask for each archive once per session** - Once per application session for each modified archive, user confirmation is required to create the backup. This is the default setting.

  Note: Backup files have the name `originalArchiveFileName.bak` and are located in the same folder as the original archive.

Show archive backup dialog box

Select this option if you want to be notified for backup when modifying in archives. The last backup option you chose will always be used as the default one.

Archive types

This table contains all known archive extensions mapped to known archive formats. Each row maps a list of extensions to an archive type supported in Oxygen XML Editor plugin. You can use the **Edit** button at the bottom of the table to edit an existing mapping or the **New** button to create a new one and associate your own list of extensions to an archive format.

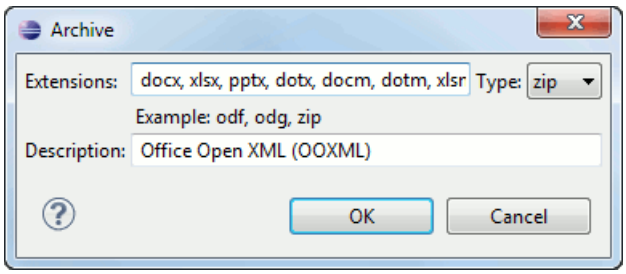


Figure 16: Edit Archive Extension Mappings

Important: You have to restart Oxygen XML Editor plugin after removing an extension from the table for that extension to not be recognized as an archive extension.

Store Unicode file names in Zip archives

Use this option when you archive files that contain international (non-English) characters in file names or file comments. If this option is selected and an archive is modified in any way, UTF-8 characters are used in the names of all files in the archive.

CSS Validator Preferences

To configure the **CSS Validator** preferences, open the **Preferences** dialog box and go to **CSS Validator**.

You can configure the following options for the built-in **CSS Validator** of Oxygen XML Editor plugin:

- **Profile** - Selects one of the available validation profiles: **CSS 1**, **CSS 2**, **CSS 2.1**, **CSS 3**, **CSS 3 with Oxygen extensions**, **SVG**, **SVG Basic**, **SVG Tiny**, **Mobile**, **TV Profile**, **ATSC TV Profile**. The **CSS 3 with Oxygen extensions** profile includes all the CSS 3 standard properties plus the CSS extensions specific for Oxygen that can be used in Author mode. That means all Oxygen specific extensions are accepted in a CSS stylesheet by the built-in CSS validator when this profile is selected.
- **Media type** - Selects one of the available mediums: **all**, **aural**, **braille**, **embossed**, **handheld**, **print**, **projection**, **screen**, **tty**, **tv**, **presentation**, **oxygen**.
- **Warning level** - Sets the minimum severity level for reported validation warnings. Can be one of: **All**, **Normal**, **Most Important**, **No Warnings**.
- **Ignore properties** - You can type comma separated patterns that match the names of CSS properties that will be ignored at validation. As wildcards you can use:
  - `*` to match any string.
  - **?** to match any character.
- **Recognize browser CSS extensions (also applies to content completion)** - If selected, Oxygen XML Editor plugin recognizes (no validation is performed) browser-specific CSS properties. The *Content Completion Assistant* lists these properties at the end of its list, prefixed with the following particles:
  - `-moz-` for *Mozilla*.
  - `-ms-` for *Internet Explorer* or *Edge*.
  - `-o-` for *Opera*.
  - `-webkit-` for *Safari/Webkit*.

Custom Editor Variables Preferences

An editor variable is useful for making a transformation scenario, validation scenario, or other tool independent of its file path. An editor variable is specified as a parameter in a transformation scenario, validation scenario, or command line of an external tool. Such a variable is defined by a name, a string value, and a text description. A custom editor variable is defined by the user and can be used in the same expressions as the built-in editor variables.

Custom editor variables are created and configured in the **Custom Editor Variables** preferences page. To access this page, open the **Preferences** dialog box and go to **Custom Editor Variables**.

This preferences page displays a table of all the custom editor variables that have been defined. The table includes three columns for the editor variable **Name**, its **Value**, and its **Description**. The create a new variable, click the **New** button at the bottom of the table and define your custom editor variable in the subsequent dialog box. To edit an existing custom editor variable, click the **Edit** button and configure the variable in the subsequent dialog box. You can also use the **Delete** button to remove custom editor variables that are no longer needed.

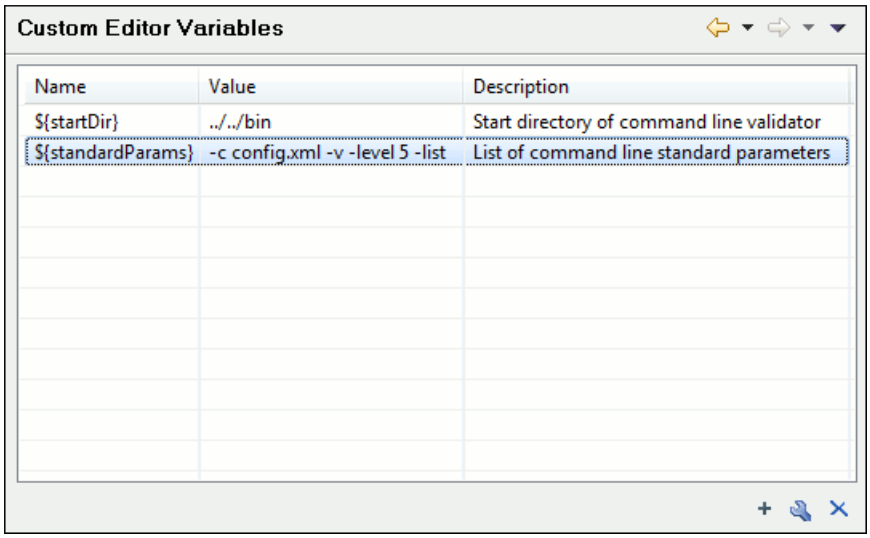


Figure 17: Custom Editor Variables Table

Data Sources Preferences

To configure the **Data Sources** preferences, open the **Preferences** dialog box and go to **Data Sources**. This preferences page allows you to configure data sources and connections to relational and native XML databases. For a list of drivers that are available for the major database servers, see Download Links for Database Drivers on page 44.

Connection Wizards Section

Create eXist-db XML connection

Click this link to open the dedicated **Create eXist-db XML connection** dialog box that provides a quick way to create an eXist connection.

Data Sources Section

This section allows you to add and configure data sources.

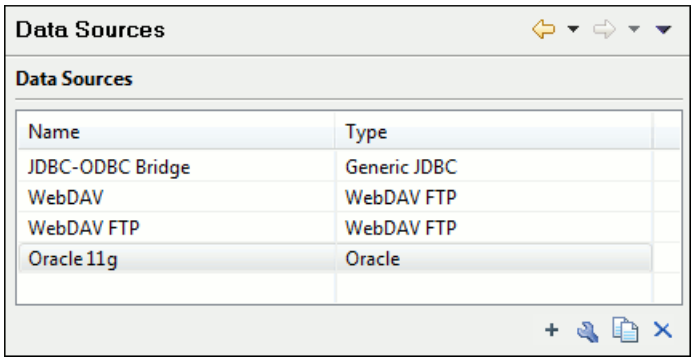


Figure 18: Data Sources Preferences Panel

The following buttons are available at the bottom of the **Data Sources** panel:

+ New

Opens the **Data Sources Drivers** dialog box that allows you to configure a new database driver.

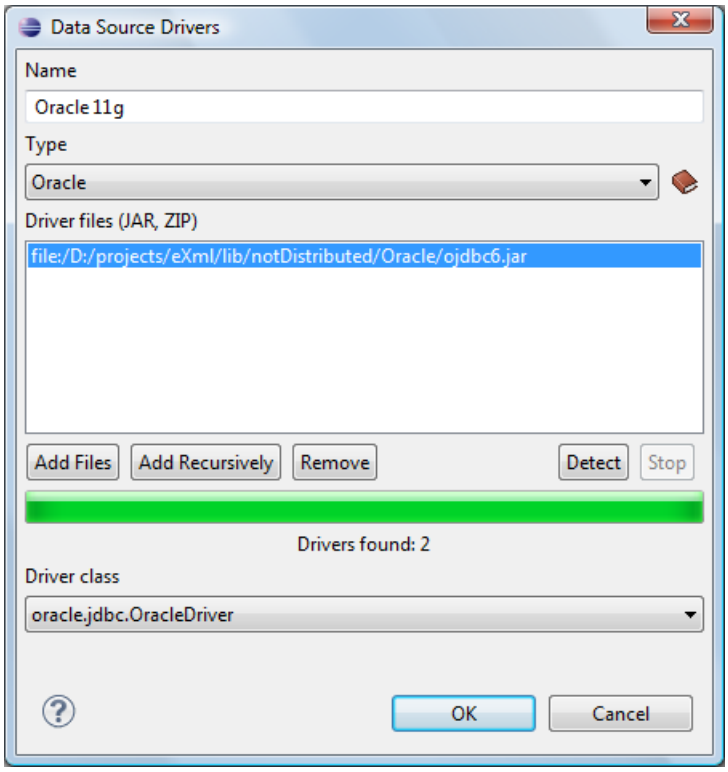


Figure 19: Data Sources Drivers Dialog Box

The following options are available in the **Data Source Drivers** dialog box:

- **Name** - The name of the new data source driver that will be used for creating connections to the database.
- **Type** - Selects the data source type from the supported driver types.
  - **Help button** - Opens the User Manual at the list of the sections where the configuration of supported data sources is explained and the URLs for downloading the database drivers are specified.
- **Driver files (JAR, ZIP)** - Lists download links for database drivers that are necessary for accessing databases in Oxygen XML Editor plugin.
- **Add Files** - Adds the driver class library.
- **Add Recursively** - Adds driver files recursively.
- **Remove** - Removes the selected driver class library from the list.
- **Detect** - Detects driver file candidates.
- **Stop** - Stops the detection of the driver candidates.
- **Driver class** - Specifies the driver class for the data source driver.

Edit

Opens the **Data Sources Drivers** dialog box for editing the selected driver. See above the specifications for the **Data Sources Drivers** dialog box. To edit a data source, there must be no connections using that data source driver.

Duplicate

Creates a copy of the selected data source.

Delete

Deletes the selected driver. To delete a data source, there must be no connections using that data source driver.

Connections Section

This section allows you to add and configure data source connections.

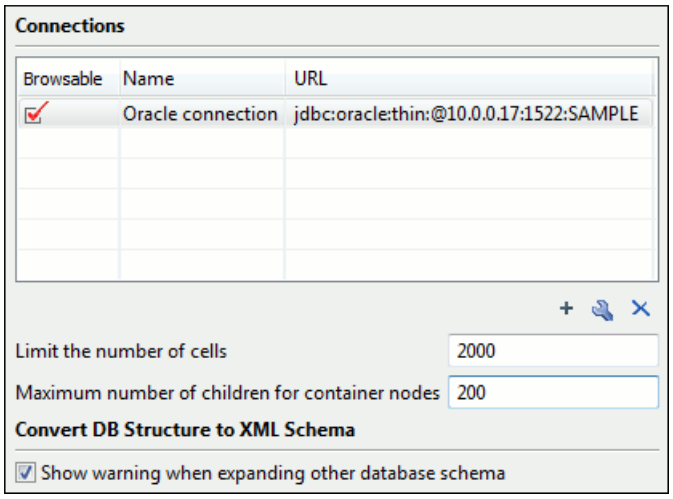


Figure 20: Connections Preferences Panel

The following buttons and options are available at the bottom of the **Connections** panel:

+ New

Opens the **Connection** dialog box that allows you to configure a new database connection.

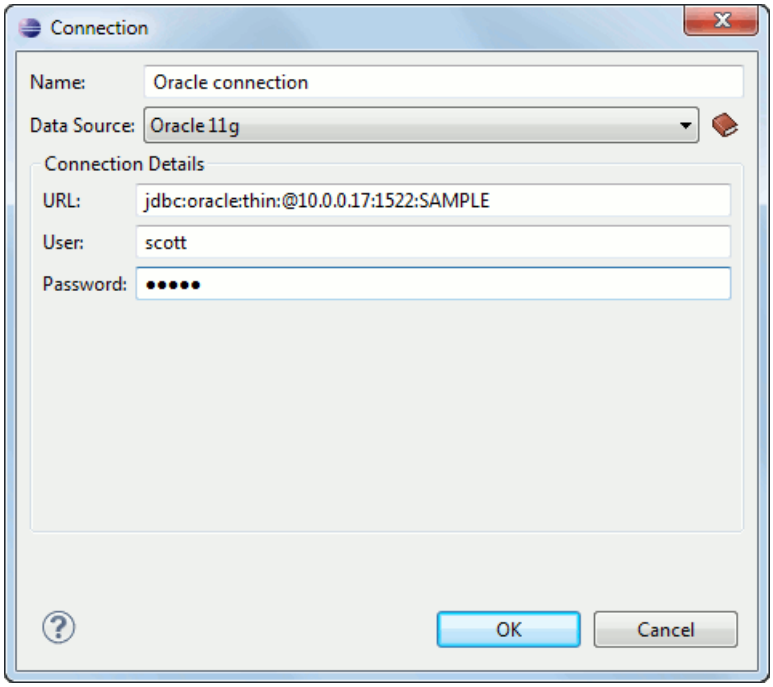


Figure 21: Connection Dialog Box

The following options are available in the **Connection** dialog box:

- **Name** - The name of the new connection that will be used in transformation scenarios and validation scenarios.
- **Data Source** - Allows selecting a data source defined in the **Data Source Drivers** dialog box.

Depending upon the selected data source, you can set some of the following parameters in the **Connection details** area:

- **URL** - The URL for connecting to the database server.
- **User** - The user name for connecting to the database server.
- **Password** - The password of the specified user name.
- **Host** - The host address of the server.

- **Port** - The port where the server accepts the connection.
- **XML DB URI** - The database URI.
- **Database** - The initial database name.
- **Collection** - One of the available collections for the specified data source.
- **Environment home directory** - Specifies the home directory (only for a Berkeley database).
- **Verbosity** - Sets the verbosity level for output messages (only for a Berkeley database).
- **Use a secure HTTPS connection (SSL)** - Allows you to establish a secure connection to an eXist database through the SSL protocol.

Edit

Opens the **Connection** dialog box, allowing you to edit the selected connection. See above the specifications for the **Connection** dialog box.

Duplicate

Creates a copy of the selected connection.

Delete

Deletes the selected connection.

Move Up

Moves the selected connection up one row in the list.

Move Down

Moves the selected connection down one row in the list.

Limit the number of cells

For performance issues, you can set the maximum number of cells that will be displayed in the **Table Explorer** view for a database table. Leave this field empty if you want the entire content of the table to be displayed. By default, this field is set to 2000. If a table that has more cells than the value set here is displayed in the **Table Explorer** view, a warning dialog box will inform you that the table is only partially shown.

Maximum number of children for container nodes

In Oracle XML, a container can hold millions of resources. If the node corresponding to such a container in the **Data Source Explorer** view would display all the contained resources at the same time, the performance of the view would be very slow. To prevent this, only a limited number of the contained resources is displayed as child nodes of the container node. You can navigate to other contained resources from the same container by using the *Up* and *Down* buttons in the **Data Source Explorer** view. This limited number is set in the field. The default value is 200 nodes.

Show warning when expanding other database schema

Controls if a warning message will be displayed when expanding another database schema and there are tables selected in the current expanded one. This applies to the **Select database table** dialog box in the **Import Database Data** wizard and the **Select database table** section of the **Convert DB Structure to XML Schema** dialog box.

Table Filters Preferences

The **Table Filters** preferences page allows you to choose the types of tables to be shown in the **Data Source Explorer** view. To open this preferences page, open the **Preferences** dialog box and go to **Data Sources** > **Table Filters**.

You can choose to display the following types of tables:

- **Alias**
- **Global Temporary**
- **Local Temporary**
- **Synonym**
- **System Table**
- **Table**
- **View**

Download Links for Database Drivers

For a list of major relational databases and the drivers that are available for them, see https://www.oxygenxml.com/database_drivers.html.

In addition, the following is a list of other popular databases along with instructions for getting the drivers that are necessary to access the databases in Oxygen XML Editor plugin:

- **Berkeley DB XML database** - Copy the *jar* files from the Berkeley database install directory into the Oxygen XML Editor plugin install directory as described in the procedure for configuring a Berkeley DB data source.
- **IBM DB2 Pure XML database** - Go to the IBM website and in the *DB2 Clients and Development Tools* category select the *DB2 Driver for JDBC and SQLJ* download link. Fill out the download form and download the zip file. Unzip the zip file and use the `db2jcc.jar` and `db2jcc_license_cu.jar` files in Oxygen XML Editor plugin for configuring a DB2 data source.
- **eXist database** - Copy the *jar* files from the eXist database install directory to the Oxygen XML Editor plugin install directory as described in the procedure for configuring an eXist data source.
- **MarkLogic database** - Download the MarkLogic driver from MarkLogic Community site.
- **Microsoft SQL Server 2005 / 2008 database** - Download the appropriate MS SQL JDBC driver from the Microsoft website. For SQL Server 2008 R2 and older go to http://www.microsoft.com/en-us/download/details.aspx?id=21599. For SQL Server 2012 and 2014 go to http://www.microsoft.com/en-us/download/details.aspx?id=11774.
- **Oracle 11g database** - Go to http://www.oracle.com/technetwork/database/enterprise-edition/jdbc-112010-090769.html and download the Oracle 11g JDBC driver called `ojdbc6.jar`.
- **PostgreSQL 8.3 database** - Go to http://jdbc.postgresql.org/download.html and download the PostgreSQL 8.3 JDBC3 driver.
- **Documentum xDB (X-Hive/DB) 10 XML database** - Copy the *jar* files from the Documentum xDB (X-Hive/DB) 10 database install directory to the Oxygen XML Editor plugin install directory as described in the procedure for configuring a Documentum xDB (X-Hive/DB) 10 data source.

DITA Preferences

To access the DITA Preferences page, open the **Preferences** dialog box and go to **DITA**. This preferences page includes the following sections and options:

DITA Open Toolkit section

This section allows you to specify the default directory of the DITA Open Toolkit distribution (bundled with the Oxygen XML Editor plugin installation) to be used for validating and publishing DITA content. You can select from the following:

Built-in DITA-OT 2.x (with support for DITA 1.3 and Lightweight DITA)

Starting with Oxygen XML Editor plugin 18.0, this is the default setting. All defined DITA transformation/validation scenarios will run with DITA-OT 2.5.4. This also gives you access to DITA 1.3 document templates. The default DITA OT 2.5.4 directory is: *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/DITA-OT2.x`.

Custom

Allows you to specify a custom directory for your DITA OT distribution.

Location

You can either provide a new file path for the specific DITA OT that you want to use or select a previously used one from the drop-down list. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Prefer navigation title for topicref rendering

If selected and there is a `navtitle` attribute set on a `topicref`, then the `navtitle` is used to render the title of the topic in the **DITA Maps Manager**.

Insert topic reference section

Allows you to specify that when inserting a topic reference (using the **Insert Reference** dialog box and **Edit Properties** dialog box), the values for certain attributes will always be automatically populated with a

detected value (based on the specifications), even if it is the same as the default value. You can choose to always populate the values for the following attributes:

- **Format** - If selected, the `format` attribute will always be automatically populated with a detected value.
- **Scope** - If selected, the `scope` attribute will always be automatically populated with a detected value.
- **Type** - If selected, the `type` attribute will always be automatically populated with a detected value.
- **Navigation title** - If selected, the `navtitle` attribute will always be automatically populated with a detected value.

Insert link section

Allows you to specify that when a link reference is inserted (using actions in the **Link** drop-down menu), the values for certain attributes will always be automatically populated with a detected value (based on the specifications), even if it is the same as the default value. You can choose to always populate the values for the following attributes:

- **Format** - If selected, the `format` attribute will always be automatically populated with a detected value.
- **Scope** - If selected, the `scope` attribute will always be automatically populated with a detected value.
- **Type** - If selected, the `type` attribute will always be automatically populated with a detected value.

Use '.' instead of the ID of the parent topic (DITA 1.3)

When addressing a non-topic element within the topic that contains the URI reference, the URI reference can use an abbreviated fragment-identifier syntax that replaces the topic ID with "`.`" (`#./elementId`). For more information, see https://www.oxygenxml.com/dita/1.3/specs/index.html#archSpec/base/uri-based-addressing.html.

Profiling Attributes link

Opens the Profiling/Conditional Text preferences page where you can configure profiling attributes and condition sets.

DITA New Topics Preferences

To access the DITA New Topics preferences page, open the **Preferences** dialog box and go to **DITA** > **New topics**. This preferences page includes the following options:

Use the title to generate the file name

This option (and its sub-options) pertain to the rules that will be used to generate file names in the *New DITA File dialog box*. Select this option to use the text entered in the **Title** field to automatically generate a file name (the generated name can be seen in the **Save as** field). By default, the generated name will replace spaces with underscores (_), all illegal characters will be removed, and all upper case characters changed to lower case, but you can use the sub-options to change this.

Replace spaces with

If selected, the file name generation mechanism will replace spaces in the title with the character entered in this option.

Lower case only

If selected, the file name generation mechanism will only use lower case letters.

Use camel case

If selected, the file name generation mechanism will convert the title to a file name using the *camel case* convention where the first word starts with a lower case letter and all subsequent words begin with upper case (for example, `myFileName`).

Upper case first letter

Select this option if you want the file name generation mechanism to convert the title to a file name using the *camel case* convention but with an upper case letter for the first word (for example, `MyFileName`).

Use the file name as the value of the root ID attribute

Select this option to use the file name (as seen in the **Save as** field but without the file extension) as the value of the root `id` attribute for the new topic.

DITA Publishing Preferences

To access the DITA Publishing preferences page, open the **Preferences** dialog box and go to **DITA** > **Publishing**. You can also open this page by clicking the **Configure Publishing Templates Gallery** link in the **Templates** tab of the transformation scenario dialog box for **WebHelp Responsive** transformations.

You can use this preferences page to specify additional directories where custom publishing templates are stored. The templates stored in these directories will appear in the preview pane in the **Templates** tab of the transformation scenario dialog box, along with all the built-in templates.

DITA Logging Preferences

To access the DITA Logging preferences page, open the **Preferences** dialog box and go to **DITA** > **Logging**. This preferences page includes the following sections and options:

Show console output

Allows you to specify when to display the console output log in the message panel at the bottom of the editor. The following options are available:

- **When build fails** - Displays the console output log only if the build fails.
- **Always** - Displays the console output log, regardless of whether or not the build fails.

Show the following types of messages in a new tab

This section allows you to specify which types of messages will be displayed in separate tabs in the message panel at the bottom of the editor if a DITA transformation results in errors or warnings. You can choose whether or not to display the following types of messages:

- DITA-OT errors
- DITA-OT warnings
- DITA-OT info
- FOP errors
- FOP warnings
- FOP info
- XSLT problems

Document Type Association Preferences

Oxygen XML Editor plugin uses *document type associations* to associate a document type with a set of functionality provided by a *framework*. To configure the **Document Type Association** options, open the **Preferences** dialog box and go to **Document Type Association**.

The following actions are available in this preferences page:

Discover more frameworks by using add-ons update sites

Click on this link to specify URLs for *framework* add-on update sites.

Document Type Table

This table presents the currently defined *frameworks* (*document type associations*), sorted by priority and alphabetically. Each edited document type has a set of association rules (used by the application to detect the proper document type association to use for an opened XML document). A rule is described by:

- **Namespace** - Specifies the namespace of the root element from the association rules set (** (any)* by default). If you want to apply the rule only when the root element has no namespace, leave this field empty (remove the **ANY_VALUE** string).
- **Root local name** - Specifies the local name of the root element (** (any)* by default).
- **File name** - Specifies the name of the file (** (any)* by default).
- **Public ID** - Represents the Public ID of the matched document.
- **Java class** - Presents the name of the Java class, which is used to determine if a document matches the rule. This Java class should implement the `ro.sync.ecss.extensions.api.DocumentTypeCustomRuleMatcher` interface.

New

Opens a **Document type** configuration dialog box that allows you to add a new *framework*.

Edit

Opens a **Document type** configuration dialog box that allows you to edit an existing *framework*.

Note: If you try to edit an existing *framework* when you do not have write permissions to its storage location, a dialog box will be shown asking if you want to extend it.

Duplicate

Opens a **Document type** configuration dialog box that allows you to duplicate the configuration of an existing *framework*. This will create a snapshot of the *framework* in its current form. It is merely a copy of the document type and will not *evolve* along with the base document type like the **Extend** action does.

Extend

Opens a **Document type** configuration dialog box that allows you to extend an existing *framework*. You can add or remove functionality starting from a base document type. All of these changes will be saved as a patch. When the base document type is modified and evolves (for example, from one application version to another) the extension will evolve along with the base document type, allowing it to use the new actions added in the base document type.

Delete

Deletes the selected *framework* (document type).

Enable DTD/XML Schema processing in document type detection

When this option is selected (default value), the matching process also examines the DTD/XML Schema associated with the document. For example, the fixed attributes declared in the DTD for the root element are also analyzed, if this is specified in the association rules. This is especially useful if you are writing DITA customizations. DITA topics and maps are also matched by looking for the `DITAArchVersion` attribute of the root element. This attribute is specified as `default` in the DTD and it is detected in the root element, helping Oxygen XML Editor plugin to correctly match the DITA customization.

Only for local DTDs/XML Schemas

When this option is selected (default value), only the local DTDs / XML Schemas will be processed.

Enable DTD/XML Schema caching

When this option is selected (default value), the associated DTDs or XML Schema are cached when parsed for the first time, improving performance when opening new documents with similar schema associations.

Related Information:

Extending and Sharing a Framework (Document Type) on page 1299

Locations Preferences

Oxygen XML Editor plugin allows you to change the location where *frameworks* (document types) are stored, and to specify additional *framework* directories. The **Locations** preferences page allows you to specify the main `frameworks` folder location. You can choose between the **Default** directory (*`[OXYGEN_INSTALL_DIR]`*`/frameworks`) or a **Custom** specified directory. You can also change the current `frameworks` folder location value using the `com.oxygenxml.editor.frameworks.url` system property.

A list of additional `frameworks` directories can also be specified. The application will look in each of those folders for additional document type configurations to load. Use the **Add**, **Edit** and **Delete** buttons to manage the list of folders.

A document type configuration (*framework*) can be loaded from the following locations:

- Internal preferences - The document type configuration is stored in the application **Internal** preferences.
- Additional *framework* directories - The document type configuration is loaded from one of the specified **Additional frameworks directories** list.
- The `frameworks` folder - The main folder containing *framework* configurations.

All loaded document type configurations are first sorted by priority, then by document type name and then by load location (in the exact order specified above). When an XML document is opened, the application chooses the first document type configuration from the sorted list that matches the specific document.

All loaded document type configurations are first sorted by priority, then by document type.

Document Type Configuration Dialog Box

The **Document Type** Configuration dialog box allows you to create or edit a *framework* (document type). It is displayed when you use the **New**, **Edit**, **Duplicate**, or **Extend** buttons in the **Document Type Association** preferences page (open the **Preferences** dialog box and go to **Document Type Association**).

The configuration dialog box includes the following fields and sections:

- **Name** - The name of the *framework*. This will be displayed as its name in the **Document Type** column in the **Document Type Association** preferences page.
- **Priority** - Depending on the priority level, Oxygen XML Editor plugin establishes the order in which the existing *frameworks* are evaluated to determine the type of a document you are opening. It can be one of the following: Lowest, Low, Normal, High, or Highest. You can set a higher priority to *frameworks* you want to be evaluated first.
- **Description** - A detailed description of the *framework*.
- **Storage** - Displays the type of location where the *framework* configuration file is stored. Can be one of: **External** (*framework* configuration is saved in a file) or **Internal** (*framework* configuration is stored in the application's internal options).

  Note: If you set the **Storage** to **Internal** and the *framework* configuration is already stored in a *framework* file, the file content is saved in the application's internal options and the file is removed.
- **Initial edit mode** - Sets the default edit mode when you open a document for the first time.
- **Configuration Tabs** - The bottom section of the dialog box includes various tabs where you can configure numerous options for the *framework*.

Related Information:

Sharing a Framework (Document Type) on page 1298

Association Rules Tab

By combining multiple association rules you can instruct Oxygen XML Editor plugin to identify the type of a document. An Oxygen XML Editor plugin *association rule* holds information about **Namespace**, **Root local name**, **File name**, **Public ID**, **Attribute**, and **Java class**. Oxygen XML Editor plugin identifies the type of a document when the document matches at least one of the *association rules*. This tab give you access to a **Document type rule** dialog box that you can use to create *association rules* that activate on any document matching all the criteria defined in the dialog box.

To create a new association rule, click the **New** button at the bottom of the **Association Rules** tab, or to edit an existing rule, click the **Edit** button.

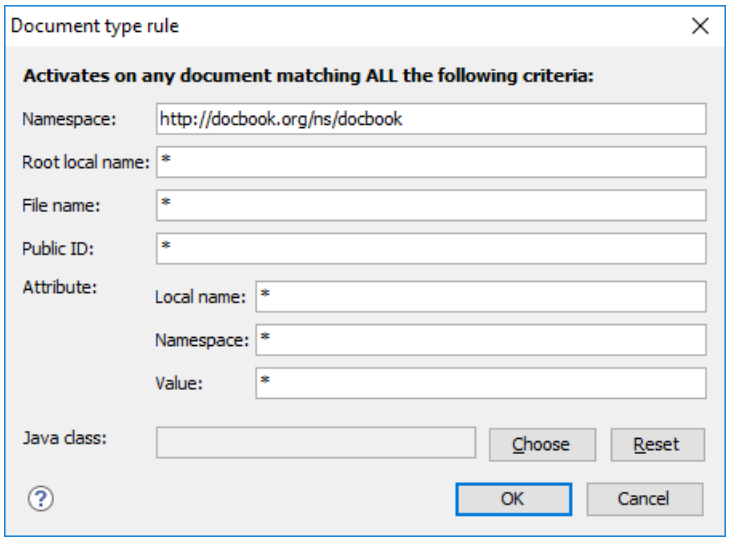


Figure 22: Document Type Rule Dialog Box

Tip: You can use wildcards (*?* and *) or editor variables in the **Document Type Rule** dialog box, and you can enter multiple values by separating them with a comma.

To open the **Association Rules** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Association Rules** tab.

In the **Association rules** tab, you can perform the following actions:

New

Opens the **Document type rule** dialog box allowing you to create *association rules*.

Edit

Opens the **Document type rule** dialog box allowing you to edit the properties of the currently selected *association rule*.

Delete

Deletes the currently selected *association rules* from the list.

Move Up

Moves the selected *association rule* up one spot in the list.

Move Down

Moves the selected *association rule* down one spot in the list.

Schema Tab

In the **Schema** tab, you can specify a schema that Oxygen XML Editor plugin uses if an XML document does not contain a schema declaration and no default validation scenario is associated with it.

To open the **Schema** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Schema** tab.

This tab includes the following options for defining a schema to be used if no schema is detected in the XML file:

Schema type

Use this drop-down list to select the type of schema.

Schema URI

You can specify the URI of the schema file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Tip: It is a good practice to store all resources in the *framework* directory and use the *${framework}* editor variable to reference them. This is a recommended approach to designing a self-contained document type that can be easily maintained and shared between multiple users.

Classpath Tab

The **Classpath** tab displays a list of folders and *JAR* libraries that hold implementations for API extensions, implementations for custom **Author** mode operations, various resources (such as stylesheets), and *framework* translation files. Oxygen XML Editor plugin loads the resources looking in the folders in the order they appear in the list.

To open the **Classpath** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Classpath** tab.

The **Classpath** tab includes the following actions:

New

Opens a dialog box that allows you to add a resource to the table in the **Classpath** tab. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Tip: The path can also contain wildcards (for example, `${framework}/lib/*.jar`).

Edit

Opens a dialog box that allows you to edit a resource in the **Classpath** tab. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Tip: The path can also contain wildcards (for example, `${framework}/lib/*.jar`).

Delete

Deletes the currently selected resource from the list.

Move Up

Moves the selected resource up one spot in the list.

Move Down

Moves the selected resource down one spot in the list.

Related Information:

Extensions Tab on page 64
Author Tab on page 50
Localizing Frameworks on page 1264

Author Tab

The **Author** tab is a container that holds information regarding the CSS file used to render a document in the **Author** mode, and regarding *framework*-specific actions, menus, contextual menus, toolbars, and content completion list of proposals.

To open the **Author** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Author** tab.

The options that you configure in the **Author** tab are grouped in subtabs.

CSS Subtab

The **CSS** subtab contains the CSS files that Oxygen XML Editor plugin uses to render a document in the **Author** mode. In this subtab, you can set *main* and *alternate* CSS files. When you are editing a document in the **Author** mode, you can switch between these CSS files from the **Styles** drop-down menu on the **Author Styles** toolbar.

To open the **CSS** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **CSS** subtab.

The following actions are available in the **CSS** subtab:

New

Opens a dialog box that allows you to add a CSS file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Edit

Opens a dialog box that allows you to edit the current selection.

Delete

Deletes the currently selected CSS file.

Move Up

Moves the selected CSS file up in the list.

Move Down

Moves the selected CSS file down in the list.

Enable multiple selection of alternate CSSs

Allows users to apply multiple alternate styles, as layers, over the main CSS style. This option is selected by default for DITA document types.

If there are CSSs specified in the document then

You can choose between the following options for controlling how the CSS files that are set in this subtab will be handled if a CSS is specified in the document itself:

- **Ignore CSSs from the associated document type** - The CSS files set in this CSS subtab are overwritten by the CSS files specified in the document itself.
- **Merge them with CSSs from the associated document type** - The CSS files set in this CSS subtab are merged with the CSS files specified in the document itself.

Related Information:

CSS Stylesheet on page 1226
Configuring and Managing Multiple CSS Styles on page 1315

Actions Subtab

The **Actions** subtab contains a sortable table that includes all the *framework*-specific actions. Each action has a unique ID, a name, a description, and a shortcut key.

To open the **Actions** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Actions** subtab.

The following actions are available in this subtab:

New

Opens the **Action** dialog box that allows you to add an action.

Duplicate

Duplicates the currently selected action.

Edit

Opens the **Action** dialog box that allows you to edit the existing action.

Delete

Deletes the currently selected action.

Author Action Dialog Box

To edit an existing document type action or create a new one, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Actions** subtab. At the bottom of this subtab, click **New** to create a new action, or **Edit** to modify an existing one.

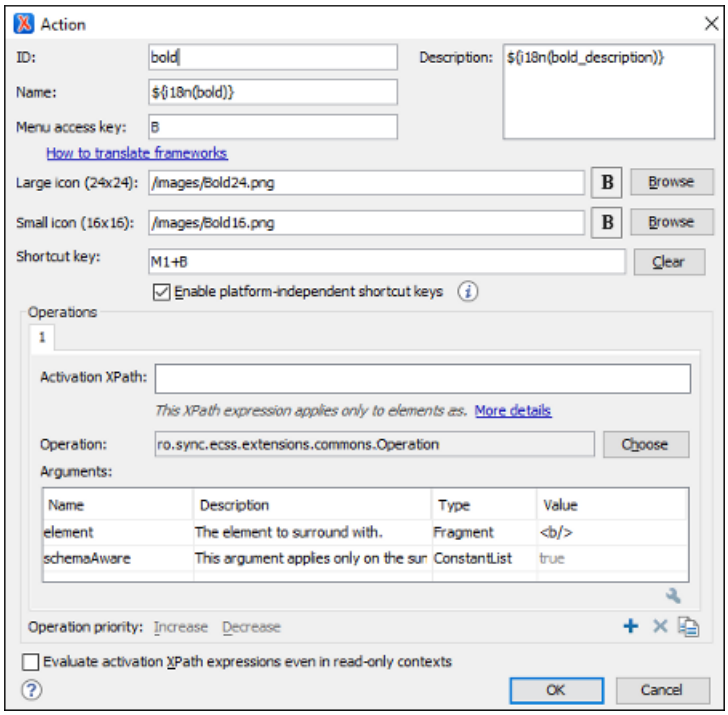


Figure 23: Action Dialog Box

The following options are available in the **Action** dialog box:

ID

Specifies a unique action identifier.

Name

Specifies the name of the action. This name is displayed as a tooltip or as a menu item.

Tip: You can use the **${i18n('key')}** editor variable to allow for multiple translations of the name.

Menu access key

In Windows, you can access menus by holding down **Alt** and pressing the keyboard key that corresponds to the *Letter* that is underlined in the name of the menu. Then, while still holding down **Alt**, you can select submenus and menu action the same way by pressing subsequent corresponding keys. You can use this option to specify the *Letter* in the name of the action that can be used to access the action.

Description

A description of the action. This description is displayed as a tooltip when hovering over the action.

Tip: You can use the **${i18n('key')}** editor variable to allow for multiple translations of the description.

How to translate frameworks link

Use this link to see more information about Localizing Frameworks on page 1264.

Large icon

Allows you to select an image for the icon that Oxygen XML Editor plugin uses for the toolbar action.

Tip: A good practice is to store the image files inside the *framework* directory and use the *${frameworks}* editor variable to make the image relative to the *framework* location. If the images are bundled in a *jar* archive (for instance, along with some Java operations implementation), it is convenient to reference the images by their relative path location in the *class-path*.

Small icon

Allows you to select an image for the icon that Oxygen XML Editor plugin uses for the contextual menu action.

Note: If you are using a Retina or HiDPI display, Oxygen XML Editor plugin automatically searches for higher resolution icons in the path specified in both the **Large icon** and **Small icon** options. For more information, see Adding Retina/HiDPI Icons in a Framework on page 1257.

Shortcut key

This field allows you to configure a shortcut key for the action that you are editing. The + character separates the keys.

Enable platform-independent shortcut keys

If this checkbox is selected, the shortcut that you specify in this field is platform-independent and the following modifiers are used:

- `M1` represents the **Command** key on MacOS X, and the **Ctrl** key on other platforms.
- `M2` represents the **Shift** key.
- `M3` represents the **Option** key on MacOS X, and the **Alt** key on other platforms.
- `M4` represents the **Ctrl** key on MacOS X, and is undefined on other platforms.

Operations section

In this section of the **Action** dialog box, you configure the functionality of the action that you are editing. An action has one or more operation modes. The evaluation of an XPath expression activates an operation mode. The first selected operation mode is activated when you trigger the action. The scope of the XPath expression must consist only of element nodes and attribute nodes of the edited document. Otherwise, the XPath expression does not return a match and does not fire the action. For more details see: Activate Multiple Functions for Actions using XPath Expressions on page 53.

The following options are available in this section:

Activation XPath

An XPath 2.0 expression that applies to elements and attributes. For more details see:Activate Multiple Functions for Actions using XPath Expressions on page 53.

Operation

Specifies the invoked operation.

Arguments

Specifies the arguments of the invoked operation. The **Edit** at the bottom of the table allows you to edit the arguments of the operation.

Operation priority

Increases or decreases the priority of an operation. The operations are invoked in the order of their priority. If multiple XPath expressions are true, the operation with the highest priority is invoked.

- **Add** - Adds an operation.
- **Remove** - Removes an operation.
- **Duplicate** - Duplicates an operation.

Evaluate activation XPath expressions even in read-only cotnexts

If this checkbox is selected, the action can be invoked even when the cursor is placed in a read-only location.

Activate Multiple Functions for Actions using XPath Expressions

An **Author** mode action can have multiple functions, each function invoking an **Author** mode operation with certain configured parameters. Each function of an action has an XPath 2.0 expression for activating it.

For each function of an action, the application will check if the XPath expression is fulfilled (when it returns a not empty nodes set or a **true** result). If it is fulfilled, the operation defined in the function will be executed.

The following special XPath extension functions are provided:

- *oxy:allows-child-element()* - Use this function to check whether or not an element is valid child element in the current context, according to the associated schema.
- *oxy:allows-global-element()* - Use this function to check whether or not an element is a valid global element for the current *framework*, according to the associated schema.

- *oxy:current-selected-element()* - Use this function to get the currently selected element.
- *oxy:is-required-element()* - Use this function to check if the element returned by the given XPath expression is required (based on the rules declared in the schema).

`oxy:allows-child-element()` Function

The **oxy:allows-child-element()** function allows you to check whether or not an element that matches the arguments of the function is valid as a child of the element at the current cursor position, according to the associated schema. It is evaluated at the cursor position and has the following signature:

`oxy:allows-child-element($childName, ($attributeName, $defaultAttributeValue, $contains?)?)`

The following parameters are supported:

`childName`

The name of the element that you want to check if it is valid in the current context. Its value is a string that supports the following forms:

- The child element with the specified local name that belongs to the default namespace.

  ```
  oxy:allows-child-element("para")
  ```

  The above example verifies if the `para` element (of the default namespace) is allowed in the current context.
- The child element with the local name specified by any namespace.

  ```
  oxy:allows-child-element("*:para")
  ```

  The above example verifies if the `para` element (of any namespace) is allowed in the current context.
- A prefix-qualified name of an element.

  ```
  oxy:allows-child-element("prefix:para")
  ```

  The prefix is resolved in the context of the element where the cursor is located. The function matches on the element with the `para` local name from the previous resolved namespace. If the prefix is not resolved to a namespace, the function returns a value of `false`.
- A specified namespace-URI-qualified name of an element.

  ```
  oxy:allows-child-element("{namespaceURI}para")
  ```

  The `namespaceURI` is the namespace of the element. The above example verifies if the `para` element (of the specified namespace) is allowed in the current context.
- Any element.

  ```
  oxy:allows-child-element("*")
  ```

  The above function verifies if any element is allowed in the current context.

  Note: A common use case of `oxy:allows-child-element("*")` is in combination with the `attributeName` parameter.

`attributeName`

The attribute of an element that you want to check if it is valid in the current context. Its value is a string that supports the following forms:

- The attribute with the specified name from no namespace.

  ```
  oxy:allows-child-element("*", "class", " topic/topic ")
  ```

  The above example verifies if an element with the `class` attribute and the default value of this attribute (that contains the `topic/topic` string) is allowed in the current context.
- The attribute with the local name specified by any namespace.

  ```
  oxy:allows-child-element("*", "*:localname", " topic/topic ")
  ```

- A qualified name of an attribute.

  ```
  oxy:allows-child-element("*", "prefix:localname", " topic/topic ")
  ```

  The prefix is resolved in the context of the element where the cursor is located. If the prefix is not resolved to a namespace, the function returns a value of `false`.

`defaultAttributeValue`

A string that represents the default value of the attribute. Depending on the value of the next parameter, the default value of the attribute must either contain this value or be equal with it.

`contains`

An optional boolean. The default value is `true`. For the `true` value, the default value of the attribute must contain the `defaultAttributeValue` parameter. If the value is `false`, the two values must be the same.

`oxy:allows-global-element()` Function

The **oxy:allows-global-element()** function allows you to check whether or not an element that matches the arguments of the function is valid for the current *framework*, according to the associated schema. It has the following signature:

`oxy:allows-global-element($elementName, ($attributeName, $defaultAttributeValue, $contains?)?)`

The following parameters are supported:

`elementName`

The name of the element that you want to check if it is valid in the current *framework*. Its value is a string that supports the following forms:

- The element with the specified local name that belongs to the default namespace.

  ```
  oxy:allows-global-element("para")
  ```

  The above example verifies if the `para` element (of the default namespace) is allowed in the current *framework*.
- The element with the local name specified by any namespace.

  ```
  oxy:allows-global-element("*:para")
  ```

  The above example verifies if the `para` element (of any namespace) is allowed in the current *framework*.
- A prefix-qualified name of an element.

  ```
  oxy:allows-global-element("prefix:para")
  ```

  The prefix is resolved in the context of the *framework*. The function matches on the element with the `para` local name from the previous resolved namespace. If the prefix is not resolved to a namespace, the function returns a value of `false`.
- A specified namespace-URI-qualified name of an element.

  ```
  oxy:allows-global-element("{namespaceURI}para")
  ```

  The `namespaceURI` is the namespace of the element. The above example verifies if the `para` element (of the specified namespace) is allowed in the current *framework*.
- Any element.

  ```
  oxy:allows-global-element("*")
  ```

  The above function verifies if any element is allowed in the current *framework*.

`attributeName`

The attribute of an element that you want to check if it is valid in the current *framework*. Its value is a string that supports the following forms:

- The attribute with the specified name from no namespace.

  ```
  oxy:allows-global-element("*", "class", " topic/topic ")
  ```

  The above example verifies if an element with the `class` attribute and the default value of this attribute (that contains the `topic/topic` string) is allowed in the current *framework*.
- The attribute with the local name specified by any namespace.

  ```
  oxy:allows-global-element("*", "*:localname", " topic/topic ")
  ```
- A qualified name of an attribute.

  ```
  oxy:allows-global-element("*", "prefix:localname", " topic/topic ")
  ```

  The prefix is resolved in the context of the *framework*. If the prefix is not resolved to a namespace, the function returns a value of `false`.

`defaultAttributeValue`

A string that represents the default value of the attribute. Depending on the value of the next parameter, the default value of the attribute must either contain this value or be equal with it.

`contains`

An optional boolean. The default value is `true`. For the `true` value, the default value of the attribute must contain the `defaultAttributeValue` parameter. If the value is `false`, the two values must be the same.

`oxy:current-selected-element()` Function

This function returns the fully selected element. If no element is selected, the function returns an empty sequence.

Example: *oxy:current-selected-element* Function

```
oxy:current-selected-element()[self::p]/b
```

This example returns the b elements that are children of the currently selected p element.

`oxy:is-required-element()` Function

This function checks if the element returned by the given XPath expression is required (based on the rules declared in the schema). It has only one argument, an XPath expression, and the XPath expression must be written in such a way that it returns a single element.

Example: *oxy:is-required-element* Function

```
oxy:is-required-element(.)
```

This example would check to see if the current element is required by the schema.

`oxy:is-editable-element()` Function

This function checks if the element returned by the given XPath expression is editable (content can be inserted in it), meaning both that the entire XML file is editable and that the current context where the element is placed is editable. For example, if the element is inside an *xi:included* section, it is not editable.

It only has one argument, an XPath expression, and the XPath expression must be written in such a way that it returns a single element.

Example: *oxy:is-editable-element* Function

```
oxy:is-editable-element(ancestor-or-self::table)
```

This example would return *true* if the cursor is placed inside a table and it is editable or *false* if it is not editable.

Localizing Frameworks

Oxygen XML Editor plugin supports *framework* localization (translating *framework* actions, buttons, and menu entries to various languages). This lets you develop and distribute a *framework* to users that speak other languages without changing the distributed *framework*.

To localize the content of a *framework*, create a `translation.xml` file that contains all the translation (key, value) mappings. The `translation.xml` has the following format:

```
<translation>
    <languageList>
        <language description="English" lang="en_US"/>
        <language description="German" lang="de_DE"/>
        <language description="French" lang="fr_FR"/>
    </languageList>
    <key value="list">
        <comment>List menu item name.</comment>
        <val lang="en_US">List</val>
        <val lang="de_DE">Liste</val>
        <val lang="fr_FR">Liste</val>
    </key>
.....................
</translation>
```

Oxygen XML Editor plugin matches the GUI language with the language set in the `translation.xml` file. If this language is not found, the first available language declared in the `languagelist` tag for the corresponding *framework* is used.

Add the directory where this file is located to the **Classpath** list corresponding to the edited document type.

After you create this file, you can use the keys defined in it to customize the name and description of the following:

- Actions
- Menu entries
- Contextual menus
- Toolbars
- Static CSS content

For example, if you want to localize the bold action, open the **Preferences** dialog box and go to **Document Type Association**. Use the **New** or **Edit** button to open the **Document type** configuration dialog box, go to **Author** > **Actions**, and rename the bold action to `${i18n(translation_key)}`. Actions with a name format other than `${i18n(translation_key)}` are not localized. *Translation_key* corresponds to the key from the translation.xml file.

Now open the `translation.xml` file and edit the translation entry if it exists or create one if it does not exist. This example presents an entry in the translation.xml file:

```
<key value="translation_key">
        <comment>Bold action name.</comment>
        <val lang="en_US">Bold</val>
        <val lang="de_DE">Bold</val>
        <val lang="fr_FR">Bold</val>
    </key>
```

To use a description from the `translation.xml` file in the Java code used by your custom *framework*, use the new *ro.sync.ecss.extensions.api.AuthorAccess.getAuthorResourceBundle()* API method to request the associated value for a certain key. This allows all the dialog boxes that you present from your custom operations to have labels translated in multiple languages.

You can also reference a key directly in the CSS content:

```
title:before{
    content:"${i18n(title.key)} : ";
}
```

Note: You can enter any language you want in the `languagelist` tag and any number of keys.

The `translation.xml` file for the DocBook *framework* is located here:*[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/i18n/translation.xml`. In the **Classpath** list corresponding to the DocBook document type the following entry was added: `${framework}/i18n/`.

To see how the DocBook actions are defined to use these keys for their name and description, open the **Preferences** dialog box and go to **Document Type Association** > **Author** > **Actions**. If you look in the Java class *ro.sync.ecss.extensions.docbook.table.SADocbookTableCustomizerDialog* available in the *oxygen-sample-framework* module of the Oxygen SDK Maven archetype, you can see how the new *ro.sync.ecss.extensions.api.AuthorResourceBundle* API is used to retrieve localized descriptions for various keys.

Menu Subtab

In the **Menu** subtab, you can configure which actions will appear in the *framework*-specific menu. The subtab is divided in two sections: **Available actions** and **Current actions**.

To open the **Menu** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Menu** subtab.

The **Available actions** section presents a table that displays the actions defined in the **Actions** subtab, along with their icon, ID, and name. The **Current actions** section holds the actions that are displayed in the Oxygen XML Editor plugin menu. To add an action in this section as a sibling of the currently selected action, use the **Add as sibling** button. To add an image in this section as a child of the currently selected action use the **Add as child** button.

The following actions are available in the **Current actions** section:

Edit

Edits an item.

Remove

Removes an item.

Move Up

Moves an item up.

Move Down

Moves an item down.

Contextual Menu Subtab

In the **Contextual menu** subtab you configure what *framework*-specific action the *Content Completion Assistant* proposes. The subtab is divided in two sections: **Available actions** and **Current actions**.

To open the **Contextual Menu** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Contextual Menu** subtab.

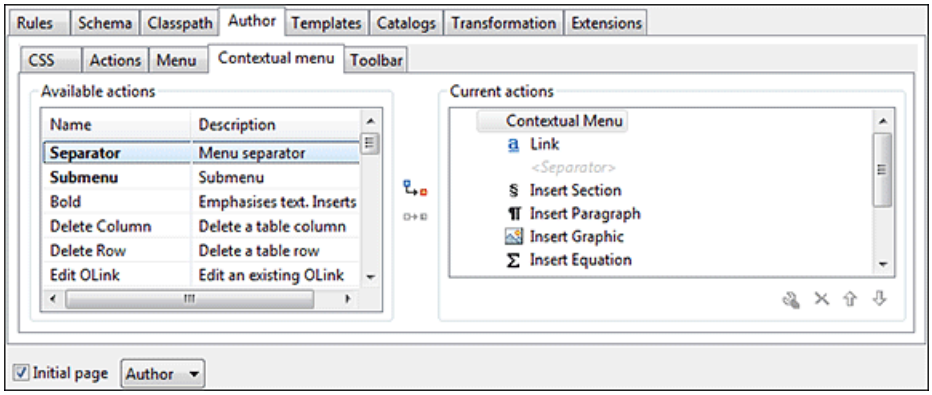


Figure 24: Contextual Menu Subtab

The **Available actions** section presents a table that displays the actions defined in the **Actions** subtab, along with their icon, ID, and name. The **Current actions** section contains the actions that are displayed in the contextual menu for documents that belong to the edited *framework*.

The following actions are available in this subtab:

Add as sibling

Adds the selected action or submenu from the **Available actions** section to the **Current actions** section as a sibling of the selected action.

Add as child

Adds the selected action or submenu from the **Available actions** section to the **Current actions** section as a child of the selected action.

Edit

This option is available for container (submenu) items that are listed in the **Current actions** section. It opens a configuration dialog box that allows you to edit the selected container (submenu).

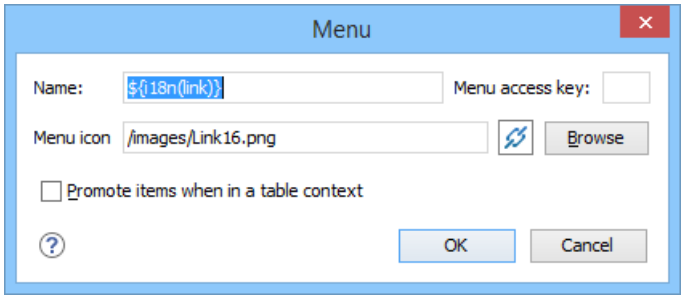


Figure 25: Menu Action Configuration Dialog Box

The following options are available in this dialog box:

Name

Specifies the name of the action. This name is displayed as a tooltip or as a menu item.

Tip: You can use the **${i18n('key')}** editor variable to allow for multiple translations of the name.

Menu access key

In Windows, you can access menus by holding down **Alt** and pressing the keyboard key that corresponds to the *Letter* that is underlined in the name of the menu. Then, while still holding down **Alt**, you can select submenus and menu action the same way by pressing subsequent corresponding keys. You can use this option to specify the *Letter* in the name of the action that can be used to access the action.

Menu icon

Allows you to select an image for the icon that Oxygen XML Editor plugin uses for the container (submenu).

Promote items when in a table context

If this option is selected, when invoking the contextual menu from within a table, all the actions in this container (submenu) will be promoted to the main level in the contextual menu. Actions and submenus that are not promoted are still available in the **Other actions** submenu when invoking the contextual menu within a table.

Remove

Removes the selected action or submenu from the **Current actions** section.

Move Up

Moves the selected item up in the list.

Move Down

Moves the selected item down in the list.

Toolbar Subtab

In the **Toolbar** subtab you configure what *framework*-specific action the Oxygen XML Editor plugin toolbar holds. The subtab is divided in two sections: **Available actions** and **Current actions**.

To open the **Toolbar** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Toolbar** subtab.

The **Available actions** section presents a table that displays the actions defined in the **Actions** subtab, along with their icon, ID, and name. The **Current actions** section holds the actions that are displayed in the Oxygen XML Editor plugin toolbar when you work with a document belonging to the edited *framework*. To add an action in this

section as a sibling of the currently selected action, use the **Add as sibling** button. To add an action in this section as a child of the currently selected action use the **Add as child** button.

The following actions are available in the **Current actions** section:

Edit
Edits an item.

Remove
Removes an item.

Move Up
Moves an item up.

Move Down
Moves an item down.

Content Completion Subtab

In the **Content Completion** subtab you configure what *framework*-specific the *Content Completion Assistant* proposes. The subtab is divided in two sections: **Available actions** and **Current actions**.

To open the **Content Completion** subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Content Completion** subtab.

Available and Current Actions

The **Available actions** section presents a table that displays the actions defined in the **Actions** subtab, along with their icon, ID, and name. The **Current actions** section holds the actions that the *Content Completion Assistant* proposes when you work with a document belonging to the edited *framework*. To add an action in this section as a sibling of the currently selected action, use the **Add as sibling** button. To add an action in this section as a child of the currently selected action use the **Add as child** button.

The following actions are available in the **Current actions** section:

Edit
Edits an item.

Remove
Removes an item.

Move Up
Moves an item up.

Move Down
Moves an item down.

Filter Table

The **Filter** section presents a table that allows you to add elements to be filtered from the *Content Completion Assistant* or from some specific helper views or menus. Use the **Add** button to add more filters to the table, the **Edit** button to modify an existing item in the table, or the **Remove** button to remove a filtered item. The **Add** and **Edit** buttons open a **Remove item** dialog box.

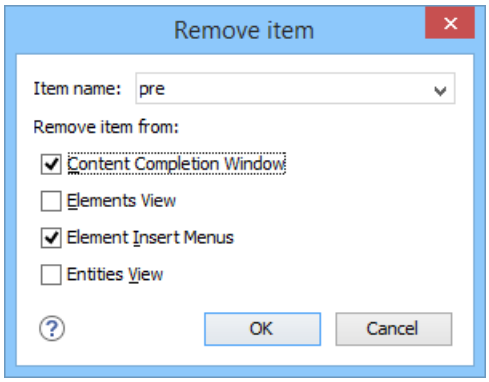


Figure 26: Remove Item Dialog Box

Use this dialog box to add or configure the elements that will be filtered:

Item name

Use this text field to enter the name of the element to be filtered. The drop-down list also includes a few special content completion actions that can be filtered (**<SPLIT>** and **<ENTER>**).

Remove item from

You can choose to filter the element from any of the following:

- **Content Completion Window** - The element will not appear in the *Content Completion Assistant*.
- **Elements View** - The element will not appear in the **Elements** view.
- **Element Insert Menus** - The element will not appear in the **Append Child**, **Insert Before**, or **Insert After** menus that are available in certain contextual menus (for example, the contextual menu of the **Outline** view).
- **Entities View** - The element will not appear in the **Entities** view.

Related Information:

Customizing the Content Completion Assistant on page 1300

Templates Tab

The **Templates** tab specifies a list of directories where new document templates are located for this particular framework. These directories, along with the document templates that are saved inside them, will appear in the **New from templates** wizard inside the **Framework templates** category according to your framework and the directory path you specify in this tab.

To open the **Templates** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Templates** tab.

The **Templates** tab includes the following actions:

New

Opens a dialog box that allows you to specify the path to a directory that contains document templates for this framework. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Tip: The path can also contain wildcards. For example, using `${frameworkDir}/templates/*` would add all the template folders found inside the `templates` directory.

Edit

Opens a dialog box that allows you to edit the path of a directory that contains document templates for this framework. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Tip: The path can also contain wildcards. For example, using `${frameworkDir}/templates/*` would add all the template folders found inside the `templates` directory.

Delete

Deletes the currently selected template directory from the list.

Move Up

Moves the selected template directory up one spot in the list.

Move Down

Moves the selected template directory down one spot in the list.

Catalogs Tab

The **Catalogs** tab specifies a list of *XML Catalogs*, specifically for the edited *framework*, that are added to list of catalogs that Oxygen XML Editor plugin uses to resolve resources.

To open the **Catalogs** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Catalogs** tab.

You can perform the following actions:

Add

Opens a dialog box that allows you to add a catalog to the list. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Edit

Opens a dialog box that allows you to edit the path of an existing catalog.

Delete

Deletes the currently selected catalog from the list.

Move Up

Moves the selected catalog up one spot in the list.

Move Down

Moves the selected catalog down one spot in the list.

Transformation Tab

In the **Transformation** tab, you can configure the transformation scenarios associated with the particular *framework* you are editing. These transformation scenarios are presented in the **Configure Transformation Scenarios** dialog box when transforming a document and you can specify which scenarios will be used by default for a particular document type.

To open the **Transformation** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Transformation** tab.

The **Transformation** tab offers the following options:

Default checkbox

You can set one or more of the scenarios listed in this tab to be used as the default transformation scenario when another specific scenario is not specified. The scenarios that are set as default are rendered bold in the **Configure Transformation Scenarios** dialog box.

New

Opens the **New scenario** dialog box allowing you to create a new transformation scenario for the particular document type.

Duplicate

Allows you to duplicate the configuration of an existing transformation scenario. It opens the **Edit scenario** dialog box where you can configure the properties of the duplicated scenario.

Edit

Opens the **Edit scenario** dialog box allowing you to edit the properties of the currently selected transformation scenario.

Delete

Deletes the currently selected transformation scenario.

Import scenarios

Imports transformation scenarios.

Export selected scenarios

Export transformation scenarios.

Move Up

Moves the selection to the previous scenario.

Move Down

Moves the selection to the next scenario.

Validation Tab

In the **Validation** tab, you can configure the validation scenarios associated with the particular *framework* you are editing. These validation scenarios are presented in the **Configure Validation Scenarios** dialog box when validating a document and you can specify which scenarios will be used by default for a particular document type.

Note: If a *master file* is associated with the current file, the validation scenarios defined in the *master file*, along with any Schematron schema defined in the default scenarios for that particular *framework*, are used for the validation. These take precedence over other types of validation units defined in the default scenarios for the particular *framework*. For more information on *master files*, see Master Files Support on page 381 or Working with Modular XML Files in the Master Files Context on page 588.

To open the **Validation** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Validation** tab.

The **Validation** tab offers the following options:

Default checkbox

You can set one or more of the scenarios listed in this tab to be used as the default validation scenario when another specific scenario is not specified in the validation process. The scenarios that are set as default are rendered bold in the **Configure Validation Scenarios** dialog box.

New

Opens the **New scenario** dialog box allowing you to create a new validation scenario.

Duplicate

Allows you to duplicate the configuration of an existing validation scenario. It opens the **Edit scenario** dialog box where you can configure the properties of the duplicated scenario.

Edit

Opens the **Edit scenario** dialog box allowing you to edit the properties of the currently selected validation scenario.

Delete

Deletes the currently selected validation scenario.

Import scenarios

Imports validation scenarios.

Export selected scenarios

Export validation scenarios.

Move Up

Moves the selected scenario up one spot in the list.

Move Down

Moves the selected scenario down one spot in the list.

Extensions Tab

The **Extensions** tab specifies implementations of Java interfaces used to provide advanced functionality to the document type.

To open the **Extensions** tab of the **Document type** configuration dialog box, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, and click on the **Extensions** tab.

Libraries containing the implementations must be present in the *classpath* of your document type. The Javadoc available at https://www.oxygenxml.com/InstData/Editor/SDK/javadoc/ contains details about how each API implementation functions.

Editor Preferences

Oxygen XML Editor plugin lets you configure the appearance of various components and features of the main editor. To access these options, open the **Preferences** dialog box and go to **Editor** (or right-click in the editor window and choose **Preferences**).

The following options are available:

Editor background

Allows you to set the background color for text editors.

Completion proposal background

Allows you to set the background color of the *Content Completion Assistant*.

Completion proposal foreground

Allows you to set the color of the text in the *Content Completion Assistant*.

Documentation window background

Allows you to set the background color of the documentation of elements suggested by the *Content Completion Assistant*.

Documentation window foreground

Allows you to set the color of the text for the documentation of elements suggested by the *Content Completion Assistant*.

Line wrap

If selected, long lines are automatically wrapped in edited documents. The line wrap does not alter the document content since the application does not use *new-line* characters to break long lines.

Enable folding when opening a new editor

If selected (default value), the vertical stripe that holds the folding markers is displayed in **Text** mode.

Beep on operation finished

Oxygen XML Editor plugin emits a short beep when a validation, check well-formedness, or transformation action has ended.

Note: When the validation or the transformation process of a document is successful, the beep signal has a higher audio frequency, as opposed to when the validation fails, and the beep signal has a lower audio frequency. On the Windows platform, for other operations, the default system sound (`Asterisk`) is used. You can configure it by changing the sound theme.

Display quick-assist and quick-fix side hints

Displays the *Quick Assist* icon ( ) and *Quick Fix* icon ( ) in the line number stripe on the left side of the editor.

Highlight matching tag

If you place the cursor on a start or end tag, Oxygen XML Editor plugin highlights the corresponding member of the pair.

Tip: You can configure the colors and how various types of highlights are shown from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Minimum fold range

You can specify the minimum number of lines in a block for which the *folding* support becomes active. If you modify this value, the change takes effect next time you open the editor.

Content Completion Preferences

Oxygen XML Editor plugin provides a *Content Completion Assistant* that provides a list of available options at any point in a document and can auto-complete structures, elements, and attributes. To configure the **Content Completion** preferences, open the **Preferences** dialog box and go to **Editor** > **Content Completion**. These options control how the *Content Completion Assistant* works.

The following options are available:

Auto close the last opened tag

When selected, Oxygen XML Editor plugin automatically closes the last open tag when you type </.

Automatically rename/delete/comment matching tags

If you rename, delete, or comment out a start tag, Oxygen XML Editor plugin automatically renames, deletes, or comments out the matching end tag.

Note: If you select **Toggle comment** for multiple starting tags and the matching end tags are on the same line as other start tags, the end tags are not commented.

Enable content completion

Toggles the content completion feature on or off.

Close the inserted element

When you choose an entry from the *Content Completion Assistant* list of proposals, Oxygen XML Editor plugin inserts both start and end tags. The following additional options are available in regards to closing the element:

- **If it has no matching tag** - The end tag of the inserted element is automatically added only if it is not already present in the document.
- **Add element content** - Oxygen XML Editor plugin inserts the required elements specified in the DTD, XML Schema, or RELAX NG schema that is associated with the edited XML document.
  - **Add optional content** - If selected, Oxygen XML Editor plugin inserts the optional elements specified in the DTD, XML Schema, or RELAX NG schema.
  - **Add first Choice particle** - If selected, Oxygen XML Editor plugin inserts the first **choice** particle specified in the DTD, XML Schema, or RELAX NG schema.

Case sensitive search

When selected, the search in the *Content Completion Assistant* is case-sensitive when you type a character ('a' and 'A' are different characters).

Note: This option is ignored when the current language itself is not case sensitive. For example, the case is ignored in the CSS language.

Position cursor between tags

When selected, Oxygen XML Editor plugin automatically moves the cursor between the start and end tag after inserting the element. This only applies to:

- Elements with only optional attributes or no attributes at all.
- Elements with required attributes, but only when the **Insert the required attributes** option is not selected.

Show all entities

Oxygen XML Editor plugin displays a list with all the internal and external entities declared in the current document when you type the start character of an entity reference (for example, &).

Insert the required attributes

Oxygen XML Editor plugin inserts automatically the required attributes taken from the DTD or XML Schema.

Insert the fixed attributes

If selected, Oxygen XML Editor plugin automatically inserts any `FIXED` attributes from the DTD or XML Schema for an element inserted with the help of the *Content Completion Assistant*.

Show recently used items

When selected, Oxygen XML Editor plugin remembers the last inserted items from the *Content Completion Assistant* window. The number of items to be remembered is limited by the **Maximum number of recent items shown** list box. These most frequently used items are displayed on the top of the content completion window and their icons are decorated with a small red square..

Maximum number of recent items shown

Specifies the limit for the number of recently used items presented at the top of the *Content Completion Assistant* window.

Learn attributes values

When selected, Oxygen XML Editor plugin learns the attribute values used in a document.

Learn on open document

Oxygen XML Editor plugin automatically learns the document structure when the document is opened.

Learn words (Dynamic Abbreviations, available on Ctrl+Space (Command+Space on OS X))

When selected, Oxygen XML Editor plugin learns the typed words and makes them available in a content completion fashion by pressing **Ctrl + Space (Command + Space on OS X)** on your keyboard;

Note: In order to be learned, the words need to be separated by space characters.

Activation delay of the proposals window (ms)

Delay in milliseconds from last key press until the *Content Completion Assistant* is displayed.

Related Information:

Configuring the Proposals for Attribute and Element Values on page 1304

Annotations Preferences

Certain types of schemas (XML Schema, DTDs, Relax NG) can include annotations that document the various elements and attributes that they define. Oxygen XML Editor plugin can display these annotations when offering content completion suggestions. To configure the **Annotations** preferences, open the **Preferences** dialog box and go to **Editor** > **Content Completion** > **Annotations**.

The following options are available:

Show annotations in Content Completion Assistant

If selected, Oxygen XML Editor plugin displays the schema annotations of an element, attribute, or attribute value currently selected in the *Content Completion Assistant* proposals list.

Show annotations in tooltip

If selected, Oxygen XML Editor plugin displays the annotation of elements and attributes as a tooltip when you hover over them with the cursor in the editing area or in the **Elements** view. If not selected, tooltips are disabled in all modes.

Show annotation in HTML format, if possible

This option allows you to view the annotations associated with an element or attribute in HTML format. It is available when editing XML documents that have associated an XML Schema or Relax NG schema. If this option is not selected, the annotations are converted and displayed as plain text.

Prefer DTD comments that start with "doc:" as annotations

To address the lack of dedicated annotation support in DTD documents, Oxygen XML Editor plugin recommends prefixing with the `doc :` particle all comments intended to be shown to the developer who writes an XML validated against a DTD schema.

If this option is selected, Oxygen XML Editor plugin uses the following mechanism to collect annotations:

- If at least one `doc :` comment is found in the entire DTD, only comments of this type are displayed as annotations.

- If no `doc:` comment is found in the entire DTD, all comments are considered annotations and displayed as such.

If not selected, all comments, regardless of their type, are considered annotations and displayed as such.

Use all Relax NG annotations as documentation

If selected, any element outside the Relax NG namespace, that is `http://relaxng.org/ns/structure/1.0`, is considered annotation and is displayed in the annotation window next to the *Content Completion Assistant* window and in the **Model** view. When this option is not selected, only elements from the Relax NG annotations namespace, that is `http://relaxng.org/ns/compatibility/annotations/1.0` are considered annotations.

Related Information:

Schema Annotations in Text Mode on page 415

XPath Preferences

Oxygen XML Editor plugin provides content-completion support for XPath expressions. To configure the options for the content completion in XPath expressions, open the **Preferences** dialog box and go to **Editor** > **Content Completion** > **XPath**.

The following options are available:

- **Enable content completion for XPath expressions** - Enables the *Content Completion Assistant* in XPath expressions that you enter in the `match`, `select`, and `test` XSL attributes.
  - **Include XPath functions** - When this option is selected, XPath functions are included in the content completion suggestions.
  - **Include XSLT functions** - When this option is selected, XSLT functions are included in the content completion suggestions.
  - **Include axes** - When this option is selected, XSLT axes are included in the content completion suggestions.
- **Show signatures of XSLT / XPath functions** - Makes the editor indicate the signature of the XPath function located at the cursor position in a tooltip. See the XPath Tooltip Helper section for more information.

XSD Preferences

Oxygen XML Editor plugin provides content completion assistance when you are writing XML Schema (XSD). To configure XSD preferences, open the **Preferences** dialog box and go to **Editor** > **Content Completion** > **XSD**. The option in this preferences page allows you to define additional elements to be suggested by the *Content Completion Assistant* in `xs:appinfo` elements (in addition to the elements defined in the XML Schema).

The following option is available:

When in "xs:appinfo" context, also include elements declared in the schema

You can choose between the following:

- **None** - The *Content Completion Assistant* offers only the XML Schema schema information.
- **ISO Schematron** - The *Content Completion Assistant* also includes ISO Schematron elements in `xs:appinfo`.
- **Schematron 1.5** - The *Content Completion Assistant*also includes Schematron 1.5 elements in `xs:appinfo`.
- **Other** - The *Content Completion Assistant* also includes elements from an XML Schema identified by a URL in `xs:appinfo` elements.

XSLT Preferences

XSLT stylesheets are often used to create output in XHTML or XSL-FO. In addition to suggesting content completion options for XSLT stylesheet elements, Oxygen XML Editor plugin can suggest elements from these vocabularies. To configure the XSLT content completion options, open the **Preferences** dialog box and go to **Editor** > **Content Completion** > **XSLT**.

The following options are available:

Include elements declared in the schema section

This section includes options in regards to detecting elements from the declared schema.

Automatically detect HTML or Formatting Objects

Detects if the output being generated is HTML or FO and provides content completion for those vocabularies. Oxygen XML Editor plugin analyzes the namespaces declared in the root element to find an appropriate schema.

If the detection fails, Oxygen XML Editor plugin uses one of the following options:

- **None** - The *Content Completion Assistant* suggests only XSLT elements.
- **HTML** - The *Content Completion Assistant* includes HTML elements, including HTML5 elements (such as `video`, `canvas`, etc.).
- **Formatting objects** - The *Content Completion Assistant* includes Formatting Objects (XSL-FO) elements as substitutes for `xsl:element`.
- **Custom schema** - If you want content completion hints for another output vocabulary, you can use this option to specify the path to the schema for that vocabulary. The supported schema types are DTD, XML Schema, RNG schema, or NVDL schema for inserting elements from the target language of the stylesheet.

Documentation schema section

This section specifies an additional schema that will be used for documenting XSL stylesheets. You can choose between the following:

- **Build-in schema** - Uses the built-in schema for documentation.
- **Custom schema** - Allows you to specify a custom schema for documentation. The supported schema types are XSD, RNG, RNC, DTD, and NVDL.

Custom Validation Engines Preferences

As the name implies, the **Custom Validation Engines** preferences page displays the list of custom validation engines than can be associated to a particular editor and used for validating documents. To access this page, open the **Preferences** dialog box and go to **Editor** > **Custom Validation Engines**.

If you want to add a new custom validation tool or edit the properties of an exiting one, you can use the **Custom Validator** dialog box displayed by pressing the **New** or **Edit** button.

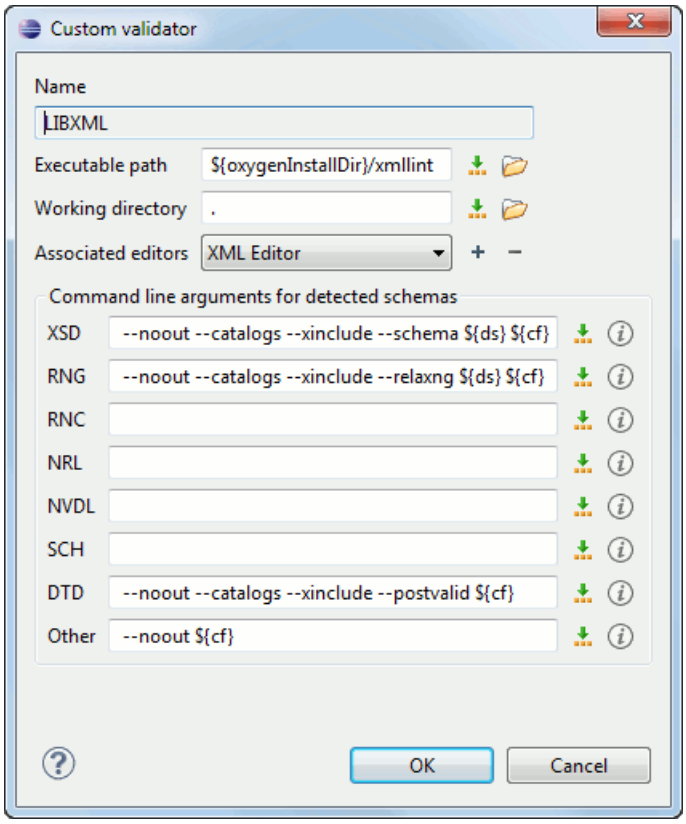


Figure 27: Custom Validator Dialog Box

The **Custom Validator** dialog box allows you to configure the following parameters:

Name

Name of the custom validation engine that will be displayed in the **Validation** toolbar drop-down menu.

Executable path

Path to the executable file of the custom validation tool. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Working directory

The working directory of the custom validation tool. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Associated editors

The editors that can perform validation with the external tool (XML editor, XSL editor, XSD editor, etc.)

Command line arguments for detected schemas

Command line arguments used in the commands that validate the currently edited file against various types of schema (W3C XML Schema, Relax NG full syntax, Relax NG compact syntax, NVDL, Schematron, DTD, etc.) The arguments can include any custom switch (such as -rng) and the following editor variables:

- **${cf}** - Current file as file path, that is the absolute file path of the current edited document.
- **${currentFileURL}** - Current file as URL, that is the absolute file path of the current edited document represented as URL.
- **${ds}** - The path of the detected schema as a local file path for the current validated XML document.
- **${dsu}** - The path of the detected schema as a URL for the current validated XML document.

Related Information:

Editor Variables on page 125

Increasing the Stack Size for Validation Engines

To prevent the appearance of a **StackOverflowException** error, use one of the following methods:

- Use the **com.oxygenxml.stack.size.validation.threads** property to increase the size of the stack for validation engines. The value of this property is specified in bytes. For example, to set a value of one megabyte specify 1x1024x1024=1048576.
- Increase the value of the **-Xss** parameter.

  Note: Increasing the value of the **-Xss** parameter affects all the threads of the application.

Document Checking Preferences

To configure the **Document Checking** (validation) options, open the **Preferences** dialog box and go to **Editor** > **Document Checking**. This page contains preferences for configuring how a document is checked for both well-formedness and validation errors.

The following options are available:

Maximum number of validation highlights

If a validation generates more errors than the number specified in this option, only the errors up to this number are highlighted in the editor panel and on the stripe that is displayed at the right side of the editor panel. This option applies to both automatic validation and manual validation.

Clear validation markers on close

If this option is selected, all the error markers added in the **Problems** view for that document are removed when the Oxygen XML Editor plugin plugin is closed.

Enable automatic validation

This causes the validation to be automatically executed in the background as the document is modified in Oxygen XML Editor plugin.

Delay after the last key event (s)

The period of keyboard inactivity before starting a new validation (in seconds).

Edit Modes Preferences

Oxygen XML Editor plugin lets you configure which edit mode a file is opened in the first time it is opened. This setting only applies the first time a file is opened. The current editing mode of each file is saved when the file is closed and restored the next time it is opened. To configure the options for editing modes, open the **Preferences** dialog box and go to **Editor** > **Edit Modes** .

Allow Document Type specific edit mode setting to override the general mode setting

If selected, the initial edit mode setting set in the **Document Type** configuration dialog box overrides the general edit mode setting from the table below.

Select the initial edit mode (page) for each editor

This table specifies the default editing mode that will be opened for each type of document when the **Allow Document Type specific edit mode setting to override the general mode setting** option is not selected. Use the **Edit** button to change the initial edit mode for each type of document (editor). The initial edit mode can be one of the following:

- **Text**
- **Author**
- **Grid**
- **Design** (available only for the XSD editor).

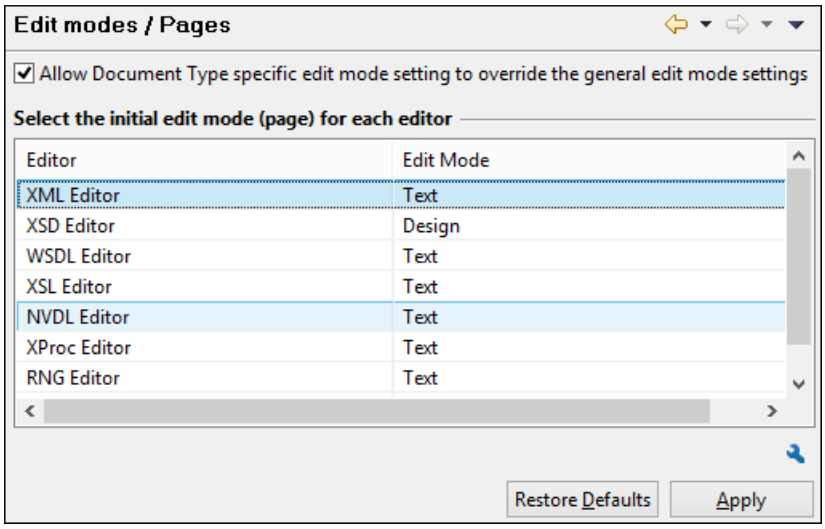


Figure 28: Edit Modes Preferences Page

Author Preferences

Oxygen XML Editor plugin provides an **Author** editing mode that provides a configurable graphical interface for editing XML documents. To configure the options for the **Author** mode, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author**.

The following options are available:

Author default background color

Sets the default background color of the **Author** editing mode. The `background-color` property set in the CSS file associated with the currently edited document overwrites this option.

Author default foreground color

Sets the default foreground color of the **Author** editing mode. The `color` property set in the CSS file associated with the current edited document overwrites this option.

Show XML comments

When this option is selected, XML comments are displayed in **Author** mode. Otherwise, they are hidden.

Show placeholders for empty elements

When this option is selected, placeholders are displayed for elements with no content to make them clearly visible. The placeholder is rendered as a light gray box and displays the element name.

Show processing instructions

When this option is selected, XML processing instructions are displayed in **Author** mode. Otherwise they are hidden.

Show Author layout messages

When this option is selected, all errors reported while rendering the document in **Author** mode are presented in the **Results** view at the bottom of the editor.

Show doctype

When this option is selected, the **doctype** declaration is displayed in **Author** mode. Otherwise it is hidden.

Display referenced content (entities, XInclude, DITA conref, etc.)

When selected, the references (such as entities, XInclude, DITA conrefs) also display the content of the resources they reference. If you toggle this option while editing, you need to reload the file for the modification to take effect.

Fast text layout

In certain cases (combinations of fonts and characters), the widths computed in the **Author** visual editing mode for lines of text may be larger than expected, leading to an incorrect visual layout. Deactivating this option will improve the computation quality for character widths in the visual editing mode, but it may hinder overall performance for very large documents.

Images Section

The following options in regards to images in **Author** mode are available in this section:

Auto-scale images wider than (pixels)

Sets the maximum width that an image will be displayed. Wider images will be scaled to fit.

Show very large images

When this option is selected, images larger than 6 megapixels are displayed in **Author** mode. Otherwise, they are not displayed.

Important: If you select this option and your document contains many such images, Oxygen XML Editor plugin may consume all available memory, throwing an **OutOfMemory error**. To resolve this, increase the available memory limit. and restart the application.

Tags Section

In this section you can configure the following options in regards to tags that are displayed in **Author** mode:

Tags display mode

Sets the default display mode for element tags presented in **Author** mode. You can choose between the following:

- **Full Tags with Attributes** - All XML tags are displayed, with attribute names and values, making it easier to transition from a Text-based editing to **Author** mode editing.
- **Full Tags** - All XML tags are displayed, but without attributes.
- **Block Tags** - The XML tags that enclose *block elements* are displayed in full. Compact tags (no element names) are displayed for *inline elements*.
- **Inline Tags** - The XML tags that enclose *inline elements* are displayed in full. *Block* tags are not displayed.
- **Partial Tags** - Partial tags (no names) are displayed for all elements.
- **No Tags** - No tags are displayed. This representation is as close as possible to a word-processor view.

Sort attributes alphabetically for "Full Tags with Attributes"

When selected, if you choose **Full Tags with Attributes** for the **Tags Display Mode**, the attributes will be displayed in alphabetical order. Otherwise, they are displayed in the order that they appear in the XML source code.

Tags background color

Sets the **Author** mode tags background color.

Tags foreground color

Sets the **Author** mode tags foreground color.

Tags font

Allows you to change the font used to display tags text in the **Author** visual editing mode. The *default* font is computed based on the setting of the **Author default font** option.

Compact tag layout

If this option is not selected, the **Author** mode displays the tags in a more decompressed layout, where block tags are displayed on separate lines.

Whitespaces Section

The following option is available in this section:

Foreground color

Sets the foreground color of the white spaces in the **Author** mode. To enable this option, open the **Preferences** dialog box , go to **General** > **Editors** > **Text Edtiors** and select **Show whitespaces characters**.

Serialization Section

In this section you can configure options in regards to the formatting and indenting that is applied when a document is saved in **Author** mode, or when switching the editing mode from **Author** to **Text**. The following options are available:

Format and indent

Use this option to specify what should be formatted and indented when you save a document (or switch from **Author** to **Text** mode). You can choose between the following two options:

Only the modified content

The **Save** operation only formats the nodes that were modified in the **Author** mode. The rest of the document preserves its original formatting.

Note: This option also applies to the *DITA maps* opened in the **DITA Maps Manager**.

The entire document

The **Save** operation applies the formatting to the entire document regardless of the nodes that were modified in **Author** mode.

Also apply the format and indent options that are set for Text mode

If this option is selected, the result of the **Format and indent** operation will be the same as when it is applied in **Text** editing mode. Thus, the content of the document is formatted by applying the **Format and Indent** rules from the **Editor/Format** and **Editor/Format/XML** preference pages. You can use the **Format and indent options** link to navigate to those options.

Compatibility with other tools

Use this option to control how line breaks are handled when a document is serialized. This will help to obtain better compatibility with other tools. You can choose one of the following:

- **None** - Choose this option if compatibility with other tools can be ignored.
- **Do not break lines, do not indent** - Choose this option to avoid breaking lines after element start or end tags and indenting will not be used.

  Note: New lines that are added by the user in elements where the `xml:space` attribute is set to `preserve` (such as `pre` elements in HTML, or `codeblock` elements in DITA) are still inserted. Also, selecting this option automatically disables the **Also apply the format and indent options that are set for Text mode** option, since the formatting from **Text** mode does not take the CSS styles into account.
- **Break lines only after elements displayed as blocks, do not indent** - Choose this option to instruct Oxygen XML Editor plugin to insert new lines only after elements that have a CSS display property set to anything other than `inline` or `none` (for example, `block`, `list-item`, `table`, etc.) and indenting will not be used. When selecting this option, the formatting is dictated by the CSS.

Note: New lines that are added by the user in elements where the `xml:space` attribute is set to `preserve` (such as `pre` elements in HTML, or `codeblock` elements in DITA) are still inserted. Also, selecting this option automatically disables the **Also apply the format and indent options that are set for Text mode** option, since the formatting from **Text** mode does not take the CSS styles into account.

Enable mouse-wheel zooming

If selected, you can use **Ctrl + MouseWheelForward (Command + MouseWheelForward on OS X)** to increase the editor font (zoom in) or **Ctrl + MouseWheelBackwards (Command + MouseWheelBackwards on OS X)** to decrease the editor font (zoom out). It is enabled by default on Windows and Linux, while it is disabled by default on Mac OS X, due to the way inertia affects the mouse wheel on this operating system.

Configure annotation tooltip

Click this link to open the Annotations Preferences on page 66 page.

For advanced Author configuration see the Document Type Association settings

Click this link to open the **Document Type Association** preferences page.

AutoCorrect Preferences

Oxygen XML Editor plugin includes an option to automatically correct misspelled words as you type in **Author** mode. To enable and configure this *AutoCorrect* feature, open the **Preferences** dialog box and go to **Editor** > **Edit Modes** > **Author** > **AutoCorrect**.

The following options are available:

Enable AutoCorrect

When selected (default state), while editing in **Author** mode, if you type anything that is listed in the **Replace** column of the Replacements table displayed in this preferences page, Oxygen XML Editor plugin will automatically replace it with the value listed in the **With** column.

Use additional suggestions from the spell checker

If selected, in addition to anything listed in the Replacements table displayed in this preferences page, Oxygen XML Editor plugin will also use suggestions from the Spell Checker to automatically correct misspelled words. Suggestions from the Spell Checker will only be used if the misspelled word is not found in the Replacements table.

Note: The *AutoCorrect* feature shares the same options configured in the **Language options** and **Ignore elements** sections in the **Spell Check** preferences page.

Spell Check options link

Use this link to navigate to the Spell Check Preferences page.

Replacements Table section

The *AutoCorrect* feature uses the Replacements table to automatically replace anything that is listed in the **Replace** column with the value listed in the **With** column for each language.

Replacements for language drop-down menu

You can specify the language for the Replacements table, and for each language, you can configure the items listed in the table. The language selected in this page is not the language that will be used by the *AutoCorrect* feature. It is simply the language for the Replacements table.

Replacements Table

You can double-click on cells in either column to edit the listed items. Use the **Add** button to insert new items and the **Remove** button to delete rows from the table.

Note: Any changes, additions, or deletions you make to this table are saved to a path that is specified in the **AutoCorrect Dictionaries** preferences page.

Smart quotes section

You can also choose to automatically convert double and single quotes to a quotation characters of your choice by using the following options in the **Smart quotes** section:

- **Replace "Single quotes"** - Replaces single quotes with the quotation symbols you select with the **Start quote** and **End quote** buttons.

- **Replace "Double quotes"** - Replaces double quotes with the quotation symbols you select with the **Start quote** and **End quote** buttons.

Note: These **Smart quotes** options are ignored for content inside any element listed in the **Ignore elements** section of the **Spell Check preferences page**.

Restore Defaults

Restores the options in this preferences page to their default values and **also deletes any changes you have made to the Replacements table**.

AutoCorrect Dictionaries Preferences

To set the Dictionaries preferences for the *AutoCorrect* feature, open the **Preferences** dialog box and go to **Editor** > **Edit Modes** > **Author** > **AutoCorrect** > **Dictionaries**. This page allows you to specify the location of the dictionaries that Oxygen XML Editor plugin uses for the *AutoCorrect* feature and the location for saving user-defined replacements.

The following options are available in this preferences page:

Dictionaries default folder

Displays the default location where the dictionaries that Oxygen XML Editor plugin uses for the *AutoCorrect* feature are stored.

Include dictionaries from

Selecting this option allows you to specify a location where you have stored *AutoCorrect* dictionaries that you want to include, along with the default ones.

Important: Consider the following notes in regards to this option:

- The *AutoCorrect* mechanism takes into account *AutoCorrect* dictionaries collected both from the default and custom locations and multiple dictionaries from the same language are merged (for example, `en_UK.dat` from the default location is merged with `en_US.dat` from a custom location).
- If you have a generic *AutoCorrect* dictionary file (one that just has a two letter language code for its file name, such as `en.dat`) saved in either the default or custom location, the other more specific dictionaries (for example, `en_UK.dat` and `en_US.dat`) will not be merged and the existing generic dictionary will simply be used instead.
- If the additional location contains a file with the same name as one from the default location, the file in the additional location takes precedence over the file from the default location.

How to add more dictionaries link

Use this link to open a topic in the Oxygen XML Editor plugin User Guide that explains how to add dictionaries for the *AutoCorrect* feature.

Save user-defined replacements in the following location

Specifies the target where added, edited, or deleted replacements are saved. By default, the target is the application preferences folder, but you can also choose a custom location.

Related Information:

Add Dictionaries for the AutoCorrect Feature on page 395

Cursor Navigation Preferences

Oxygen XML Editor plugin allows you to configure the appearance and behavior of the cursor in the **Author** mode editor. To set cursor navigation preferences, open the **Preferences** dialog box and go to **Author** > **Cursor Navigation**.

The following options are available:

Highlight elements near cursor

When this option is selected, the element containing the cursor is highlighted. You can use the color picker to choose the color of the highlight.

Show cursor position tooltip

Oxygen XML Editor plugin uses tool tips in **Author** mode to indicate the position of the cursor in the element structure of the underlying document. Depending on context, the tool tips may show the current element name or the names of the elements before and after the current cursor position.

Show location tooltip on mouse move

When this option is selected, Oxygen XML Editor plugin displays *Location Tooltips* when you are editing the document in certain tags display modes (**Inline Tags**, **Partial Tags**, **No Tags**) or when the mouse pointer is moved between *block elements*.

Quick up/down navigation

This option is deselected by default and this means that when you navigate using the up and down arrow keys in **Author** mode, the cursor is placed within each of the underlying XML elements between two blocks of text (the cursor changes to a horizontal line when it is between blocks of text). This allows you to easily insert elements and manage the structure of your XML content. However, if this option is selected, the cursor ignores the XML structure and jumps from one line of text to another, similar to how the cursor behaves in a word processor.

Quick navigation in tables

This option is selected by default and this means that when navigating between table cells with the arrow keys, the cursor jumps from one cell to another. If this option is not selected, the cursor navigates between XML nodes when navigating between table cells with the arrow keys.

Arrow keys move the cursor in the writing direction

This setting determines how the left and right arrow keys behave in **Author** mode for bidirectional (BIDI) text. When this option is selected (default value), the right arrow key advances the cursor in the reading direction and the left arrow moves it in the opposite direction. When this option is not selected, pressing the right arrow will simply move the cursor to the right (and the left arrow moves it to the left), regardless of the text direction.

MathML Preferences

Oxygen XML Editor plugin allows you to edit *MathML* equations and displays the results in a preview window. For a more specialized *MathML* editor, you can install Design Science *MathFlow*, which is a commercial product that requires a separate license.

To configure the *MathML* editor or to enter your *MathFlow* license information, open the **Preferences** dialog box and go to **Editor** > **Edit Modes/Pages** > **Author** > **MathML**.

You can configure the following options:

Equation minimum font size

The minimum size of the font used for rendering mathematical symbols when editing in the **Author** mode.

MathFlow installation directory

The installation folder for the *MathFlow* components product (*MathFlow* SDK).

MathFlow license file

The license file for the *MathFlow* components product (*MathFlow* SDK).

MathFlow preferred editor

A *MathML* formula can be edited in one of three editors of *MathFlow* components product (*MathFlow* SDK).

- **Structure Editor** (default selection) - Targets professional XML workflow users.
- **Style Editor** - Tailored to the needs of content authors.
- **Simple Editor** - Designed for applications where end-users can enter mathematical equations without prior training and only the meaning of the math matters.

Save special characters

Specifies how special characters are saved in the XML file.

- **As entity names** - Saves the characters in `&name;` format. It refers to a character by the name of the entity that has the desired character as its replacement text. For example, the Greek *Omega* character is saved as `Ω`.

- **As character entities** (default selection) - Saves the characters in a hexadecimal value, using the &#xNNN format. For example, the Greek *Omega* character is saved as Ω.
- **As character values** - Saves the characters as the actual symbol. For example, the Greek *Omega* character is saved as Ω.

More documentation is available on the Design Science *MathFlow* website.

Profiling/Conditional Text Preferences

Oxygen XML Editor plugin lets you configure how profiling and conditional text is displayed in **Author** mode. It has built-in support for the standard conditional text features of DITA and DocBook that you can customize for your own projects. You can also add conditional support for other XML vocabularies, including your custom vocabularies.

To configure **Profiling/Conditional Text** options, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.

Note: Note the following when configuring these settings:

- This preferences page is used to define how profiled elements are treated in **Author** mode. It does not create profiling or conditional text attributes or values in the underlying XML vocabulary. It just changes how the editor displays them.
- This preferences page should be used for profiling / conditional text elements only. To change how other types of attributes are displayed in the text, use a CSS file.
- If you are using the DITA XML vocabulary and a DITA *subject scheme map* is defined in the *root map* of your document, it will be used in place of anything defined using this dialog box.

This preferences page contains the following options and sections:

Import from DITAVAL

This button allows you to import profiling attributes from DITAVAL files. You can merge these new profiling attributes with the existing ones, or replace them completely. If the imported attributes conflict with the existing ones, Oxygen XML Editor plugin displays a dialog box that contains two tables. The first one previews the imported attributes and the second one previews the already defined attributes. You can choose to either keep the existing attributes or replace them with the imported ones.

Note: When importing profiling attributes from DITAVAL files, Oxygen XML Editor plugin automatically creates condition sets based on these files.

Profiling Attributes section

Allows you to specify a set of allowable values for each profiling or conditional attribute. You can use the **New** button at the bottom of the table to add profiling attributes, the **Edit** button to edit existing ones, or the **Delete** button to delete entries from the table. Use the **Up** and **Down** buttons to change the priority of the entries. If you have multiple entries with identical names that match the same document type, Oxygen XML Editor plugin uses the one that is positioned highest in the table.

Report invalid profiling attribute values (DITA only)

If selected, it means the following:

- In DITA, the automatic validation will display a warning when a value that is not defined is found in the document.
- In the DITA **Validate and Check for Completeness** dialog box, the **Report attributes and values that conflict with profiling preferences** option is not displayed. This means that the validation will behave the same as if that option was selected and it will always report such values.

Allow contributing extra profiling attribute values

This option is selected by default, which means that users are allowed to add values that are not defined in preferences to profiling attributes. If a user inserts such a value, when invoking the **Edit Profiling Attributes** action from the contextual menu in **Author** mode (or for DITA topics, the **Edit Properties** action in the **DITA Maps Manager**), the **Profiling Values Conflict** dialog box will appear and it includes an **Add these values to the configuration** action that will automatically add the new value to the particular

profiling attribute. If deselected, Oxygen XML Editor plugin behaves as if the **Preserve the configuration** option has been chose in the **Profiling Values Conflict** dialog box and that dialog box will never appear.

Configure profiling colors and styles link

Use this link to open the profiling **Colors and Styles** preference page.

Profiling Condition Sets section

Allows you to specify a specific set of profiling attributes to be used to specify a particular build configuration for your content. You can use the **New** button at the bottom of the table to add condition sets, the **Edit** button to edit existing ones, or the **Delete** button to delete entries from the table. Use the **Up** and **Down** buttons to change the priority of the entries. If you have multiple entries with identical names that match the same document type, Oxygen XML Editor plugin uses the one that is positioned highest in the table.

Show excluded content

Toggles whether or not the **Show Excluded Content** option in the **Profiling / Conditional Text** drop-down menu is enabled by default.

Attributes Rendering Preferences

Oxygen XML Editor plugin lets you display the profiling attributes applied to your content in the **Author** mode editor. To configure how the profiling attributes appear, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text** > **Attributes Rendering**. When the **Show Profiling Attributes** option is selected, the **Author** mode displays conditional text markers at the end of conditional text blocks. Use the options in this page to customize the rendering of these text markers.

The following options are available:

Show profiling attributes

Toggles whether or not the **Show Profiling Attributes** option in the **Profiling / Conditional Text** drop-down menu is enabled by default.

Show profiling attribute name

If selected, the names of the profiling attributes are displayed with their values. If unchecked, only the values are displayed.

Background color

Sets the background color used to display the profiling attributes.

Attribute name foreground color

Sets the foreground color used to display the names of the profiling attributes.

Attribute values foreground color

Sets the foreground color used to display values of the profiling attributes.

Border color

Sets the color of the border of the block that displays the profiling attributes.

Colors and Styles Preferences

Oxygen XML Editor plugin lets you set the colors and styles used to display profiling / conditional text in the **Author** mode editor. To set Colors and Styles preferences, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text** > **Colors and Styles**.

The preference page includes the following options and sections:

Show profiling colors and styles

Toggles whether or not the **Show Profiling Colors and Styles** option in the **Profiling / Conditional Text** drop-down menu is enabled by default.

Import from DITAVAL

Allows you to import profiling styles from `.ditaval` files. You can merge these new profiling styles with the existing ones, or replace them completely. If the imported styles conflict with the existing ones, Oxygen XML Editor plugin displays a dialog box containing two tables: the first one previews the imported styles and the

second one previews the already defined styles. You can choose to either keep the existing styles or replace them with the imported ones.

Profiling Colors and Styles Table

You can use buttons below this table to set specific colors and styles for the listed profiling attribute values. The table includes two categories:

- **Defined attributes values** - Contains the styles for profiling attribute values defined in the **Profiling / Conditional Text** preferences page. Each profiling attribute value has an associated style. To ease the process of customizing styles, the **Defined attributes values** category contains by default the list of empty styles. All you have to do is to adjust the colors and decorations, thus skipping the process of manually defining the association rules (document type, attribute name and value). This is the reason why a style from this category can only be reset, not deleted.
- **Other** - This category contains styles for attribute values that are not marked as profiling values, in the **Profiling / Conditional Text** preferences page. In this category are listed:
  - All the styles that were defined in other projects (with other profiling attribute value sets).
  - All the styles set for the profiling attributes defined in a *subject scheme map*.

Automatic styling button

If you click this button, Oxygen XML Editor plugin will apply automatic styling to the profiling attribute values that do not have a style defined.

New button

Opens the **Add Profiling Style** dialog box that allows you to associate a set of coloring and styling properties to a profiling value.

Note: You can define a default style for a specific attribute by setting the **Attribute value** field to <ANY>. This style is applied for attribute values that do not have a specific style associated with it.

Edit button

Open the **Edit Profiling Style** dialog box that allows you to edit the colors or style for an existing profiling value. You can also double-click the value to open this dialog box.

Clear style button

Resets the style for the selected value to its default setting (no color or decoration).

Delete button

Delete the selected style from the **Other** category.

Related Information:

Filtering Profiling Values with a DITAVAL File on page 1605
Styling the Rendering of Profiled Content Using a DITAVAL File on page 1607

Review Preferences

Oxygen XML Editor plugin allows you to add review comments and track changes in your documents. The **Review** preferences page allows you to control how the Oxygen XML Editor plugin review features work. To configure these options, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Review**.

The available options are as follows:

Author

Specifies the name to be attached to all comments and to changes made while **Track Changes** is active. By default, Oxygen XML Editor plugin uses the system user name.

Track Changes section (applies for all authors)

Initial State

Specifies whether or not the *Track Changes* feature is enabled when you open a document. You may have the *Track Changes* feature enabled in some documents and disabled in others, or you can choose to always enable or disable the feature for all documents. You can choose between the following options:

- **Stored in document** - The current state of the *Track Changes* feature is stored in the document itself, meaning that it is on or off depending on the state the last time the document was saved. This is the

recommended setting when multiple authors work on the same set of documents as it will make it obvious to other authors that changes have been made in the document.
- **Always On** - The *Track Changes* feature is always on when you open a document. You can turn it off for an opened document, but it will be turned on for the next document you open.
- **Always Off** - The *Track Changes* feature is always off when you open a document. You can turn it on for an opened document, but it will be turned off for the next document you open.

Display changed lines marker

A changed line maker is a vertical line on the left side of the editor window indicating where changes have been made in the document. To hide the changed lines marker, deselect this option.

Inserted content color

When the *Track Changes* feature is on, the newly inserted content is highlighted with an *insertion marker* that uses a color to adjust the following display properties of the inserted content: *foreground*, *background*, and *underline*. This section allows you to customize the following color options:

- **Automatic** - If this option is selected, Oxygen XML Editor plugin automatically assigns a color to each user who inserted content in the current document. The colors are picked from the **Colors for automatic assignment** list, the priority being established by the type of change (deletion, insertion, or comment) and in the order that you see in the list.
- **Fixed** - If this option is selected, Oxygen XML Editor plugin uses the specified color for all insertion markers, regardless of who the author is.
- **Use same color for text foreground** - If selected, Oxygen XML Editor plugin uses the color defined above (**Automatic** or **Fixed**) to render the foreground of the inserted content.
- **Use same color for background** - If selected, Oxygen XML Editor plugin uses the color defined above (**Automatic** or **Fixed**) to render the background of the inserted content. A slider control allows you to set the transparency level of the background.

Deleted content color

When the *Track Changes* feature is on, the deleted content is highlighted with a *deletion marker* that uses a color to adjust the following display properties of the deleted content: *foreground*, *background*, and *strikethrough*. This section allows you to customize the following color options:

- **Automatic** - If this option is selected, Oxygen XML Editor plugin automatically assigns a color to each user who deleted content in the current document. The colors are picked from the **Colors for automatic assignment** list, the priority being established by the type of change (deletion, insertion, or comment) and in the order that you see in the list.
- **Fixed** - If this option is selected, Oxygen XML Editor plugin uses the specified color for all deletion markers, regardless of who the author is.
- **Use same color for text foreground** - If selected, Oxygen XML Editor plugin uses the color defined above (**Automatic** or **Fixed**) to render the foreground of the deleted content.
- **Use same color for background** - If selected, Oxygen XML Editor plugin uses the color defined above (**Automatic** or **Fixed**) to render the background of the deleted content. A slider control allows you to set the transparency level of the background.

Comments color section (applies for all authors)

Sets the background color of the text that is commented on. The options are:

- **Automatic** - If this option is selected, Oxygen XML Editor plugin automatically assigns a color to each user who adds a comment in the current document. The colors are picked from the **Colors for automatic assignment** list, the priority being established by the type of change (deletion, insertion, or comment) and in the order that you see in the list.
- **Fixed** - If this option is selected, Oxygen XML Editor plugin uses the specified color for all changes, regardless of who the author is. A slider control allows you to set the transparency level of the background.

Colors for automatic assignment list

These are the colors that will be automatically assigned for tracked insertion changes, tracked deletion changes, and comments if the **Automatic** option is selected in any of the sections in this preferences page.

The colors are assigned in the order that you see in this list. You can use the **Add**, **Edit**, or **Remove** buttons to modify the list of colors.

Related Information:

Reviewing Documents on page 472

Callouts Preferences

Oxygen XML Editor plugin can display *callouts* for review items such as comments and *tracked changes*. To customize options for review callouts, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Review** > **Callouts**.

The available options are as follows:

Show Review Callouts section

Comments

If selected, callouts are displayed for comments, including comments that are added to *tracked changes*. This option is selected by default.

Track Changes deletions

If selected, callouts are displayed for *tracked change* deletions and the following additional option becomes available:

Show deleted content in callout

If selected, the deleted content is also displayed in the callout.

Track Changes insertions

If selected, callouts are displayed for *tracked change* insertions and the following additional option becomes available:

Show inserted content in callout

If selected, the inserted content is also displayed in the callout.

Rendering section

Show review time

When selected, timestamp information is displayed in callouts.

Show all connecting lines

When selected, lines are shown that connect the callout to the location of the change.

Initial width (px)

Specifies the initial width of the callouts each time the document is opened. The default is 250 pixels.

Text lines count limit

Specifies the maximum number of lines to be shown in the callouts. The default is 5 lines. Note that this does not limit the number of lines in the actual comment. It only limits the number of lines shown without opening or editing it. To see the full comment, right-click on the callout and select **Edit Comment** or **Show Comment**.

Schema Aware Preferences

Oxygen XML Editor plugin can use the schema of your XML language to improve the way the **Author** mode editor handles your content. To configure the **Schema Aware** options, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Schema Aware**.

The following options are available:

Schema aware normalization, format, and indent

When you open or save a document in **Author** mode, white space is normalized using the `display` property of the current CSS stylesheet and the values of the settings for **Preserve space elements**, **Default space elements**, and **Mixed content elements**. When this option is selected, the schema will also be used to normalize white space, based on the content model (*element-only*, *simple-content*, or *mixed*) . Note that the schema information takes precedence.

Indent blocks-only content

To avoid accidentally introducing inappropriate white space around *inline elements*, Oxygen XML Editor plugin does not normally apply indenting to the source of an element with mixed content. If this option is selected, Oxygen XML Editor plugin will apply indenting to the source of mixed content elements that only contain *block elements*.

Schema Aware Editing

The options in this section determine how Oxygen XML Editor plugin will use the schema of a document to control the behavior of the **Author** mode.

- **On** - Enables all schema-aware editing options.
- **Off** - Disables all schema-aware editing options.
- **Custom** - Allows you to select custom schema-aware editing options from the following:

Schema Aware Actions section

Delete element tags with backspace and delete

Controls what happens when you attempt to delete an element tag. The two options are:

- **Smart delete** - If deleting the tag would make the document invalid, Oxygen XML Editor plugin will attempt to make the document valid by unwrapping the current element or by appending it to an adjacent element where the result would be valid. For instance, if you delete a bold tag, the content can be unwrapped and become part of the surrounding paragraph, but if you delete a list item tag, the list item content cannot become part of the list container. However, the content could be appended to a preceding list items.
- **Reject action when its result is invalid** - A deletion that would leave the document in an invalid state is rejected.

Paste and Drag and Drop

Controls the behavior for paste and drag and drop actions. Available options are:

- **Smart paste and drag and drop** - If the content inserted by a paste or drop action is not valid at the cursor position, according to the schema, Oxygen XML Editor plugin tries to find an appropriate insert position. The possibilities include:
  - Creating a sibling element that can accept the content (for example, if you tried to paste a paragraph into an existing paragraph).
  - Inserting the content into a parent or child element (for example, if you tried to paste a list item into an existing list item, or into the space above or below and existing list).
  - Inserting the content into an ancestor element where it would be valid.
- **Reject action when its result is invalid** - If selected, Oxygen XML Editor plugin will not let you paste content into a position where it would be invalid.

Typing

Controls the behavior that takes place when typing. Available options are:

- **Smart typing** - If typed characters are not allowed in the element at the cursor position, but the previous element does allow text, then a similar element will be inserted, along with your content.
- **Reject action when its result is invalid** - If selected, and the result of the typing action is invalid, the action will not be performed.

Content Completion

Controls the behavior that takes place when inserting elements using the *Content Completion Assistant* in **Author** mode. Available options are:

- **Press ENTER to show available content completion proposals** - If selected, pressing **Enter** will open the *Content Completion Assistant*. If deselected, there are three possibilities:
  - The current element will be split (if possible).
  - A new element with the same name will be inserted (if possible).
  - Otherwise, a new paragraph will be inserted.

- **Show all possible elements in the content completion list** - If selected, the content completion list will show all the elements in the schema, even those that cannot be entered validly at the current position. If you select an element that is not valid at the current position, Oxygen XML Editor plugin will attempt to find a valid location to insert it and may present you with several options.
- **Allow only insertion of valid elements and attributes** - If selected, you can only select elements in the content completion list that are valid (according to the schema) at the current position.
- **Allow only insertion of valid attribute values** - If selected, you cannot enter an attribute value that is not valid (according to the schema) in the **Attributes** view or **In-place Attributes Editor**. If the attribute has a choice of values, you can select a possible value from a drop-down list in the combo box, but you cannot enter a value manually.

Warn on invalid content when performing action

A warning message will be displayed when performing an action that will result in invalid content. Available options are:

- **Delete Element Tags** - If selected, a warning message will be displayed if the Delete Element Tags action will result in an invalid document. You will be asked to confirm the deletion.
- **Join Elements** - If selected, a warning message will be displayed if the Join Elements action will result in an invalid document. You will be asked to confirm the join.

Automatically apply the best schema-aware insertion operation

If selected, Oxygen XML Editor plugin automatically uses what it considers to be the best insertion solution, when there is an attempt to insert content that is not valid in a specific context. If not selected, Oxygen XML Editor plugin will ask the user to choose from a list of proposed solutions.

Convert external content on paste

If selected, the *Smart Paste* feature is enabled when external content is pasted in **Author** mode.

Convert even when pasting inside space-preserve elements

If selected, the *Smart Paste* feature will be used even when external content is pasted inside a *space-preserve* element (such as a `codeblock`).

Convert pasted URLs to links

If selected, when a URL is pasted into **Author** mode, a link will be inserted (the type of link depends on the type of document). For example, in DITA documents, an `xref` is inserted.

Related Information:

Smart Paste Mechanism on page 457
Customizing Smart Paste Support on page 1271

Grid Preferences

Oxygen XML Editor plugin provides a **Grid** view of an XML document. To configure the **Grid** options, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Grid**.

The following options are available:

Compact representation

If selected, the *compact representation* of the grid is used: a child element is displayed beside the parent element. In the *non-compact representation*, a child element is nested below the parent.

Format and indent when passing from grid to text or on save

If selected, the content of the document is formatted and indented each time you switch from the **Grid** view to the **Text** view.

Default column width (characters)

Sets the default width (in characters) of a table column of the grid. A column may contain the following:

- Element names
- Element text content
- Attribute names
- Attribute values

If the total width of the grid structure is too large you can resize any column by dragging the column margins with the mouse pointer, but the change is not persistent. To make it persistent, set the new column width with this option.

Active cell color

Allows you to set the background color for the *active cell* of the grid. The keyboard input always goes to the *active cell* and the selection always contains it.

Selection color

Allows you to set the background color for the selected cells of the grid except the *active cell*.

Border color

Allows you to set the color used for the lines that separate the grid cells.

Background color

Allows you to set the background color of grid cells that are not selected.

Foreground color

Allows you to set the text color of the information displayed in the grid cells.

Row header colors

Background color

Allows you to set the background color of row headers that are not selected.

Active cell color

Allows you to set the background color of the row header cell that is currently active.

Selection color

Allows you to set the background color of the header cells corresponding to the currently selected rows.

Column header colors

The column headers are painted with two color gradients, one for the upper 1/3 part of the header and the other for the lower 2/3 part. The start and end colors of the first gradient are set with the first two color buttons. The start and end colors of the second gradient are set with the last two color buttons.

Background color

Allows you to set the background color of column headers that are not selected.

Active cell color

Allows you to set the background color of the column header cell that is currently active.

Selection color

Allows you to set the background color of the header cells corresponding to the currently selected columns.

Schema Design Preferences

Oxygen XML Editor plugin provides a graphical schema design editor to make editing XML Schema easier. To configure the **Schema Design** options, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Schema Design**.

The following options are available in the **Schema Design** preferences page:

Show annotation in the diagram

When selected, Oxygen XML Editor plugin displays the content of `xs:documentation` elements in schema diagrams.

When trying to edit components from another schema

The schema diagram editor will combine schemas imported by the current schema file into a single schema diagram. You can choose what happens if you try to edit a component from an imported schema. The options are:

- **Always go to its definition** - Oxygen XML Editor plugin opens the imported schema file so that you can edit it.
- **Never go to its definition** - The imported schema file is not opened and the component cannot be edited in place.

- **Always ask** - Oxygen XML Editor plugin asks if you want to open the imported schema file.

Properties Preferences

Oxygen XML Editor plugin lets you control which properties to display for XML Schema components in the XML Schema **Design** view. To configure the schema design properties displayed, open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Schema Design** > **Properties**.

This preferences page contains the following:

Show additional properties in the diagram

If this option is selected, the properties selected in the property table are shown in the XML Schema **Design** mode. This option is selected by default.

Properties Table

Show

Use this column in the table to select the properties that you want to be displayed in the XML Schema **Design** mode.

Only if specified

Use this column to select if you want the property to be displayed only if it is defined in the schema.

Text Diagram Preferences

For certain XML languages, Oxygen XML Editor plugin provides a diagram view as part of the text mode editor. To configure the **Diagram** preferences, open the **Preferences** dialog box and go to **Editor** > **Edit modes / Pages** > **Text Diagram**.

The following options are available in this preference page:

Show Full Model XML Schema diagram

When this option is selected, the **Text** mode editor for XML Schemas includes a split screen view that shows a diagram of the schema structure. This is useful for seeing the effects of schema changes you make. For editing a the schema using a diagram instead of text, use the schema **Design** view.

Note: When handling very large schemas, displaying the schema diagram might affect the performance of your system. In such cases, disabling the schema diagram view improves the speed of navigation through the edited schema.

Enable Relax NG diagram and related views

Enables the Relax NG schema diagram and synchronization with the related views (**Attributes**, **Model**, **Elements**, **Outline**).

Show Relax NG diagram

Displays the Relax NG schema diagram in the split screen views (**Full Model View** and **Logical Model View**).

Enable NVDL diagram and related views

Enables the NVDL schema diagram and synchronization with the related views (**Attributes**, **Model**, **Elements**, **Outline**).

Show NVDL diagram

Displays the NVDL schema diagram in the split screen views (**Full Model View** and **Logical Model View**).

Location relative to editor

Allows you to specify the location of the schema diagram panel relative to the diagram **Text** editor.

Show/Hide Annotations link

Use this link to navigate to the **Schema Design** preferences page where you can choose to show or hide annotations in schema diagrams.

Format Preferences

This preferences page contains various formatting options that influence editing and formatting in both the **Text** and **Author** editing modes. To control additional options specifically for the **Author** mode editor, see Whitespace Handling in Author Mode on page 448.

Note: These settings apply to the formatting of source documents. The formatting of output documents is determined by the transformation scenarios that create them.

To configure the **Format** options, open the **Preferences** dialog box and go to **Editor** > **Format**.

The following options are available:

Detect indent on open

If selected, Oxygen XML Editor plugin detects how a document is indented when it is opened. Oxygen XML Editor plugin uses a heuristic method of detection by computing a weighted average indent value from the initial document content. You can deselect this setting if the detected value does not work for your particular case and you want to use a fixed-size indent for all the edited documents. If this option is selected, Oxygen XML Editor plugin detects the following:

- When TAB characters are used to indent content, the size of the TAB characters is used for the indent size.
- Otherwise, the detected size of SPACE characters is used for the indent size.

Tip: If you want to minimize the formatting differences created by the **Format and Indent** operation in a document edited in the **Text** edited mode, make sure that both the **Detect indent on open** and **Detect line width on open** options are selected.

Use zero-indent, if detected

By default, if no indent was detected in the document, the fixed-size indent is used. Select this option if all your document have no indentation and you want to keep them that way.

Indent with tabs

If selected, indents are created using TAB characters. If unchecked, lines are indented using space characters. Selecting this option automatically disables the **Detect indent on open** option.

Indent size

The meaning of this setting depends on the following:

- If the **Detect indent on open** option is selected and TAB characters are detected at the beginning of the line, the *indent size* is the width of a TAB character. Otherwise, the *indent size* value is ignored and Oxygen XML Editor plugin uses the number of detected SPACE characters.
- If the **Indent with tabs** option is selected, the *indent size* is the width of a TAB character.
- If neither of these options are selected, the *indent size* is the number of SPACE characters used for indenting the text lines.

For additional information about changing the *indent size*, see Setting an Indent Size to Zero on page 427.

For information about when this setting is used, see Where Indent Size and Line Width Settings are Used in Oxygen XML Editor plugin on page 86.

Indent on enter

If selected, when you press `Enter` to insert a line break in the **Text** editing mode, an indentation will be added to the new line.

Enable smart enter

If selected, when you press the `Enter` key between a start and an end XML tag in the **Text** editing mode, the cursor is placed in an indented position on the empty line formed between the start and end tag.

Format and indent the document on open

If selected, an XML document is formatted and indented before opening it in Oxygen XML Editor plugin.

Note: Some specialized types of XML documents do not benefit from this feature, including Relax NG, XSD, XSL, and Ant. However, the feature is available for some non-XML types of documents, such as CSS and JSON.

Detect line width on open

If selected, Oxygen XML Editor plugin automatically detects the line width when the document is opened.

Hard line wrap (Limit to "Line width - Format and Indent")

If selected, when typing content in the **Text** editing mode and the maximum line width is reached, a line break is automatically inserted.

Line width - Format and Indent

Defines the number of characters after which the **Format and Indent** (pretty-print) action performs hard line-wrapping. For example, if set to 100, after a **Format and Indent** action, the longest line will have a maximum of 100 characters.

Note: To avoid having an indent that is longer than the line width setting and without having sufficient space available for the text content, the indent limit is actually set at half the value of the **Line width - Format and Indent** setting. The remaining space is reserved for text.

For information about when this setting is used, see Where Indent Size and Line Width Settings are Used in Oxygen XML Editor.

Clear undo buffer before Format and Indent

The **Format and Indent** operation can be *undone*, but if used intensively, a considerable amount of the memory allocated for Oxygen XML Editor plugin will be used for storing the undo states. If this option is selected, Oxygen XML Editor plugin empties the undo buffer before doing a **Format and Indent** operation. This means you will not be able to undo any changes you made before the format and indent operation. Select this option if you encounter out of memory problems (**OutOfMemoryError**) when performing the **Format and Indent** operation.

Where Indent Size and Line Width Settings are Used in Oxygen XML Editor plugin

The values set in the **Indent Size** and **Line Width - Format and Indent** options are used in various places in the application, including the following:

- When the **Format and Indent** action is used in the **Text** editing mode.
- When you press ENTER to break a line in the **Text** editing mode.
- When the **Hard line wrap (Limit to "Line width - Format and Indent")** option is selected and the maximum line width is reached while editing in the **Text** mode.
- When the XML is serialized by saving content in the **Author** editing mode.

For more information about the formatting options offered by Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/1plmdN0Cfso

CSS Preferences

Oxygen XML Editor plugin can format and indent your CSS files. To configure the **CSS** formatting options, open the **Preferences** dialog box and go to **Editor** > **Format** > **CSS**.

The following options control how your CSS files are formatted and indented:

Class body on new line

If selected, the *class* body (including the curly brackets) is placed on a new line. This option is not selected by default.

Indent class content

When selected (default state), the *class* content is indented.

Add space before the value of a CSS property

When selected (default state), whitespaces are added between the : (colon) and the value of a style property.

Add new line between classes

If selected, an empty line is added between two classes. This option is not selected by default.

Preserve empty lines

When selected (default state), the empty lines from the CSS content are preserved.

Allow formatting embedded CSS

When selected (default state), CSS content that is embedded in XML is also formatted when the XML content is formatted.

JavaScript Preferences

To configure the **JavaScript** format options, open the **Preferences** dialog box and go to **Editor** > **Format** > **JavaScript**.

The following options control the behavior of the **Format and Indent** action:

- **Start curly brace on new line** - Opening curly braces start on a new line.
- **Preserve empty lines** - Empty lines in the JavaScript code are preserved. This option is selected by default.
- **Allow formatting embedded JavaScript** - Applied only to XHTML documents, this option allows Oxygen XML Editor plugin to format embedded JavaScript code, taking precedence over the Schema aware format and indent option. This option is selected by default.

XML Preferences

To configure the **XML** Formatting options, open the **Preferences** dialog box and go to **Editor** > **Format** > **XML**.

The following options are available:

Format and Indent Section

This section includes the following drop-down boxes:

Preserve empty lines

The **Format and Indent** operation preserves all empty lines found in the document.

Preserve text as it is

The **Format and Indent** operation preserves text content as it is, without removing or adding any white space.

Preserve line breaks in attributes

Line breaks found in attribute values are preserved.

Note: When this option is selected, the **Break long attributes** option is automatically disabled.

Break long attributes

The **Format and Indent** operation breaks long attribute values.

Indent inline elements

The *inline elements* are indented on separate lines if they are preceded by white spaces and they follow another element start or end tag. For example:

Original XML:

```
<root>
  text <parent> <child></child> </parent>
</root>
```

Indent inline elements selected:

```
<root> text <parent>
    <child/>
  </parent>
</root>
```

Indent inline elements not selected:

```
<root> text <parent> <child/> </parent> </root>
```

Expand empty elements

If not selected (default), the **Format and Indent** operation results in an empty XML element being serialized in a compact form (`<a atr1="v1" />`). If selected, the same operation results in empty XML elements being serialized in expanded form (for example, `<a atr1="v1"></a>`). However, if the **Schema aware normalization, format, and indent** option in the **Schema-Aware** preferences page is enabled, Oxygen XML Editor plugin will use information from the associated schema and avoid expanding tags for elements that are defined as *empty* in the schema (therefore, text or other elements are not allowed inside them).

Sort attributes

The **Format and Indent** operation sorts the attributes of an element lexicographically.

Add space before slash in empty elements

Inserts a space character before the trailing / and > of empty elements.

Break line before an attribute name

The **Format and Indent** operation breaks the line before the attribute name.

Element Spacing Section

This section controls how the application handles whitespaces found in XML content. You can **Add** or **Remove** element names or simplified XPath expressions in the various tabs.

The XPath expressions can accept multiple attribute conditions and inside each condition you can use *AND/OR* boolean operators and parentheses to override the priority.

You can use one or more of the following attribute conditions (default attribute values are not taken into account):

- *element[@attr]* - Matches all instances of the specified element that include the specified attribute.
- *element[not(@attr)]* - Matches all instances of the specified element that do not include the specified attribute.
- *element[@attr = "value"]* - Matches all instances of the specified element that include the specified attribute with the given value.
- *element[@attr != "value"]* - Matches all instances of the specified element that include the specified attribute and its value is different than the one given.

Example: The following is an example of how you could use multiple boolean operators and parentheses inside an attribute condition:

```
*[@a and @b or @c and @d]
*[@a and (@b or @c) and @d]
```

The following are just examples of how simplified XPath expressions might look like:

- `elementName`
- `//elementName`
- `/elementName1/elementName2/elementName3`
- `//xs:localName` Note: The namespace prefixes (such as `xs`) are treated as part of the element name without taking its binding to a namespace into account.
- `//xs:documentation[@lang="en"]`

The tabs are as follows:

Preserve space

List of elements for which the **Format and Indent** operation preserves the whitespaces (such as blanks, tabs, and newlines).

Default space

List of elements for which the content is normalized (multiple contiguous whitespaces are replaced by a single space), before applying the **Format and Indent** operation.

Mixed content

The elements from this list are treated as mixed content when applying the **Format and Indent** operation. The lines are split only when whitespaces are encountered.

Line break

List of elements for which line breaks will be inserted, regardless of their content. You can choose to break the line *before* the element, *after*, or both.

Schema aware format and indent

The **Format and Indent** operation takes the schema information into account with regards to the *space preserve*, *mixed*, or *element only* properties of an element.

Indent Section

Includes the following options:

Indent (when typing) in preserve space elements

Normally, the *Preserve space* elements (identified by the `xml:space` attribute set to `preserve` or by their presence in the **Preserve space** tab of the **Element Spacing** list) are ignored by the **Format and Indent** operation. When this option is selected and you edit one of these elements, its content is formatted.

Indent on paste - sections with number of lines less than 300

When you paste a chunk of text that has fewer than 300 lines, the inserted content is indented. To keep the original indent style of the document you copy content from, deselect this option.

Whitespaces Preferences

When Oxygen XML Editor plugin formats and indents XML documents, a whitespace normalization process is applied, thus replacing whitespace sequences with single space characters. Oxygen XML Editor plugin allows you to configure which Unicode characters are treated as spaces during the normalization process.

To configure the **Whitespace** preferences, open the **Preferences** dialog box and go to **Editor** > **Format** > **XML** > **Whitespaces**.

This table lists the Unicode whitespace characters. Select any that you want to have treated as whitespace when formatting and indenting an XML document.

The whitespaces are normalized when:

- The **Format and Indent** action is applied on an XML document.
- You switch from **Text** mode to **Author** mode.
- You switch from **Author** mode to **Text** mode.

Note: The whitespace normalization process replaces any sequence of characters declared as whitespaces in the **Whitespaces** table with a single space character (`U+0020`). If you want to be sure that a certain whitespace character will not be removed in the normalization process, deselect it in the **Whitespaces** table.

Important: The characters with the codes `U+0009` (TAB), `U+000A` (LF), `U+000D` (CR) and `U+0020` (SPACE) are always considered to be whitespace characters and cannot be deselected.

XPath Preferences

To configure the **XPath** Formatting options, open the **Preferences** dialog box and go to **Editor** > **Format** > **XPath**.

The following option is available:

- **Format XPath code embedded in XSLT, XSD and Schematron files** - If selected, the **Format and Indent** action applied on an XSD, XSLT, or Schematron document will perform an XPath-specific formatting on the values of the attributes that accept XPath expressions.

  Note: For XSLT documents, the formatting is not applied to *attribute value templates*.

XQuery Preferences

To configure the **XQuery** Formatting options, open the **Preferences** dialog box and go to **Editor** > **Format** > **XQuery**.

The following options are available:

- **Preserve line breaks** - All initial line breaks are preserved.
- **Break line before an attribute name** - Each attribute of an XML element is written on a new line and properly indented.

Mark Occurrences Preferences

This preferences page specifies which types of files will have the Highlight IDs Occurrences feature activated. To configure these options, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**:

The following options are available in this preferences page:

Highlight component occurrences in the current file for:

- **XML files** - Activates the Highlight IDs Occurrences feature in XML files.
- **XSLT files** - Activates the Highlight Component Occurrences feature in XSLT files.

- **XML Schema files** - Activates the Highlight Component Occurrences feature in XSD files.
- **WSDL files** - Activates the Highlight Component Occurrences feature in WSDL files.
- **RNG files** - Activates the highlight component occurrences feature in RNG files.
- **Schematron files** - Activates the Highlight Component Occurrences feature in Schematron files.

Open/Save Preferences

Oxygen XML Editor plugin lets you control how files are opened and saved. To configure the options for opening and saving documents, open the **Preferences** dialog box and go to **Editor** > **Open/Save**.

The following options are available:

Open section

Format document when longest line exceeds

Oxygen XML Editor plugin will create line breaks if the characters in a line exceed the specified value. You can choose one of the following:

- **Always format**
- **Never format**
- **Always ask**

Save section

Save all files before transformation or validation

Saves all opened files before validating or transforming an XML document. This ensures that any dependencies are resolved when modifying the XML document and its XML Schema.

Check errors on save

If selected, Oxygen XML Editor plugin runs a validation that checks your document for errors before saving it.

Performance section

Clear undo buffer on save

If selected, Oxygen XML Editor plugin clears its undo buffer when you save a document. Thus, modifications made prior to saving the document cannot be undone. Select this option if you frequently encounter **out of memory** errors when editing large documents.

Spell Check Preferences

Oxygen XML Editor plugin provides support for spell checking in the **Text** and **Author** editing modes. To configure the **Spell Check** options, open the **Preferences** dialog box and go to **Editor** > **Spell Check**.

The following options are available:

Automatic spell check

This option is not selected by default. When selected, Oxygen XML Editor plugin automatically checks the spelling as you type and highlights misspelled words in the document.

- **Select editors** - You can select which editors (and therefore which file types) will be automatically spell checked. File types (such as CSS and DTD), in which automatic spell checking is not usually helpful, are excluded by default.

Language options section

This section includes the following language options:

Default language

The default language list allows you to choose the language used by the spell check engine when the language is not specified in the source file. You can add additional dictionaries to the spell check engines.

Use "lang" and "xml:lang" attributes

When this option is selected, the contents of an element with one of the `lang` or `xml:lang` attributes is checked in that language. Choose between the following two options for instances when these attributes are missing:

- **Use the default language** - If the `lang` and `xml:lang` attributes are missing, the selection in the **Default language** list is used.
- **Do not check** - If the `lang` and `xml:lang` attributes are missing, the element is not checked.

XML spell checking in section

You can choose to check the spelling inside the following XML items:

- **Comments**
- **Attribute values**
- **Text**
- **CDATA**

Options section

This section includes the following other options:

Check capitalization

When selected, the spell checker reports capitalization errors (for example, a word that starts with lowercase after *etc.* or *i.e.*).

Check punctuation

When selected, the spell checker checks punctuation. Misplaced white space and unusual sequences, such as a period following a comma, are highlighted as errors.

Ignore mixed case words

When selected, the spell checker does not check words containing mixed case characters (for example, *SpellChecker*).

Ignore acronyms

Available only for the **Hunspell Spell Checker**. When selected, acronyms are not reported as errors.

Ignore words with digits

When selected, the spell checker does not check words containing digits (for example, *b2b*).

Ignore duplicates

When selected, the spell checker does not signal two successive identical words as an error.

Ignore URL

When selected, the spell checker ignores words recognized as URLs or file names (for example, *www.oxygenxml.com* or *c:\boot.ini*).

Allow compounds words

When selected, all words formed by concatenating two legal words with a hyphen (hyphenated compounds) are accepted. If recognized by the language, two words concatenated without hyphen (closed compounds) are also accepted.

Allow file extensions

When selected, the spell checker accepts any word ending with recognized file extensions (for example, *myfile.txt* or *index.html*).

Ignore elements section

You can use the **Add** and **Remove** buttons to configure a list of element names or XPath expressions to be ignored by the spell checker. The following restricted set of XPath expressions are supported:

- '/' and '//' separators
- '*' wildcard

An example of an allowed XPath expression is: */a/*/b*.

AutoCorrect options link

Use this link to navigate to the **AutoCorrect** preferences page.

To change the color used by the spell check engine to highlight spelling errors, go to **Window** (**Eclipse** on Mac OSX) and choose **Preferences**. Then go to **General** > **Editors** > **Text Editors** > **Annotations** and change the color in the **Spell Check Annotation** option.

Spell Check Dictionaries Preferences

To set the Dictionaries preferences, open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**. This page allows you to configure the dictionaries (`.dic` files) and term lists (`.tdi` files) that Oxygen XML Editor plugin uses and to choose where to save new learned words.

The following options are valid when Oxygen XML Editor plugin uses the Hunspell spell checking engine:

Dictionaries and term lists default folder

Displays the default location where the dictionaries and term lists that Oxygen XML Editor plugin uses are stored.

Include dictionaries and term list from

Selecting this option allows you to specify a location where you have stored dictionaries and term lists that you want to include, along with the default ones.

Important: Consider the following notes in regards to this option:

- The spell checker takes into account dictionaries and term lists collected both from the default and custom locations and multiple dictionaries and term lists from the same language are merged (for example, `en_UK.dic` from the default location is merged with `en_US.dic` from a custom location).
- If you have a generic dictionary file (one that just has a two letter language code for its file name, such as `en.dic`) saved in either the default or custom location, the other more specific dictionaries (for example, `en_UK.dic` and `en_US.dic`) will not be merged and the existing generic dictionary will simply be used instead.
- If the additional location contains a file with the same name as one from the default location, the file in the additional location takes precedence over the file from the default location.

How to add more dictionaries and term lists link

Use this link to open a topic in the Oxygen XML Editor plugin User Guide that explains how to add more dictionaries and term lists.

Save learned words in the following location

Specifies the target where the newly learned words are saved. By default, the target is the application preferences folder, but you can also choose a custom location.

Delete learned words

Opens the list of learned words, allowing you to select the items you want to remove, without deleting the dictionaries and term lists.

Related Information:

Adding Spell Check Dictionaries on page 388
Adding Spell Check Term Lists on page 389

Syntax Highlight Preferences

Oxygen XML Editor plugin supports syntax highlighting in the **Text** mode editors for numerous types of documents, including XML, XHTML, JavaScript, XQuery, XPath, PHP, CSS, LESS, Markdown, Text, DTD, RNC, Java, JSON, and more.

To configure syntax highlighting, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**.

To set syntax colors for a language, expand the listing for that language in the top panel to show the list of syntax items for that type of document. Use the color and style selectors to change how each syntax item is displayed. The results of your changes are displayed in the **Preview** panel. If you do not know the name of the syntax token that you want to configure, click that token in the **Preview** area to select it.

Note: All default color sets come with a high-contrast variant that is automatically used when you switch to a black-background or white-background high-contrast theme in your Windows operating system settings. The high-contrast theme will not overwrite any default color you set in **Editor** > **Syntax Highlight** preferences page.

The settings for XML documents are also used in XSD, XSL, RNG documents and the **Preview** area has a separate tab for each of them when **XML** is selected in the top pane.

The **Enable nested syntax highlight** option controls whether or not content types that are nested in the same file (such as PHP, JS, or CSS scripts inside an HTML file) are highlighted according to the color schemes defined for each content type.

Elements/Attributes by Prefix Preferences

Oxygen XML Editor plugin allows you to specify syntax highlighting colors for XML elements and attributes with specific namespace prefixes. To configure the **Elements/Attributes by Prefix** preferences, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix**.

To change the syntax coloring for a specific namespace prefix, choose the prefix from the list, or add a new one using the **New** button, and use the color and style selectors to set the syntax highlighting style for that namespace prefix.

Note: Syntax highlighting is based on the literal namespace prefix, not the namespace that the prefix is bound to in the document.

If you only want the prefix (and not the whole element or attribute name) to be styled with a particular color, select the **Draw only the prefix with a separate color** option.

Templates Preferences

This page simply allows you to navigate to the preference pages for code templates or document templates.

Code Templates Preferences

Code templates are code fragments that can be inserted at the current editing position. Oxygen XML Editor plugin includes a set of built-in templates for CSS, Schematron, XSL, XQuery, and XML Schema document types. You can also define your own code templates for any type of file and share them with your colleagues using the template export and import functions.

To configure **Code Templates**, open the **Preferences** dialog box and go to **Editor** > **Templates** > **Code Templates**.

This preferences page contains a list of all the available code templates (both built-in and custom created ones) and a code preview area. You can disable any code template by deselecting it.

The following actions are available:

New

Opens the **Code template** dialog box that allows you to define a new code template. You can define the following fields:

- **Name** - The name of the code template.
- **Description** - The description of the code template that will appear in the **Code Templates** preferences page and in the tooltip message when selecting it from the *Content Completion Assistant*. HTML markup can be used for better rendering.
- **Associate with** - You can choose to set the code template to be associated with a specific type of editor or for all editor types.
- **Shortcut key** - Allows you to configure a shortcut key that can be used to insert the code template. The + character separates keys. If the **Enable platform-independent shortcut keys** checkbox is selected, the shortcut is platform-independent and the following modifiers are used:
  - `M1` represents the **Command** key on MacOS X, and the **Ctrl** key on other platforms.
  - `M2` represents the **Shift** key.
  - `M3` represents the **Option** key on MacOS X, and the **Alt** key on other platforms.
  - `M4` represents the **Ctrl** key on MacOS X, and is undefined on other platforms.
- **Content** - Text box where you define the content that is used when the code template is inserted.

Edit

Opens the **Code template** dialog box and allows you to edit an existing code template. You can edit the following fields:

- **Description** - The description of the code template that will appear in the **Code Templates** preferences page and in the tooltip message when selecting it from the *Content Completion Assistant*. HTML markup can be used for better rendering.

- **Shortcut key** - Allows you to configure a shortcut key that can be used to insert the code template. The + character separates keys. If the **Enable platform-independent shortcut keys** checkbox is selected, the shortcut is platform-independent and the following modifiers are used:
  - `M1` represents the **Command** key on MacOS X, and the **Ctrl** key on other platforms.
  - `M2` represents the **Shift** key.
  - `M3` represents the **Option** key on MacOS X, and the **Alt** key on other platforms.
  - `M4` represents the **Ctrl** key on MacOS X, and is undefined on other platforms.
- **Content** - Text box where you define the content that is used when the code template is inserted.

Duplicate

Creates a duplicate of the currently selected code template.

Delete

Deletes the currently selected code template. This action is not available for the built-in code templates.

Export

Exports a file with code templates.

Import

Imports a file with code templates that was created by the **Export** action.

You can use the following editor variables when you define a code template in the **Content** text box:

- **${caret}** - The position where the cursor is located. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.
- **${selection}** - The current selected text content in the current edited document. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.
- **${ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default_value')}** - To prompt for values at runtime, use the *ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default-value")* editor variable. You can set the following parameters:
  - **'message'** - The displayed message. Note the quotes that enclose the message.
  - **'default-value'** - Optional parameter. Provides a default value.
  - **type** - Optional parameter, with one of the following values:

    Note: The title of the dialog box will be determined by the type of parameter and as follows:

    - For *url* and *relative_url* parameters, the title will be the name of the parameter and the value of the *'message'*.
    - For the other parameters listed below, the title will be the name of that respective parameter.
    - If no parameter is used, the title will be "Input".

Parameter	
url	**Format:** *${ask('message', url, 'default_value')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin checks that the provided URL is valid.
	Example: • *${ask('Input URL', url)}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. • *${ask('Input URL', url, 'http://www.example.com')}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. The input field displays the default value *http://www.example.com*.
password	**Format**: *${ask('message', password, 'default')}*
	Description: The input is hidden with bullet characters.

Parameter	
	Example: • *${ask('Input password', password)}* - The displayed dialog box has the name *'Input password'* and the input is hidden with bullet symbols. • *${ask('Input password', password, 'abcd')}* - The displayed dialog box has the name *'Input password'* and the input hidden with bullet symbols. The input field already contains the default **abcd** value.
generic	**Format**: *${ask('message', generic, 'default')}*
	Description: The input is considered to be generic text that requires no special handling.
	Example: • *${ask('Hello world!')}* - The dialog box has a *Hello world!* message displayed. • *${ask('Hello world!', generic, 'Hello again!')}* - The dialog box has a *Hello world!* message displayed and the value displayed in the input box is *'Hello again!'*.
relative_url	**Format:** *${ask('message', relative_url, 'default')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin tries to make the URL relative to that of the document you are editing. **Note:** If the *$ask* editor variable is expanded in content that is not yet saved (such as an *untitled* file, whose path cannot be determined), then Oxygen XML Editor plugin will transform it into an absolute URL.
	Example: • *${ask('File location', relative_url, 'C:/example.txt')}* - The dialog box has the name *'File location'*. The URL inserted in the input box is made relative to the current edited document location.
combobox	**Format:** *${ask('message', combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a drop-down menu. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated value (*real_value*). **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems. The associated value will be returned based upon your selection. **Note:** In this example, the default value is indicated by the *osx* key. However, the same result could be obtained if the default value is indicated by *Mac OS X*, as in the following example: *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'Mac OS X')}* • *${ask('Mobile OS', combobox, ('win':'Windows Mobile';'ios':'iOS';'and':'Android'), 'Android')}*
editable_combobox	**Format:** *${ask('message', editable_combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*

Parameter	
	Description: Displays a dialog box that offers a drop-down menu with editable elements. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated real value (*real_value*) or the value inserted when you edit a list entry. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', editable_combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems and also allows you to edit the entry. The associated value will be returned based upon your selection or the text you input.
radio	**Format:** *${ask('message', radio, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a series of radio buttons. Each radio button displays a *'rendered_value* and will return an associated *real_value*. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', radio, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The radio button group allows you to choose between the three operating systems. **Note:** In this example `Mac OS X` is the default selected value and if selected it would return *osx* for the output.

- **${timeStamp}** - Time stamp, that is the current time in Unix format. For example, it can be used to save transformation results in multiple output files on each transformation.
- **${uuid}** - Universally unique identifier, a unique sequence of 32 hexadecimal digits generated by the Java UUID class.
- **${id}** - Application-level unique identifier. It is a short sequence of 10-12 letters and digits that is not guaranteed to be universally unique.
- **${cfn}** - Current file name without extension and without parent folder. The current file is the one currently opened and selected.
- **${cfne}** - Current file name with extension. The current file is the one currently opened and selected.
- **${cf}** - Current file as file path, that is the absolute file path of the current edited document.
- **${cfd}** - Current file folder as file path, that is the path of the current edited document up to the name of the parent folder.
- **${frameworksDir}** - The path (as file path) of the *`[OXYGEN_INSTALL_DIR]`*`/frameworks` directory.
- **${pd}** - The file path to the folder that contains the current project file (`.xpr`).
- **${oxygenInstallDir}** - Oxygen XML Editor plugin installation folder as file path.
- **${homeDir}** - The path (as file path) of the user home folder.
- **${pn}** - Current project name.
- **${env(VAR_NAME)}** - Value of the *VAR_NAME* environment variable. The environment variables are managed by the operating system. If you are looking for Java System Properties, use the **${system(var.name)}** editor variable.
- **${system(var.name)}** - Value of the *var.name* Java System Property. The Java system properties can be specified in the command line arguments of the Java runtime as *-Dvar.name=var.value*. If you are looking for operating system environment variables, use the **${env(VAR_NAME)}** editor variable instead.

- **${date(pattern)}** - Current date. The allowed patterns are equivalent to the ones in the Java SimpleDateFormat class. **Example:** *yyyy-MM-dd*;

  Note: This editor variable supports both the **xs:date** and **xs:datetime** parameters. For details about **xs:date**, go to http://www.w3.org/TR/xmlschema-2/#date. For details about **xs:datetime**, go to http://www.w3.org/TR/xmlschema-2/#dateTime.

Related Information:

Code Templates on page 420

Document Templates Preferences

Oxygen XML Editor plugin provides a variety of predefined document templates that make it easier to create new documents in various formats. The list of available templates is presented in the **New Document** wizard when you create a new document (**New** toolbar button or **File** > **New** > **New from Templates**).

You can also create your own templates and share them with others. You can store your custom document templates in the existing `templates` folder in the Oxygen XML Editor plugin installation directory or store them in a custom directory. If you store them in a custom directory, you need to use this **Document Templates** preferences page to add that directory to the list of template directories that Oxygen XML Editor plugin makes available in the **New Document** wizard.

To add a template directory, follow these steps:

1. open the **Preferences** dialog box and go to **Editor** > **Templates** > **Document Templates**.
2. Use the **New** button to select a location of the new document template folder.
3. You can also use the **Edit** or **Delete** buttons to manage folders in the list, and you can alter the order in which Oxygen XML Editor plugin looks in these directories by using the **Up** and **Down** buttons.

Result: This will add the folder to the list in this preferences page and it will now appear in the **New from templates** wizard in a category based upon the folder path you specified.

Note: For DITA templates, they will also appear in the dialog box for creating new DITA topics from the **DITA Maps Manager**, but if you customize the template, you need to set the `type` property to **dita** in the corresponding properties file.

Fonts Preferences

Oxygen XML Editor plugin allows you to choose the fonts to be used in the **Text**, **Design**, and **Grid** editor modes, and fonts for the **Author** mode that are not specified in the associated CSS stylesheet. To configure the font options, open the **Preferences** dialog box and go to **Fonts**.

The following options are available:

Text mode default font

This option allows you to choose the font used in **Text** mode. There are two options available:

- **Map to text font** - Uses the same font for the basic text editor as the one set in **General** > **Appearance** > **Colors and Fonts**.
- **Customize** - Allows you to choose a specific font.

Author mode default font

This option allows you to choose the default font that will be used in **Author** mode. The default font will be overridden by the fonts specified in any CSS file associated with the opened document.

Schema default font

This option allows you to choose the font to be used in:

- The **Design** mode of the XML Schema editor.
- Images with schema diagram fragments that are included in the HTML documentation generated from an XML Schema.

Note: You must restart the application for your changes to be applied.

Network Connection Settings Preferences

This section presents the options available in the **Network Connection Settings** preferences pages.

(S)FTP Preferences

To configure the **(S)FTP** options, open the **Preferences** dialog box and go to **Network Connection Settings** > **(S)FTP**. You can customize the following options:

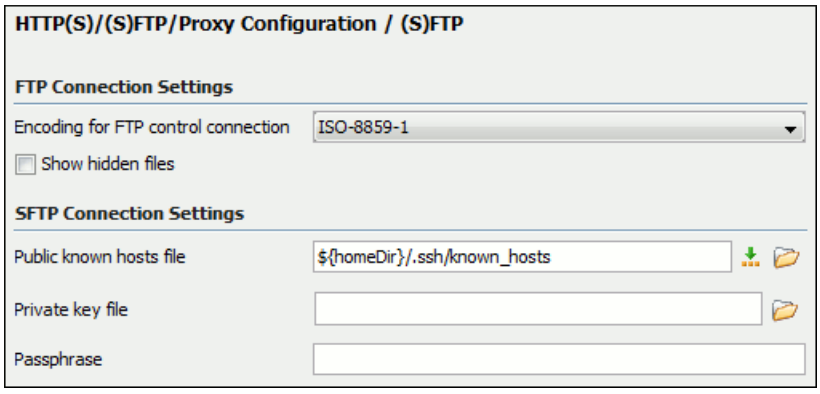


Figure 29: (S)FTP Configuration Preferences Panel

- **Encoding for FTP control connection** - The encoding used to communicate with FTP servers: either ISO-8859-1 or UTF-8. If the server supports the UTF-8 encoding Oxygen XML Editor plugin will use it for communication. Otherwise, it will use ISO-8859-1.
- **Public known hosts file** - File containing the list of all SSH server host keys that you have determined are accurate. The default value is `${homeDir}/.ssh/known_hosts`.
- **Private key file** - The path to the file containing the private key used for the private key method of authentication of the secure FTP (SFTP) protocol.
- **Passphrase** - The passphrase used for the private key method of authentication of the secure FTP (SFTP) protocol.
- **Show SFTP certificate warning dialog** - If selected, a warning dialog box will be displayed each time when the authenticity of the host cannot be established.

HTTP(S)/WebDAV Preferences

To set the **HTTP(S)/WebDAV** preferences, open the **Preferences** dialog box and go to **Network Connection Settings** > **HTTP(S)/WebDAV**. The following options are available:

Enable the HTTP(S)/WebDAV Protocols

Activates the HTTP(S)/WebDAV protocols bundled with Oxygen XML Editor plugin. Any adjustment to this option requires a restart of the application.

Read Timeout (seconds)

The period (in seconds) after which the application considers that an HTTP server is unreachable if it does not receive any response from that server.

Automatically accept a security certificate, even if invalid

When selected, the HTTPS connections that Oxygen XML Editor plugin attempts to establish with will accept all security certificates, even if they are invalid.

Important: By accepting an invalid certificate, you accept (at your own risk) a potential security threat, since you cannot verify the integrity of the certificate's issuer.

Lock WebDAV files on open

If selected, the files opened through WebDAV are locked on the server so that they cannot be edited by other users while the lock placed by the current user still exists on the server.

Trusted Hosts Preferences

This preferences page contains a list of domains that have been identified as trusted. You can add or remove domains from the list and Oxygen XML Editor plugin will allow connections to the listed hosts without requesting user confirmation.

To configure the **Trusted Hosts** options, open the **Preferences** dialog box and go to **Network Connection Settings** > **Trusted Hosts**. The following options are available:

- **New** - Allows you to manually add a new entry to the list of trusted hosts.

  Tip: You can specify a specific port at the end of the URL (for instance, `www.example.com:8080`). Otherwise, if no port is specified,connections will be allowed on all ports for the particular host.
- **Delete** - Allows you to remove an entry from the list of trusted hosts.

Scenarios Management Preferences

To configure Scenarios Management options, open the **Preferences** dialog box and go to **Scenarios Management**. This allows you to share the global transformation scenarios with other users by exporting them to an external file that can also be imported in this preferences panel.

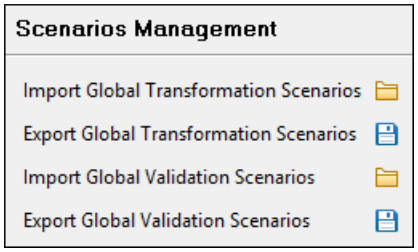


Figure 30: Scenarios Management Preferences Panel

The actions available in this panel are as follows:

- **Import Global Transformation Scenarios** - Allows you to import all transformation scenarios from a file created with the export scenario action. The names of the imported scenarios will appear in the **Configure Transformation Scenario** dialog box followed by *(import)*. This way there are no scenario name conflicts.
- **Export Global Transformation Scenarios** - Allows you to export all global transformation scenarios available in the **Configure Transformation Scenario** dialog box.
- **Import Global Validation Scenarios** - Allows you to import all validation scenarios from a file created with the export scenario action. The names of the imported scenarios will appear in the **Configure Validation Scenario** dialog box followed by *(import)*. This way there are no scenario name conflicts.
- **Export Global Validation Scenarios** - Allows you to export all global validation scenarios available in the **Configure Validation Scenario** dialog box.

View Preferences

The **View** preferences page allows you to configure some options in regards to certain views. To edit these options, open the **Preferences** dialog box and go to **View**.

The following options are available:

Console section

Enable Oxygen consoles

If selected, various messages will be contributed to the **Console** view when certain events are triggered (such as *schema detection*, *validation*, or *transformation* events).

Fixed width console

If selected, a line in the **Console** view will be hard wrapped after the specified maximum numbers of characters allowed on a line is reached.

Limit console output

If selected, the content of the **Console** view will be limited to a configurable number of characters.

Console buffer

If the **Limit console output** option is selected, this specifies the maximum number of characters that can be written in the **Console** view.

Tab width

Specifies the number of spaces used for depicting a tab character.

Elements view section

Show only items allowed at cursor position

If selected, when editing in **Author** mode, only the elements that are allowed at the current cursor position will be listed in the **Elements** view. If not selected, two additional tabs (**Before** and **After**) will be displayed at the bottom of the view (in **Author** mode only). These tabs list the elements that are allowed before or after the element at the current cursor position.

XML Preferences

This section describes the panels that contain the user preferences related with XML.

Import Preferences

To configure importing options, open the **Preferences** dialog box and go to **XML** > **Import**. This page allows you to configure how empty values and `null` values are handled when they are encountered in imported database tables or Excel sheets. Also you can configure the format of date / time values recognized in the imported database tables or Excel sheets.

The following options are available:

Create empty elements for empty values

If selected, an empty value from a database column or from a text file is imported as an empty element.

Create empty elements for null values

If selected, `null` values from a database column are imported as empty elements.

Escape XML content

Selected by default, this option instructs Oxygen XML Editor plugin to escape the imported content to an XML-safe form.

Add annotations for generated XML Schema

If selected, the generated XML Schema contains an annotation for each of the imported table columns. The documentation inside the annotation tag contains the remarks of the database columns (if available) and also information about the conversion between the column type and the generated XML Schema type.

Date / Time Format section

Specifies the format used for importing date and time values from Excel spreadsheets or database tables, and in the generated XML schemas. You can choose from the following format types:

- **Unformatted** - The date and time formats specific to the database are used for import. When importing data from Excel a string representation of date or time values are used. The type used in the generated XML Schema is `xs:string`.
- **XML Schema date format** -The XML Schema-specific format ISO8601 is used for imported date / time data (`yyyy-MM-dd'T'HH:mm:ss` for `datetime`, `yyyy-MM-dd` for `date` and `HH:mm:ss` for `time`). The types used in the generated XML Schema are `xs:datetime`, `xs:date` and `xs:time`.
- **Custom format** - If selected, you can define a custom format for timestamp, date, and time values or choose one of the predefined formats. A preview of the values is presented when a format is used. The type used in the generated XML Schema is `xs:string`.

Table 1: Pattern Letters

Letter	Date or Time Component	Presentation	Examples
G	Era designator	Text	AD
y	Year	Year	1996; 96

Letter	Date or Time Component	Presentation	Examples
M	Month in year	Month	July; Jul; 07
w	Week in year	Number	27
W	Week in month	Number	2
D	Day in year	Number	189
d	Day in month	Number	10
F	Day of week in month	Number	2
E	Day in week	Text	Tuesday; Tue
a	Am / pm marker	Text	PM
H	Hour in day (0-23)	Number	0
k	Hour in day (1-24)	Number	24
K	Hour in am / pm (0-11)	Number	0
h	Hour in am / pm (1-12)	Number	12
m	Minute in hour	Number	30
s	Second in minute	Number	55
S	Millisecond	Number	978
z	Time zone	General time zone	PST; GMT-08:00
Z	Time zone	RFC 822 time zone	-0800

Pattern letters are usually repeated, as their number determines the exact presentation:

- **Text** - If the number of pattern letters is 4 or more, the full form is used. Otherwise, a short or abbreviated form is used if available.
- **Number** - The number of pattern letters is the minimum number of digits, and shorter numbers are zero-padded to this amount.
- **Year** - If the number of pattern letters is 2, the year is truncated to 2 digits. Otherwise, it is interpreted as a number.
- **Month** - If the number of pattern letters is 3 or more, the month is interpreted as text. Otherwise, it is interpreted as a number.
- **General time zone** - Time zones are interpreted as text if they have names. For time zones representing a GMT offset value, the following syntax is used:
  - **GMTOffsetTimeZone** - GMT Sign Hours : Minutes
  - **Sign** - one of + or -
  - **Hours** - one or two digits
  - **Minutes** - two digits
  - **Digit** - one of 0 1 2 3 4 5 6 7 8 9

  Hours must be between 0 and 23, and Minutes must be between 00 and 59. The format is locale independent and digits must be taken from the Basic Latin block of the Unicode standard.
- **RFC 822 time zone**: The RFC 822 4-digit time zone format is used:
  - **RFC822TimeZone**
  - **TwoDigitHours** (must be between 00 and 23)

Sample XML Files Generator Preferences

The **Generate Sample XML Files** tool (available on the **XML Tools** menu) allows you to generate XML instance documents based on a W3C XML Schema. There are various options that can be configured within the tool and

these options are also available in the **Sample XML Files Generator** preferences page. This allows you to set default values for these options. To configure the options for generating the XML files, open the **Preferences** dialog box and go to **XML** > **Sample XML Files Generator**.

The following options are available:

Generate optional elements

When selected, all elements are generated, including the optional ones (having the `minOccurs` attribute set to 0 in the schema).

Generate optional attributes

When selected, all attributes are generated, including the optional ones (having the `use` attribute set to `optional` in the schema).

Values of elements and attributes

Controls the content of generated attribute and element values. The following choices are available:

- **None** - No content is inserted.
- **Default** - Inserts a default value depending of data type descriptor of the particular element or attribute. The default value can be either the data type name or an incremental name of the attribute or element (according to the global option from the **Sample XML Files Generator** preferences page). Note that type restrictions are ignored when this option is selected. For example, if an element is of a type that restricts an **xs:string** with the **xs:maxLength** facet to allow strings with a maximum length of 3, the XML instance generator tool may generate string element values longer than 3 characters.
- **Random** - Inserts a random value depending of data type descriptor of the particular element or attribute.

  Important: If all of the following are true, the **Generate Sample XML Files** tool outputs invalid values:

  - At least one of the restrictions is a `regexp`.
  - The value generated after applying the regexp does not match the restrictions imposed by one of the facets.

Preferred number of repetitions

Allows you to set the preferred number of repeating elements related to `minOccurs` and `maxOccurs` facets defined in the XML Schema.

- If the value set here is between `minOccurs` and `maxOccurs`, then that value is used.
- If the value set here is less than `minOccurs`, then the `minOccurs` value is used.
- If the value set here is greater than `maxOccurs`, then `maxOccurs` is used.

Maximum recursion level

If a recursion is found, this option controls the maximum allowed depth of the same element.

Type alternative strategy

Used for the `xs:alternative` element from XML Schema 1.1. The possible strategies are:

- **First** - The first valid alternative type is always used.
- **Random** - A random alternative type is used.

Choice strategy

Used for `xs:choice` or `substitutionGroup` elements. The possible strategies are:

- **First** - The first branch of `xs:choice` or the head element of `substitutionGroup` is always used.
- **Random** - A random branch of `xs:choice` or a substitute element or the head element of a `substitutionGroup` is used.

Generate the other options as comments

If selected, generates the other possible choices or substitutions (for `xs:choice` and `substitutionGroup`). These alternatives are generated inside comments groups so you can uncomment and use them later. Use this option with care (for example, on a restricted namespace and element) as it may generate large result files.

Use incremental attribute / element names as default

If selected, the value of an element or attribute starts with the name of that element or attribute. For example, for an a element the generated values are: a1, a2, a3, and so on. If not selected, the value is the name of the type of that element / attribute (for example: `string`, `decimal`, etc.)

Maximum length

The maximum length of string values generated for elements and attributes.

Discard optional elements after nested level

The optional elements that exceed the specified nested level are discarded. This option is useful for limiting deeply nested element definitions that can quickly result in very large XML documents.

Related Information:

Generating Sample XML Files on page 701

XML Catalog Preferences

To configure options that pertain to *XML Catalogs*, open the **Preferences** dialog box and go to **XML** > **XML Catalog**.

The following options are available:

Prefer

Determines whether public identifiers specified in the catalog are used in favor of system identifiers supplied in the document. Suppose you have an entity in your document for which both a public identifier and a system identifier has been specified, and the catalog only contains a mapping for the public identifier (for example, a matching public catalog entry). You can choose between the following:

- **system** - If selected, the system identifier in the document is used.
- **public** - If selected, the URI supplied in the matching public catalog entry is used. Generally, the purpose of catalogs is to override the system identifiers in XML documents, so **public** should usually be used for your catalogs.

Note: If the catalog contains a matching system catalog entry giving a mapping for the system identifier, that mapping would have been used, the public identifier would never have been considered, and this setting would be irrelevant.

Verbosity

When using catalogs it is sometimes useful to see what catalog files are parsed, if they are valid or not, and what identifiers are resolved by the catalogs. This option selects the detail level of such logging messages of the *XML catalog* resolver that will be displayed in the **Catalogs** table at the bottom of the window. You can choose between the following:

- **None** - No message is displayed by the catalog resolver when it tries to resolve a URI reference, a SYSTEM one or a PUBLIC one with the *XML catalogs* specified in this panel.
- **Unresolved entities** - Only the logging messages that track the failed attempts to resolve references are displayed.
- **All messages** - The messages of both failed attempts and successful ones are displayed.

Resolve schema locations also through system mappings

If selected, Oxygen XML Editor plugin analyzes both *uri* and *system* mappings to resolve the location of schema.

Note: This option is not applicable for DTD schemas since the public and system catalog mappings are always considered.

Process "schemaLocation" namespaces through URI mappings for XML Schema

If selected, the target namespace of the imported XML Schema is resolved through the *uri* mappings. The namespace is taken into account only when the schema specified in the *schemaLocation* attribute was not resolved successfully. If not selected, the system IDs are used to resolve the schema location.

Use default catalog

If this option is selected and Oxygen XML Editor plugin cannot resolve the catalog mapping with any other means, the default global catalog (listed below this checkbox) is used. For more information, see How Oxygen XML Editor plugin Determines which Catalog to Use on page 592.

Catalogs table

You can use this table to add or manage global user-defined catalogs. The following actions are available at the bottom of the table:

Add

Opens a dialog box that allows you to add a catalog to the list. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Edit

Opens a dialog box that allows you to edit an existing catalog. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Delete

Deletes the currently selected catalog from the list.

Up

Moves the selection to the previous resource.

Down

Moves the selection to the following resource.

Note: When you add, delete, or edit a catalog in this table, you need to reopen the currently edited files that use the modified catalog or run a manual **Validate** action so that the changes take full effect.

You can also add or configure catalogs at *framework* level from the **Catalogs** tab in the **Document Type** configuration dialog box.

Related Information:

Controlling the Catalog Resolver

Working with XML Catalogs on page 591

XML Parser Preferences

To configure the **XML Parser** options, open the **Preferences** dialog box and go to **XML** > **XML Parser**.

The configurable options of the built-in XML parser are as follows:

Enable parser caching (validation and content completion)

Enables re-use of internal models when validating and provides content completion in opened XML files that reference the same schemas (grammars) such as DTD, XML Schema, or RelaxNG.

Ignore the DTD for validation if a schema is specified

Forces validation against a referenced schema (W3C XML Schema, Relax NG schema) even if the document includes also a DTD DOCTYPE declaration. This option is useful when the DTD declaration is used only to declare DTD entities and the schema reference is used for validation against a W3C XML Schema or a Relax NG schema.

Note: Schematron schemas are treated as additional schemas. The validation of a document associated with a DTD and referencing a Schematron schema is executed against both the DTD and the Schematron schema, regardless of the value of the **Ignore the DTD for validation if a schema is specified** option.

Enable XInclude processing

Enables XInclude processing. If selected, the XInclude support in Oxygen XML Editor plugin is turned on for validation, rendering in **Author** mode and transformation of XML documents.

Base URI fix-up

According to the specification for XInclude, processors must add an `xml:base` attribute to elements included from locations with a different base URI. Without these attributes, the resulting infoset information would be incorrect.

Unfortunately, these attributes make XInclude processing to not be transparent to Schema validation. One solution to this is to modify your schema to allow `xml:base` attributes to appear on elements that might be included from different base URIs.

If the addition of `xml:base` and / or `xml:lang` is not desired by your application, you can deselect this option.

Language fix-up

The processor will preserve language information on a top-level included element by adding an `xml:lang` attribute if its include parent has a different [language] property. If the addition of `xml:lang` is not allowed by your application, you can deselect this option.

DTD post-validation

Select this option to validate an XML file against the associated DTD, after all the content merged to the current XML file using `XInclude` was resolved. If you deselect this option, the current XML file is validated against the associated DTD before all the content merged to the current XML file using `XInclude` is resolved.

Relax NG Preferences

To configure options in regards to Relax NG, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **Relax NG**.

The following options are available in this page:

Check feasibly valid

Checks if Relax NG documents can be transformed into valid documents by inserting any number of attributes and child elements anywhere in the tree.

Note: Selecting this option disables the **Check ID/IDREF** option.

Check ID/IDREF

Checks the ID/IDREF matches when a Relax NG document is validated.

Add default attribute values

Default values are given to the attributes of documents validated using Relax NG. These values are defined in the Relax NG schema.

Ignore "data-" attributes in XHTML

This option is selected by default, which means that when XHTML documents are validated with an RNG schema, any **data-** attributes detected in the document will not be taken into account by the validation engine.

Schematron Preferences

To configure options in regards to Schematron, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **Schematron**.

The following options are available in this preferences page:

ISO Schematron Section

Optimize (visit-no-attributes)

If your ISO Schematron assertion tests do not contain the attributes axis, you should select this option for faster ISO Schematron validation.

Allow foreign elements (allow-foreign)

Enables support for `allow-foreign` on ISO Schematron. This option is used to pass non-Schematron elements to the generated stylesheet.

Use associated XML Schema to expand default attribute values

When selected (default value), if the validated XML document has an XML Schema associated that contains default values for attributes defined in the XML content, the Schematron will be able to match on those default attributes.

Use Saxon EE (schema aware) for xslt2/xslt3 query language binding

When selected, Saxon EE is used for `xslt2/xslt3` query binding. If this option is not selected, Saxon PE is used.

Enable Schematron Quick Fixes (SQF) support

Allows you to enable or disable the support for *Quick Fixes* in Schematron files. This option is selected by default.

Embedded rules query language binding

You can control the query language binding used by the ISO Schematron embedded rules. You can choose between: **xslt1**, **xslt2**, or **xslt3**.

Note: To control the query language binding for standalone ISO Schematron, you need to set the query language to be used with a `queryBinding` attribute on the schema root element.

Message language

This option allows you to specify the language to be used in Schematron validation messages. You can choose between the following:

- **Use the language defined in the application** - The language that is specified in the application will be used and only the validation messages that match that language will be presented. You can use the **Change application language** link to navigate to the preferences page where you can specify the language to be used in the application.
- **Use the "xml:lang" attribute set on the Schematron root** - The language specified in the `xml:lang` attribute from the Schematron root will be used and only the validation message that match that language will be presented.
- **Ignore the language and show all message** - All messages are displayed in whatever language is defined within the Schematron schema.
- **Custom** - Use this option to specify a custom language to be used and only the messages that match the specified language will be presented.

Note: In all cases, if the selected language is not available for a validation error or warning, all messages will be displayed in whatever language is defined within the Schematron schema.

Schematron 1.5 Section

XPath Version

Allows you to select the version of XPath for the expressions that are allowed in Schematron assertion tests. You can choose between: **1.0**, **2.0**, or **3.0**. This option is applied in both standalone Schematron 1.5 schemas and embedded Schematron 1.5 rules.

XML Schema Preferences

To configure options in regards to XML Schema, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema**.

This preferences page allows you to configure the following options:

Default XML Schema version

Allows you to select the version of W3C XML Schema to be used as the default. You can choose XML Schema **1.0** or XML Schema **1.1**.

Note: You are also able to set the XML Schema version using the **Customize** option in the **New** document wizard.

Default XML Schema validation engine

Allows you to select the default validation engine to be used for XML Schema. You can choose **Xerces** or **Saxon EE**.

Xerces validation features section

Enable full schema constraint checking

Sets the *schema-full-checking* feature to `true`. This enables a validation of the parsed XML document against a schema (W3C XML Schema or DTD) while the document is parsed.

Enable honour all schema location feature

Sets the *honour-all-schema-location* feature to `true`. All the files that declare W3C XML Schema components from the same namespace are used to compose the validation model. If this option is not selected, only the first W3C XML Schema file that is encountered in the XML Schema import tree is taken into account.

Enable full XPath 2.0 for alternative types

When selected (default value), you can use the full XPath support in assertions and alternative types. Otherwise, only the XPath support offered by the Xerces engine is available.

Assertions can see comments and processing instructions

Controls whether or not comments and processing instructions are visible to the XPath expression used for defining an assertion in XSD 1.1.

Saxon EE validation features section

Multiple schema imports

Forces `xs:import` to fetch the referenced schema document. By default, the `xs:import` fetches the document only if no schema document for the given namespace has already been loaded. With this option in effect, the referenced schema document is loaded unless the absolute URI is the same as a schema document already loaded.

Assertions can see comments and processing instructions

Controls whether or not comments and processing instructions are visible to the XPath expression used to define an assertion. By default, they are not made visible (unlike Saxon 9.3).

XML Refactoring Preferences

To specify a folder for loading the custom XML refactoring operations, open the **Preferences** dialog box and go to **XML** > **XML Refactoring**. The following option is available in this preferences page:

Load additional refactoring operations from

Use this text box to specify a folder for loading custom XML refactoring operations. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

XML Signing Certificates Preferences

Oxygen XML Editor plugin provides two types of *keystores* for certificates that are used for digital signatures of XML documents: Java Keystore (**JKS**) and Public-Key Cryptography Standards version 12 (**PKCS-12**). A *keystore* file is protected by a password. To configure a certificate *keystore*, open the **Preferences** dialog box and go to **XML** > **XML Signing Certificates**. You can customize the following parameters of a *keystore*:

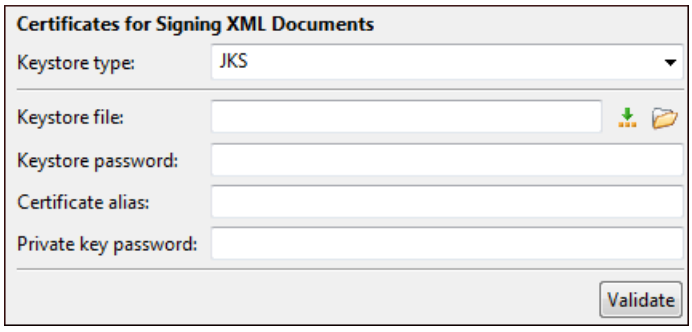


Figure 31: Certificates Preferences Panel

- **Keystore type** - The type of *keystore* that Oxygen XML Editor plugin uses (**JKS** or **PKCS-12**).
- **Keystore file** - The location of the imported file.

- **Keystore password** - The password that is used for protecting the privacy of the stored keys.
- **Certificate alias** - The alias used for storing the key entry (the certificate or the private key) inside the *keystore*.
- **Private key password** - The private key password of the certificate (required only for JKS *keystores*).
- **Validate** - Press this button to verify the configured *keystore* and the validity of the certificate.

XProc Preferences

Oxygen XML Editor plugin includes a built-in XProc engine called *Calabash*. You can add or configure external XProc engines by using the **XProc** preferences page. Open the **Preferences** dialog box and go to **XML** > **XProc**.

When **Show XProc messages** is selected all messages emitted by the XProc processor during a transformation will be presented in the **Results** view.

To add an external engine click the **New** button. To configure an existing engine, click the **Edit** button. This opens the **Custom Engine** dialog box that allows you to configure an external engine.

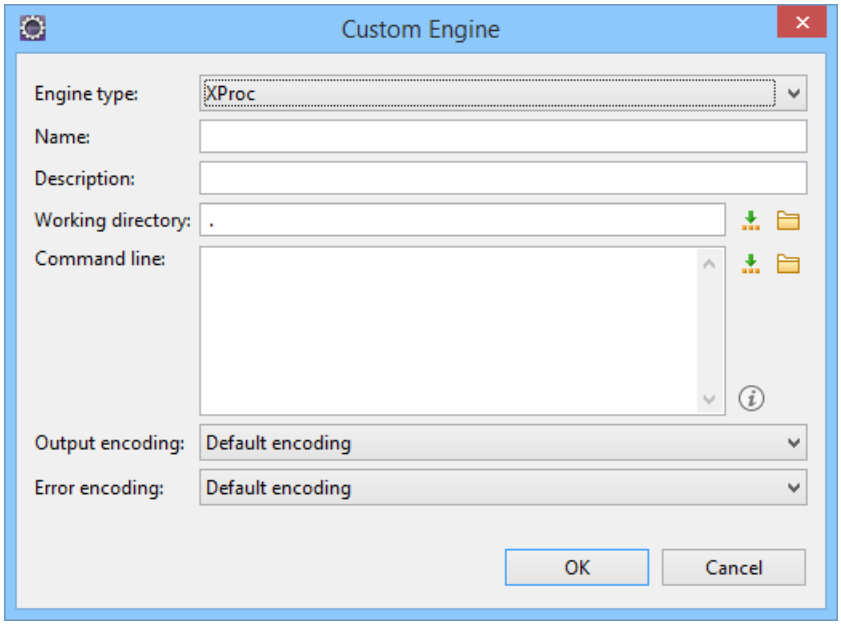


Figure 32: Creating an XProc external engine

The following options can be configure in this dialog box:

- **Name** - The value of this field will be displayed in the XProc transformation scenario and in the command line that will start it.
- **Description** - A textual description that will appear as a tooltip where the XProc engine will be used.
- **Working directory** - The working directory for resolving relative paths. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.
- **Command line** - The command line that will run the XProc engine as an external process. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.
- **Output encoding** - The encoding for the output stream of the XProc engine, used for reading and displaying the output messages.
- **Error encoding** - The encoding for the error stream of the XProc engine, used for reading and displaying the messages from the error stream.

Note: You can configure the built-in Saxon processor using the `saxon.config` file. For further details about configuring this file go to http://www.saxonica.com/documentation9.5/index.html#!configuration/configuration-file. You can configure the built-in Calabash processor by using the `calabash.config` file. These files are located in *`[OXYGEN_INSTALL_DIR]`*`\lib\xproc\calabash\lib`. If they do not exist, you have to create them.

XSLT-FO-XQuery Preferences

To configure options in regards to XSLT, XQuery, and FO processors, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery**. This panel contains only the most generic options for working with XSLT/XSL-FO/XQuery processors. The more specific options are grouped in other panels linked as child nodes of this panel in the tree of this **Preferences** page.

There is only one generic option available:

Create transformation temporary files in system temporary directory

It should be selected only when the temporary files necessary for performing transformations are created in the same folder as the source of the transformation (the default behavior when this option is not selected) and this breaks the transformation. An example of breaking the transformation is when the transformation processes all the files located in the same folder as the source of the transformation (including the temporary files) and the result is incorrect or the transformation fails because of this.

Custom Engines Preferences

Oxygen XML Editor plugin allows you to configure custom processors to be used for running XSLT and XQuery transformations.

Note: You can not use these custom engines in the Debugger *perspective*.

To configure the **Custom Engines** preferences, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **Custom Engines**.

The table in this preferences page displays the custom engines that have been defined. Use the **New** or **Edit** button at the bottom of the table to open a dialog box that allows you to add or configure a custom engine.

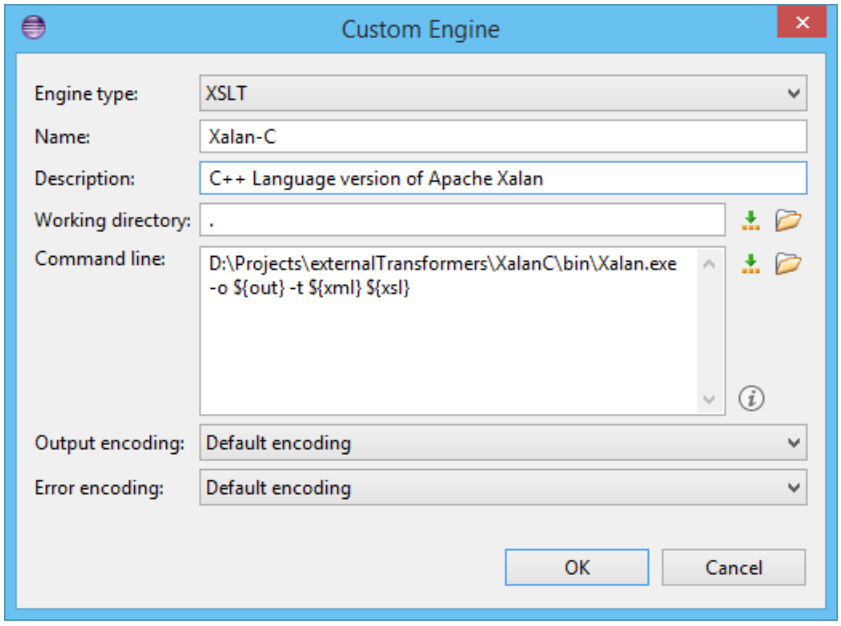


Figure 33: Parameters of a Custom Engine

The following parameters can be configured for a custom engine:

Engine type

Specifies the transformer type. You can choose between XSLT and XQuery engines.

Name

The name of the transformer displayed in the dialog box for editing transformation scenarios.

Description

A textual description of the transformer.

Working directory

The start directory of the executable program for the transformer. The following editor variables are available for making the path to the working directory independent of the location of the input files:

- **${homeDir}** - The user home directory in the operating system.
- **${cfd}** - The path to the directory of the current file.
- **${pd}** - The path to the directory of the current project.
- **${oxygenInstallDir}** - The Oxygen XML Editor plugin install directory.

Command line

The command line that must be executed by Oxygen XML Editor plugin to perform a transformation with the engine. The following editor variables are available for making the parameters in the command line (the transformer executable, the input files) independent of the location of the input files:

- **${xml}** - The XML input document as a file path.
- **${xmlu}** - The XML input document as a URL.
- **${xsl}** - The XSL / XQuery input document as a file path.
- **${xslu}** - The XSL / XQuery input document as a URL.
- **${out}** - The output document as a file path.
- **${outu}** - The output document as a URL.
- **${ps}** - The platform separator that is used between library file names specified in the class path.

Output Encoding

The encoding of the transformer output stream.

Error Encoding

The encoding of the transformer error stream.

Debugger Preferences

To configure the **Debugger** preferences, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **Debugger**.

The following options are available:

Show xsl:result-document output

If selected, the debugger presents the output of `xsl:result-document` instructions into the debugger output view.

Infinite loop detection

Select this option to receive notifications when an infinite loop occurs during transformation.

Enable Saxon optimizations

This option is not selected by default and this means that the optimization for the debugging process is suppressed. This is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Maximum depth in templates stack

Allows you to set how many `xsl:template` instructions can appear on the current stack. This setting is used by the infinite loop detection.

Debugger layout

If you select the **Horizontal** layout, the stack of XML editors is presented on the left half of the editing area while the stack of XSL editors is on the right half. If you select the **Vertical** layout, the stack of XML editors is presented on the upper half of the editing area while the stack of XSL editors is on the lower half.

XWatch evaluation timeout (seconds)

Allows you to specify the maximum time that Oxygen XML Editor plugin allocates to the evaluation of XPath expressions while debugging.

FO Processors Preferences

Oxygen XML Editor plugin includes a built-in formatting objects processor (Apache FOP), but you can also configure other external processors and use them in the transformation scenarios for processing XSL-FO documents.

Oxygen XML Editor plugin provides an easy way to add two of the most commonly used commercial FO processors: **RenderX XEP** and **Antenna House Formatter**. You can easily add *RenderX XEP* as an external FO processor if you have the XEP installed. Also, if you have the *Antenna House Formatter*, Oxygen XML Editor plugin uses the environment variables set by the XSL formatter installation to detect and use it for XSL-FO transformations. If the environment variables are not set for the XSL formatter installation, you can browse and choose the executable file just as you would for XEP. You can use these two external FO processors for DITA OT transformations scenarios and XML with XSLT transformation scenarios.

To configure the options for the FO Processors, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **FO Processors**. The **FO Processors** preferences page is displayed.

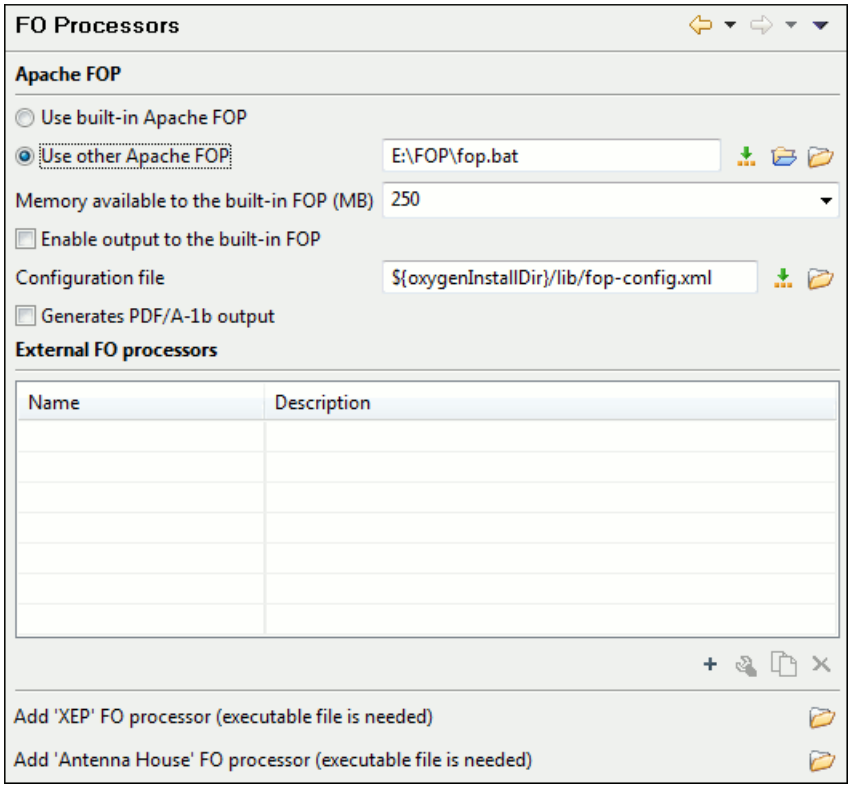


Figure 34: FO Processors Preferences Page

Apache FOP Section

In this section you can configure options for the built-in Apache processor. The following options are available:

Use built-in Apache FOP

Instructs Oxygen XML Editor plugin to use the built-in Apache FO processor. To see the version of the built-in XSL-FO processor for your installation, go to **Help** > **About** > **Libraries** and search for *Apache FOP*.

Use other Apache FOP

Instructs Oxygen XML Editor plugin to use another Apache FO processor that is installed on your computer.

You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Enable the output of the built-in FOP

All Apache FOP output is displayed in a results pane at the bottom of the Oxygen XML Editor plugin window, including warning messages about FO instructions not supported by Apache FOP.

Memory available to the built-in FOP

If your Apache FOP transformations fail with an Out of Memory error (**OutOfMemoryError**), use this combo box to select a bigger value for the amount of memory reserved for FOP transformations.

Configuration file for the built-in FOP

Use this option to specify the path to an Apache FOP configuration file (for example, to render to PDF a document containing Unicode content using a special *true type* font). You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Generates PDF/A-1b output

When selected, PDF/A-1b output is generated.

Note: All fonts have to be embedded, even the implicit ones. More information about configuring metrics files for the embedded fonts can be found in Add a font to the built-in FOP.

Note: You cannot use the `<filterList>` key in the configuration file since the FOP would generate the following error: *The Filter key is prohibited when PDF/A-1 is active*.

External FO Processors Section

In this section you can manage the external FO processors you want to use in transformation scenarios. You can use the two options at the bottom of the section to use the **RenderX XEP** or **Antenna House Formatter** commercial FO processors.

Add 'XEP' FO processor (executable file is needed)

If **RenderX XEP** is already installed on your computer, you can use this button to choose the XEP executable script (`xep.bat` for Windows, `xep` for Linux).

Add 'Antenna House' FO processor (executable file is needed)

If **Antenna House Formatter** is already installed on your computer, you can use this button to choose the Antenna House executable script (`AHFCmd.exe` or `XSLCmd.exe` for Windows, and `run.sh` for Linux/Mac OS).

Note: The built-in **Antenna House Formatter GUI** transformation scenario requires that you configure an external FO processor that runs `AHFormatter.exe` (Windows only). In the external **FO Processor** configuration dialog box, you could use `"${env(AHF63_64_HOME)}\AHFormatter.exe" -d ${fo} -s` for the value in the **Command line** field, although the environment variable name changes for each version of the AH Formatter and for each system architecture (you can install multiple versions side-by-side). For more information, see https://github.com/AntennaHouse/focheck/wiki/focheck.

You can also add external processors or configure existing ones. Press the **New** button to open a configuration dialog box that allows you to add a new external FO processor. Use the other buttons (**Edit**, **Duplicate**, **Delete**) to configure existing external processors.

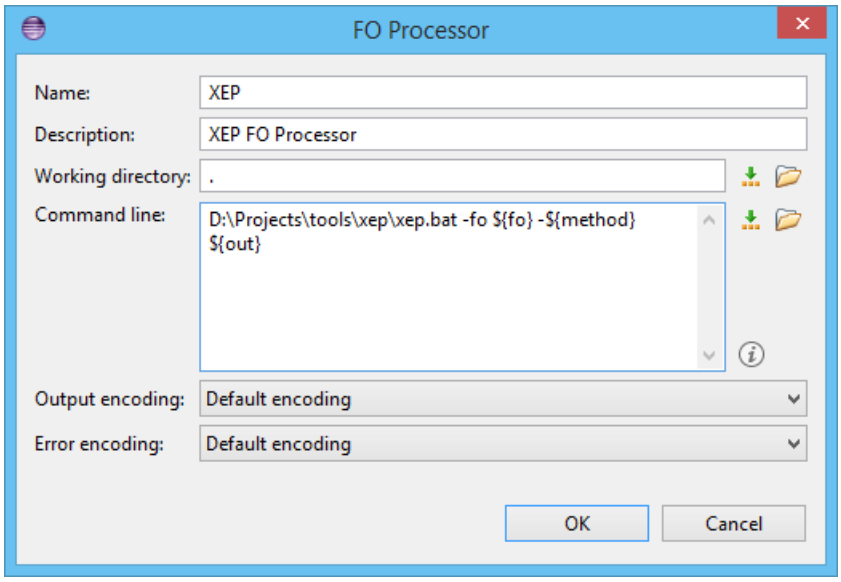


Figure 35: External FO Processor Configuration Dialog Box

The external **FO Processor** configuration dialog box includes the following options:

Name

The name that will be displayed in the list of available FO processors on the FOP tab of the transformation scenario dialog box.

Description

A textual description of the FO processor that will be displayed in the FO processors table and in tooltips of UI components where the processor is selected.

Working directory

The directory where the intermediate and final results of the processing is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button. You can use one of the following editor variables:

- **${homeDir}** - The path to the user home directory.
- **${cfd}** - The path of the current file directory. If the current file is not a local file, the target is the user desktop directory.
- **${pd}** - The project directory.
- **${oxygenInstallDir}** -The Oxygen XML Editor plugin installation directory.

Command line

The command line that starts the FO processor, specific to each processor. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button. You can use one of the following editor variables:

- **${method}** - The FOP transformation method: **pdf**, **ps**, or **txt**.
- **${fo}** - The input FO file.
- **${out}** - The output file.
- **${pd}** - The project directory.
- **${frameworksDir}** - The path of the `frameworks` subdirectory of the Oxygen XML Editor plugin installation directory.
- **${oxygenInstallDir}** - The Oxygen XML Editor plugin installation directory.
- **${ps}** - The platform-specific path separator. It is used between the library files specified in the class path of the command line.

Output Encoding

The encoding of the FO processor output stream that is displayed in a **Results** panel at the bottom of the Oxygen XML Editor plugin window.

Error Encoding

The encoding of the FO processor error stream that is displayed in a **Results** panel at the bottom of the Oxygen XML Editor plugin window.

Profiler Preferences

This section explains the settings available for the XSLT/XQuery Profiler. To access and modify these settings, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **Profiler** (see Debugger Preferences on page 110).

The following profiler settings are available:

Show time

Shows the total time that was spent in the call.

Show inherent time

Shows the inherent time that was spent in the call. The inherent time is defined as the total time of a call minus the time of its child calls.

Show invocation count

Shows how many times the call was called in this particular call sequence.

Time scale

Determines the unit of time measurement. You can choose between milliseconds or microseconds.

Hotspot threshold

Hotspots are ignored below this specified amount (in milliseconds). For more information, see Hotspots View on page 1222.

Ignore invocation less than

Invocations are ignored below this specified amount (in microseconds). For more information, see Invocation Tree View on page 1221.

Percentage calculation

The percentage base that determines what time span percentages are calculated against. You can choose between the following:

- **Absolute** - Percentage values show the contribution to the total time.
- **Relative** - Percentage values show the contribution to the calling call.

XPath Preferences

To configure XPath options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XPath**.

Oxygen XML Editor plugin allows you to customize the following options:

Unescape XPath expression

If selected, the entities of an XPath expressions that you type in the **XPath/XQuery Builder** are unescaped during their execution. For example, the expression:

```
//varlistentry[starts-with(@os,'&#x73;')]
```

is equivalent to:

```
//varlistentry[starts-with(@os,'s')]
```

XPath Default Namespace (only for XPath version 2.0)

Specifies the default namespace to be used for unprefixed element names. You can choose between the following four options:

- **No namespace** - If selected, Oxygen XML Editor plugin considers unprefixed element names of the evaluated XPath expressions as belonging to no namespace.
- **Use the default namespace from the root element** (default selection) - Oxygen XML Editor plugin considers unprefixed element names of the evaluated XPath expressions as belonging to the default namespace declared on the root element of the XML document you are querying.

- **Use the namespace of the root** - If selected, Oxygen XML Editor plugin considers unprefixed element names of the evaluated XPath expressions as belonging to the same namespace as the root element of the XML document you are querying.
- **This namespace** - If selected, you can use the corresponding text field to enter the namespace of the unprefixed elements.

Default prefix-namespace mappings

You can use this table to associate prefixes with namespaces. Use these mappings when you want to define them globally (not for each document). Use the **New** button to add mappings to the list and the **Delete** button to remove mappings.

XQuery Preferences

To configure the **XQuery** options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XQuery**.

The following generic XQuery preferences are available:

Validation engine

Allows you to select the processor that will be used to validate XQuery documents. If you are validating an XQuery file that has an associated validation scenario, Oxygen XML Editor plugin uses the processor specified in the scenario. If no validation scenario is associated, but the file has an associated transformation scenario, the processor specified in the scenario is used. If the processor does not support validation or if no scenario is associated, then the value from this combo box will be used as validation processor.

Size limit of Sequence view (MB)

When the result of an XQuery transformation is set as a sequence (**Present as a sequence** option) in the transformation scenario, the size of one chunk of the result that is fetched from the database in lazy mode in one step is set in this option. If this limit is exceeded, go to the **Sequence** view and click **More results available** to extract more data from the database.

Format transformer output

Specifies whether or not the output of the transformer is formatted and indented (*pretty-print*).

Note: This option is ignored if you choose **Present as a sequence** (lazy extract data from a database) from the associated transformation scenario.

Create structure indicating the type nodes

If selected, Oxygen XML Editor plugin takes the results of a query and creates an XML document containing copies of all items in the sequence, suitably wrapped.

Note: This option is ignored if you choose **Present as a sequence** (lazy extract data from a database) from the associated transformation scenario.

Saxon-HE/PE/EE Preferences

To configure global options for XQuery transformation and validation scenarios that use the **Saxon HE/PE/EE** engine, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XQuery** > **Saxon-HE/PE/EE**.

Oxygen XML Editor plugin allows you to configure the following XQuery options for the Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE):

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is used for XQuery transformation and validation scenarios.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Use linked tree model ("-tree:linked")

This option activates the linked tree model.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.

- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

The following option is available for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Allow calls on extension functions ("-ext")

If selected, calls on external functions are allowed. Selecting this option is recommended in an environment where untrusted stylesheets may be executed. It also disables user-defined extension elements and the writing of multiple output files, both of which carry similar security risks.

The options available specifically for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.
- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable XQuery update ("-update:(on|off)")

This option controls whether or not XQuery update syntax is accepted. The default value is off.

Backup files updated by XQuery ("-backup:(on|off)")

If selected, backup versions for any XML files updated with an XQuery Update are generated. This option is available when the **Enable XQuery update** option is selected.

Saxon HE/PE/EE Advanced Preferences

To configure **Saxon HE/PE/EE Advanced** preferences, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XQuery** > **Saxon-HE/PE/EE** > **Advanced**.

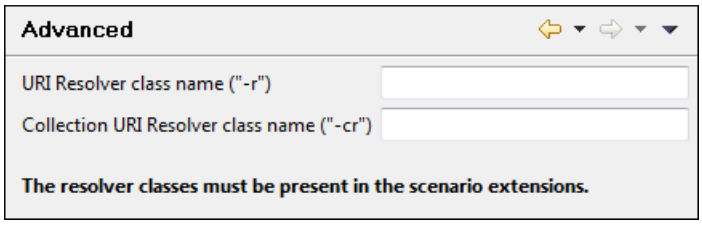


Figure 36: Saxon HE/PE/EE XQuery Advanced Preferences Panel

The advanced XQuery options that can be configured for the Saxon 9.8.0.8 XQuery transformer (all editions: Home Edition, Professional Edition, Enterprise Edition) are as follows:

- **URI Resolver class name** - Allows you to specify a custom implementation for the URI resolver used by the XQuery Saxon 9.8.0.8 transformer (the -r option when run from the command line). The class name must be fully specified and the corresponding *JAR* or class extension must be configured from the dialog box for configuring the XQuery extension for the particular transformation scenario.

  Note: If your `URIResolver` implementation does not recognize the given resource, the `resolve(String href, String base)` method should return a `null` value. Otherwise, the given resource will not be resolved through the *XML Catalog*.
- **Collection URI Resolver class name** - Allows you to specify a custom implementation for the Collection URI resolver used by the XQuery Saxon 9.8.0.8 transformer (the -cr option when run from the command line). The class name must be fully specified and the corresponding *JAR* or class extension must be configured from the dialog box for configuring the XQuery extension for the particular transformation scenario.

XSLT Preferences

To configure the **XSLT** options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT**.

Oxygen XML Editor plugin offers the possibility of using an XSLT transformer implemented in Java (other than the XSLT transformers that come bundled with Oxygen XML Editor plugin). To use another XSLT transformer, specify the name of the transformer factory class. Oxygen XML Editor plugin sets this transformer factory class as the value of the Java property: *javax.xml.transform.TransformerFactory*.

The XSLT preferences page allows you to customize the following options:

JAXP XSLT Transformer - Value

Allows you to set the value of the `TransformerFactory` Java class.

Validation engine - XSLT 1.0

Allows you to select the XSLT engine to be used for validation of XSLT 1.0 documents.

Validation engine - XSLT 2.0

Allows you to select the XSLT engine to be used for validation of XSLT 2.0 documents.

Validation engine - XSLT 3.0

Allows you to select the XSLT engine to be used for validation of XSLT 3.0 documents.

Note: Saxon-HE does not implement any XSLT 3.0 features. Saxon-PE implements a selection of XSLT 3.0 (and XPath 3.0) features, with the exception of schema-awareness and streaming. Saxon-EE implements additional features relating to streaming (processing of a source document without constructing a tree in memory. For further details about XSLT 3.0 conformance, go to http://www.saxonica.com/documentation/index.html#!conformance/xslt30.

XSLT Editor Content Completion Options link

Use this link to switch to the **XSLT Content Completion** preferences page, where you can configure the XSLT content completion options.

MSXML Preferences

To configure the MSXML options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **MSXML**.

The options in this preferences page for the MSXML 3.0 and 4.0 processors are as follows:

Validate documents during parse phase

If selected, and either the source or stylesheet document has a DTD or schema that its content can be checked against, validation is performed.

Do not resolve external definitions during parse phase

By default, MSXML instructs the parser to resolve external definitions such as document type definition (DTD), external subsets or external entity references when parsing the source and style sheet documents. If this option is selected, the resolution is disabled.

Strip non-significant whitespaces

If selected, strips non-significant white space from the input XML document during the load phase. Selecting this option can lower memory usage and improve transformation performance while, in most cases, creating equivalent output.

Show time information

If selected, the relative speed of various transformation steps can be measured, including:

- The time to load, parse, and build the input document.
- The time to load, parse, and build the stylesheet document.
- The time to compile the stylesheet in preparation for the transformation.
- The time to execute the stylesheet.

Start transformation in this mode

Although stylesheet execution usually begins in the empty mode, this default behavior may be changed by specifying another mode. Changing the start mode allows execution to jump directly to an alternate group of templates.

MSXML.NET Preferences

To configure the **MSXML.NET** options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **MSXML.NET**.

The options in this preferences page for the MSXML.NET processor are as follows:

Enable XInclude processing

If selected, XInclude references will be resolved when MSXML.NET is used as the transformer in the XSLT transformation scenario.

Validate documents during parse phase

If selected, and either the source or stylesheet document has a DTD or schema that its content can be checked against, validation is performed.

Do not resolve external definitions during parse phase

By default, MSXML instructs the parser to resolve external definitions such as document type definition (DTD), external subsets or external entity references when parsing the source and style sheet documents. If this option is selected, the resolution is disabled.

Strip non-significant whitespaces

If selected, strips non-significant white space from the input XML document during the load phase. Selecting this option can lower memory usage and improve transformation performance while, in most cases, creating equivalent output.

Show time information

If selected, the relative speed of various transformation steps can be measured, including:

- The time to load, parse, and build the input document.
- The time to load, parse, and build the stylesheet document.
- The time to compile the stylesheet in preparation for the transformation.
- The time to execute the stylesheet.

Forces ASCII output encoding

There is a known problem with the .NET 1.X XSLT processor (*System.Xml.Xsl.XslTransform* class). It does not support escaping of characters as XML character references when they cannot be represented in the output encoding. This means that it will be outputted as ' ? ' . Usually this happens when output encoding is set to ASCII. If this option is selected, the output is forced to be ASCII encoded and all non-ASCII characters get escaped as XML character references (&#nnnn ; form).

Allow multiple output documents

This option allows you to create multiple result documents using the *exsl:document* extension element.

Use named URI resolver class

This option allows you to specify a custom URI resolver class to resolve URI references in `xsl:import` and `xsl:include` instructions (during XSLT stylesheet loading phase) and in `document()` functions (during XSL transformation phase).

Assembly file name for URI resolver class

This option specifies a file name of the assembly where the specified resolver class can be found. The **Use named URI resolver class** option specifies a partially or fully qualified URI resolver class name (for example, *Acme.Resolvers.CacheResolver*). Such a name requires additional assembly specification using this option or the **Assembly GAC name for URI resolver class** option, but fully qualified class name (which always includes an assembly specifier) is *all-sufficient*. See MSDN for more info about fully qualified class names.

Assembly GAC name for URI resolver class

This option specifies partially or fully qualified name of the assembly in the global assembly cache (GAC) where the specified resolver class can be found. See MSDN for more info about partial assembly names.

List of extension object class names

This option allows to specify extension object classes, whose public methods then can be used as extension functions in an XSLT stylesheet. It is a comma-separated list of namespace-qualified extension object class names. Each class name must be bound to a namespace URI using prefixes, similar to providing XSLT parameters.

Use specified EXSLT assembly

MSXML.NET supports a rich library of the EXSLT and EXSLT.NET extension functions embedded or in a *plugin* EXSLT.NET library. EXSLT support is enabled by default and cannot be disabled in this version. Use this option if you want to use an external EXSLT.NET implementation instead of a built-in one.

Credential loading source xml

This option allows you to specify user credentials to be used when loading XML source documents. The credentials should be provided in the *username:password@domain* format (all parts are optional).

Credential loading stylesheet

This option allows you to specify user credentials to be used when loading XSLT stylesheet documents. The credentials should be provided in the *username:password@domain* format (all parts are optional).

Saxon-HE/PE/EE Preferences

To configure global options for XSLT transformation and validation scenarios that use the **Saxon HE/PE/EE** engine, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **Saxon** > **Saxon-HE/PE/EE**.

Saxon-HE/PE/EE Options

Oxygen XML Editor plugin allows you to configure the following XSLT options for the Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE):

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is executed for XSLT transformation and validation processes.

Debugger trace into XPath expressions (applies to debugging sessions)

Instructs the XSLT Debugger to *step into* XPath expressions.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Line numbering ("-l")

Line numbers where errors occur are included in the output messages.

Expand attributes defaults ("-expand")

Specifies whether or not the attributes defined in the associated DTD or XML Schema are expanded in the output of the transformation you are executing.

DTD validation of the source ("-dtd")

Specifies whether or not the source document will be validated against their associated DTD. You can choose from the following:

- **On** - Requests DTD validation of the source file and of any files read using the `document()` function.
- **Off** - (default setting) Suppresses DTD validation.
- **Recover** - Performs DTD validation but treats the errors as non-fatal.

  Note: Any external DTD is likely to be read even if not used for validation, since DTDs can contain definitions of entities.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following options are available for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Register Saxon-JS extension functions and instructions

Registers the Saxon-CE extension functions and instructions when compiling a stylesheet using the Saxon 9.8.0.8 processors.

Note: Saxon-CE, being JavaScript-based, was designed to run inside a web browser. This means that you will use Oxygen XML Editor plugin only for developing the Saxon-CE stylesheet, leaving the execution part to a web browser. See more details about executing such a stylesheet on Saxonica's website.

Allow calls on extension functions ("-ext")

If selected, the stylesheet is allowed to call external Java functions. This does not affect calls on integrated extension functions, including Saxon and EXSLT extension functions. This option is useful when loading an untrusted stylesheet (such as from a remote site using `http://[URL]`). It ensures that the stylesheet cannot call arbitrary Java methods and thus gain privileged access to resources on your machine.

Enable assertions ("-ea")

In XSLT 3.0, you can use the **xsl:assert** element to make assertions in the form of XPath expressions, causing a dynamic error if the assertion turns out to be false. If this option is selected, XSLT 3.0 `xsl:assert` instructions are enabled. If it is not selected (default), the assertions are ignored.

Saxon-EE Options

The options available specifically for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.

- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Saxon-HE/PE/EE Advanced Preferences

To configure the **Saxon HE/PE/EE Advanced** preferences, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **Saxon** > **Saxon-HE/PE/EE** > **Advanced**.

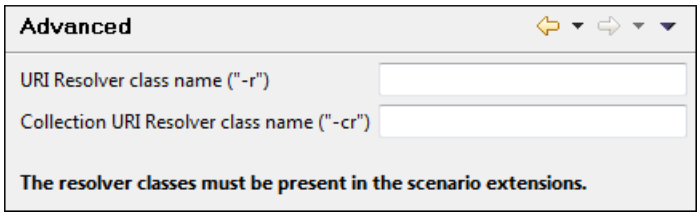


Figure 37: Saxon HE/PE/EE XSLT Advanced Preferences Panel

You can configure the following advanced XSLT options for the Saxon 9.8.0.8 transformer (all three editions: Home Edition, Professional Edition, Enterprise Edition):

- **URI Resolver class name ("-r")** - Specifies a custom implementation for the URI resolver used by the XSLT Saxon 9.8.0.8 transformer (the -r option when run from the command line). The class name must be fully specified and the corresponding `jar` or `class` extension must be configured from the dialog box for configuring the XSLT extension for the particular transformation scenario.
- **Collection URI Resolver class name ("-cr")** - Specifies a custom implementation for the Collection URI resolver used by the XSLT Saxon 9.8.0.8 transformer (the -cr option when run from the command line). The class name must be fully specified and the corresponding `jar` or `class` extension must be configured from the dialog box for configuring the XSLT extension for the particular transformation scenario.

Saxon6 Preferences

To configure the **Saxon 6** options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **Saxon** > **Saxon6**.

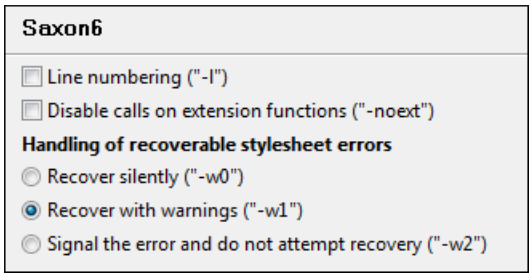


Figure 38: Saxon 6 XSLT Preferences Panel

The built-in Saxon 6 XSLT processor can be configured with the following options:

- **Line numbering** - Specifies whether or not line numbers are maintained and reported in error messages for the XML source document.

- **Disable calls on extension functions** - If selected, external function calls are not allowed. Selecting this option is recommended in an environment where untrusted stylesheets may be executed. It also disables user-defined extension elements and the writing of multiple output files, since they carry similar security risks.
- **Handling of recoverable stylesheet errors** - Allows you to choose how dynamic errors are handled. One of the following options can be selected:
  - **recover silently** - Continue processing without reporting the error.
  - **recover with warnings** - Issue a warning but continue processing.
  - **signal the error and do not attempt recovery** - Issue an error and stop processing.

XSLTProc Preferences

To configure **XSLTProc** options, open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **XSLT** > **XSLTProc**.

The following options are available in this preferences page:

- **Enable XInclude processing** - If selected, XInclude references will be resolved when XSLTProc is used as transformer in XSLT transformation scenarios.
- **Skip loading the document's DTD** - If selected, the DTD specified in the DOCTYPE declaration will not be loaded.
- **Do not apply default attributes from document's DTD** - If selected, the default attributes declared in the DTD and not specified in the document are not included in the transformed document.
- **Do not use Internet to fetch DTD's, entities or docs** - If selected, the remote references to DTD's and entities are not followed.
- **Maximum depth in templates stack** - If this limit of maximum templates depth is reached the transformation ends with an error.
- **Verbosity** - If selected, the transformation will output detailed status messages about the transformation process in the **Warnings** view.
- **Show version of libxml and libxslt used** - If selected, Oxygen XML Editor plugin will display in the **Warnings** view the version of the **libxml** and **libxslt** libraries invoked by XSLTProc.
- **Show time information** - If selected, the **Warnings** view will display the time necessary for running the transformation.
- **Show debug information** - If selected, the **Warnings** view will display debug information about what templates are matched, parameter values, and so on.
- **Show all documents loaded during processing** - If selected, Oxygen XML Editor plugin will display in the **Warnings** view the URL of all the files loaded during transformation.
- **Show profile information** - If selected, Oxygen XML Editor plugin will display in the **Warnings** view a table with all the matched templates, and for each template will display: the match XPath expression, the template name, the number of template modes, the number of calls, the execution time.
- **Show the list of registered extensions** - If selected, Oxygen XML Editor plugin will display in the **Warnings** view a list with all the registered extension functions, extension elements and extension modules.
- **Refuses to write to any file or resource** - If selected, the XSLTProc processor will not write any part of the transformation result to an external file on disk. If such an operation is requested by the processed XSLT stylesheet the transformation ends with a runtime error.
- **Refuses to create directories** - If selected, the XSLTProc processor will not create any directory during the transformation process. If such an operation is requested by the processed XSLT stylesheet the transformation ends with a runtime error.

XML Structure Outline Preferences

To configure options in regards to the **Outline** view, open the **Preferences** dialog box and go to **XML Structure Outline**. It contains the following options:

Preferred attribute names for display

The preferred attribute names when displaying the attributes of an element in the **Outline** view. If there is no preferred attribute name specified, the first attribute of an element is displayed.

Enable outline drag and drop

Drag and drop is disabled for the tree displayed in the **Outline** view only if there is a possibility to accidentally change the structure of the document by such operations.

Configuring Options

A set of options controls the behavior of Oxygen XML Editor plugin, allowing you to configure most of the features. To offer you the highest degree of flexibility in customizing the application to fit the needs of your organization, Oxygen XML Editor plugin includes several distinct layers of option values.

The option layers are as follows (sorted from high priority to low):

- **Global Options**

  Allows individual users to personalize Oxygen XML Editor plugin according to their specific needs.
- **Customized Default Options**

  Designed to customize the initial option values for a group of users, this layer allows an administrator to deploy the application preconfigured with a standardized set of option values.

  Note: Once this layer is set, it represents the initial state of Oxygen XML Editor plugin when an end-user uses the **Restore defaults** or **Reset Global Options** actions.
- **Default Options**

  The predefined default or built-in values, tuned so that Oxygen XML Editor plugin behaves optimally in most working environments.

Important: If you set a specific option in one of the layers, but it is not applied in the application, make sure that one of the higher priority layers does not overwrite it.

Customizing Default Options

Oxygen XML Editor plugin has an extensive set of options that you can configure. When Oxygen XML Editor plugin in installed, these options are set to default values. You can provide a different set of default values for an installation using an XML *options file*.

Creating an XML *Options File*

To create an *options file*, follow these steps:

1. It is recommended that you use a fresh install for this procedure, to make sure that you do not copy personal or local preferences.
2. Open Oxygen XML Editor plugin and open the **Preferences** dialog box .
3. Go through the options and set them to the desired defaults.
4. Go to back to the main preferences page and click **Export Global Options** to create an XML options file.

Configuring an Installation to Use Customized Default Options

There are several methods that you can use to configure an Oxygen XML Editor plugin installation to use the customized default options from the created XML options file.

The possible methods for using customized default options during an installation include:

- **Copy the XML Options File to the Installation Directory**

  In the *[OXYGEN_INSTALL_DIR]*, create a folder called `preferences` and copy the created XML options file into it (for example: *[ECLIPSE-INSTALL-DIR]*`/plugins/com.oxygenxml.editor/preferences/default.xml`, or if the plugin was installed as a drop-in: *[ECLIPSE-INSTALL-DIR]*`/dropins/com.oxygenxml.editor/preferences/default.xml`).
- **Specify a Path to the XML Options File in a Startup Parameter**

Set the path to the XML options file as the value of the `com.oxygenxml.default.options` system property in the Eclipse configuration file (*`[ECLIPSE-INSTALL-DIR]`*`/configuration/config.ini`). The path can be specified with any of the following:

- A URL or file path relative to the application installation folder. For example:

  ```
  com.oxygenxml.default.options=file\:default.xml
  ```

  This will make Oxygen XML Editor plugin look for `default.xml` inside the installation folder (for example: *`[ECLIPSE-INSTALL-DIR]`*`/plugins/com.oxygenxml.editor/preferences/default.xml`, or if the plugin was installed as a drop-in: *`[ECLIPSE-INSTALL-DIR]`*`/dropins/com.oxygenxml.editor/preferences/default.xml`).
- A system variable that specifies the file path. For example:

  ```
  com.oxygenxml.default.options=file\:${system(CONFIG)}/default.xml
  ```
- An environmental variable that specifies the file path. For example:

  ```
  com.oxygenxml.default.options=file\:${env(CONFIG)}/default.xml
  ```

Note: In the Eclipse configuration file, the backslash (\) is considered a special character. Therefore, use forward slashes for separators inside the file path.

Importing/Exporting/Resetting Global Options

Actions for importing, exporting, and resetting global options are available in the preferences page of the Oxygen XML Editor plugin. To open this page, open the **Preferences** dialog box . The export operation allow you to save global preferences as an XML options file and the import operation allows you to load the options file. You can use this file to reload the options on your computer or to share with others.

The following buttons are available at the bottom of the preferences page:

Reset Global Options

Restores the preference to the factory defaults or to customized defaults. This action also resets the transformation and validation scenarios to the default scenarios and clears recently used document templates.

Import Global Options

Allows you to import a set of *Global Options* from an exported XML properties file. You can also select a project file (`.xpr`) to import all the *Global Options* that are set in that project file. After you select a file, the **Import Global Options** dialog box is displayed, and it informs you that the operation will only override the options that are included in the imported file. You can select the **Reset all other options to their default values** option to reset all options to the default values before the file is imported.

Export Global Options

Allows you to export *Global Options* to an XML properties file. Some user-specific options that are private are not included. For example, passwords and the name of the *Review Author* is not included in the export operation.

Associating a File Extension with Oxygen XML Editor plugin

To associate a file extension with Oxygen XML Editor plugin on Windows:

1. Go to the Windows **Start** menu and open **Control Panel**.
2. Go to **Default Programs**.
3. Click **Associate a file type or protocol with a program**.
4. Click the file extension you want to associate with Oxygen XML Editor plugin, then click the **Change program** button.
5. In the subsequent dialog box, browse for and choose Oxygen XML Editor plugin.

6. Click **OK**.

To associate a file extension with Oxygen XML Editor plugin on Mac OS:

1. In **Finder**, select a file and from the contextual menu select **Get Info**.
2. In the **Open With** subsection, select **Other** from the application combo box.
3. Browse to and select Oxygen XML Editor plugin.
4. Select the **Always Open With** option, then click **Add**.
5. If you want all files of that type to be opened in Oxygen XML Editor plugin, click the **Change All** button and then the **Continue** button in the subsequent confirmation dialog box.

Import/Export Transformation or Validation Scenarios

You can export global transformation and validation scenarios into specialized *scenarios* files. You can import transformation and validation scenarios from various sources (such as project files, *framework* option files, or exported scenario files). To access these import and export actions, open the **Preferences** dialog box and go to **Scenarios Management**. The following actions are available:

Import Global Transformation Scenarios

Loads a set of transformation scenarios from a project file, *framework* options file, or exported scenarios file.

Export Global Transformation Scenarios

Stores a set of global transformation scenarios in a specialized *scenarios* file.

Import Global Validation Scenarios

Loads a set of validation scenarios from a project file, *framework* options file, or exported scenarios file.

Export Global Validation Scenarios

Stores a set of global validation scenarios in a specialized *scenarios* file.

The **Export Global Transformation Scenarios** and **Export Global Validation Scenarios** options are used to store all the scenarios in a separate file. Associations between document URLs and scenarios are also saved in this file. You can load the saved scenarios using the **Import Global Transformation Scenarios** and **Import Global Validation Scenarios** actions. To distinguish the existing scenarios and the imported ones, the names of the imported scenarios contain the word *import*.

Editor Variables

An editor variable is a shorthand notation for context-dependent information, such as a file or folder path, a time-stamp, or a date. It is used in the definition of a command (for example, the input URL of a transformation, the output file path of a transformation, or the command line of an external tool) to make a command or a parameter generic and re-usable with other input files. When the same command is applied to multiple files, the notation is expanded at the execution of the command so that the same command has different effects depending on the actual file.

Oxygen XML Editor plugin includes a variety of built-in editor variables. You can also create your own custom editor variables by using the **Custom Editor Variables** preferences page.

You can use the following editor variables in Oxygen XML Editor plugin commands of external engines or other external tools, and in various places in the application, such as in transformation scenarios, and validation scenarios:

- **${activeConditionSet}** - Current active profiling condition set name. If there is no active condition set, the variable will be replaced with an *empty string*.
- **${af}** - The local file path of the ZIP archive that includes the current edited document.
- **${afd}** - The local directory path of the ZIP archive that includes the current edited document.
- **${afdu}** - The URL path of the directory of the ZIP archive that includes the current edited document.
- **${afn}** - The file name (without parent directory and without file extension) of the zip archive that includes the current edited file.

- **${afne}** - The file name (with file extension, for example `.zip` or `.epub`, but without parent directory) of the zip archive that includes the current edited file.
- **${afu}** - The URL path of the ZIP archive that includes the current edited document.
- **${ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default_value')}** - To prompt for values at runtime, use the *ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default-value")* editor variable. You can set the following parameters:
  - **'message'** - The displayed message. Note the quotes that enclose the message.
  - **'default-value'** - Optional parameter. Provides a default value.
  - **type** - Optional parameter, with one of the following values:

    Note: The title of the dialog box will be determined by the type of parameter and as follows:

    - For *url* and *relative_url* parameters, the title will be the name of the parameter and the value of the *'message'*.
    - For the other parameters listed below, the title will be the name of that respective parameter.
    - If no parameter is used, the title will be "Input".

Parameter	
url	**Format:** *${ask('message', url, 'default_value')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin checks that the provided URL is valid.
	Example: • *${ask('Input URL', url)}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. • *${ask('Input URL', url, 'http://www.example.com')}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. The input field displays the default value *http://www.example.com*.
password	**Format**: *${ask('message', password, 'default')}*
	Description: The input is hidden with bullet characters.
	Example: • *${ask('Input password', password)}* - The displayed dialog box has the name *'Input password'* and the input is hidden with bullet symbols. • *${ask('Input password', password, 'abcd')}* - The displayed dialog box has the name *'Input password'* and the input hidden with bullet symbols. The input field already contains the default **abcd** value.
generic	**Format**: *${ask('message', generic, 'default')}*
	Description: The input is considered to be generic text that requires no special handling.
	Example: • *${ask('Hello world!')}* - The dialog box has a *Hello world!* message displayed. • *${ask('Hello world!', generic, 'Hello again!')}* - The dialog box has a *Hello world!* message displayed and the value displayed in the input box is *'Hello again!'*.
relative_url	**Format:** *${ask('message', relative_url, 'default')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin tries to make the URL relative to that of the document you are editing. **Note:** If the *$ask* editor variable is expanded in content that is not yet saved (such as an *untitled* file, whose path cannot be determined), then Oxygen XML Editor plugin will transform it into an absolute URL.

Parameter	
	Example: • *${ask('File location', relative_url, 'C:/example.txt')}* - The dialog box has the name *'File location'*. The URL inserted in the input box is made relative to the current edited document location.
combobox	**Format:** *${ask('message', combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a drop-down menu. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated value (*real_value*). **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems. The associated value will be returned based upon your selection. **Note:** In this example, the default value is indicated by the *osx* key. However, the same result could be obtained if the default value is indicated by *Mac OS X*, as in the following example: *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'Mac OS X')}* • *${ask('Mobile OS', combobox, ('win':'Windows Mobile';'ios':'iOS';'and':'Android'), 'Android')}*
editable_combobox	**Format:** *${ask('message', editable_combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a drop-down menu with editable elements. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated real value (*real_value*) or the value inserted when you edit a list entry. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', editable_combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems and also allows you to edit the entry. The associated value will be returned based upon your selection or the text you input.
radio	**Format:** *${ask('message', radio, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a series of radio buttons. Each radio button displays a *'rendered_value* and will return an associated *real_value*. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.

Parameter	
	Example: • *${ask('Operating System', radio, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The radio button group allows you to choose between the three operating systems. **Note:** In this example `Mac OS X` is the default selected value and if selected it would return *osx* for the output.

- **${author.name}** - Expands to the current author name that is set in the **Review** preferences page.
- **${caret}** - The position where the cursor is located. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.
- **${cf}** - Current file as file path, that is the absolute file path of the current edited document.
- **${cfd}** - Current file folder as file path, that is the path of the current edited document up to the name of the parent folder.
- **${cfdu}** - Current file folder as URL, that is the path of the current edited document up to the name of the parent folder, represented as a URL.
- **${cfn}** - Current file name without extension and without parent folder. The current file is the one currently opened and selected.
- **${cfne}** - Current file name with extension. The current file is the one currently opened and selected.
- **${configured.ditaot.dir}** - The default directory of the DITA Open Toolkit distribution, as configured in the **DITA** preferences page.
- **${cp}** - Current page number. Used to display the current page number on each printed page in the **Editor / Print** Preferences page.
- **${currentFileURL}** - Current file as URL, that is the absolute file path of the current edited document represented as URL.
- **${date(pattern)}** - Current date. The allowed patterns are equivalent to the ones in the Java SimpleDateFormat class. **Example:** *yyyy-MM-dd*;

  Note: This editor variable supports both the **xs:date** and **xs:datetime** parameters. For details about **xs:date**, go to http://www.w3.org/TR/xmlschema-2/#date. For details about **xs:datetime**, go to http://www.w3.org/TR/xmlschema-2/#dateTime.
- **${dbgXML}** - The local file path to the XML document that is current selected in the Debugger source combo box (for tools started from the XSLT/XQuery Debugger).
- **${dbgXSL}** - The local file path to the XSL/XQuery document that is current selected in the Debugger stylesheet combo box (for tools started from the XSLT/XQuery Debugger).
- **${dita.dir.url}** - A special local contextual editor variable that gets expanded only in the **Libraries** dialog box that is accessible from the **Advanced** tab of DITA transformation scenarios. The **Libraries** dialog box allows you to specify additional libraries (*JAR* files or additional class paths) to be used by the transformer. This *${dita.dir.url}* editor variable gets expanded to the value of the *dita.dir* parameter from the **Parameters** tab of the DITA transformation scenario.
- **${ds}** - The path of the detected schema as a local file path for the current validated XML document.
- **${dsu}** - The path of the detected schema as a URL for the current validated XML document.
- **${env(VAR_NAME)}** - Value of the *VAR_NAME* environment variable. The environment variables are managed by the operating system. If you are looking for Java System Properties, use the **${system(var.name)}** editor variable.
- **${framework(fr_name)}** - The path (as URL) of the *fr_name framework*.
- **${framework}** - The path (as URL) of the current *framework*, as part of the *`[OXYGEN_INSTALL_DIR]`*`/frameworks` directory.
- **${frameworkDir(fr_name)}** - The path (as file path) of the *fr_name framework*.

  Note: Since multiple *frameworks* might have the same name (although it is not recommended), for both *${framework(fr_name)}* and *${frameworkDir(fr_name)}* editor variables Oxygen XML Editor plugin employs the following algorithm when searching for a given *framework* name:

    - All *frameworks* are sorted, from high to low, according to their **Priority** setting from the **Document Type** configuration dialog box. Only *frameworks* that have the **Enabled** checkbox selected are taken into account.
    - Next, if the two or more *frameworks* have the same name and priority, a further sorting based on the **Storage** setting is made, in the exact following order:
        - *Frameworks* stored in the internal Oxygen XML Editor plugin options.
        - Additional *frameworks* added in the **Locations** preferences page.
        - *Frameworks* installed using the add-ons support.
        - *Frameworks* found in the main *framework* location (**Default** or **Custom**).
- **${frameworkDir}** - The path (as file path) of the current *framework*, as part of the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory.
- **${frameworks}** - The path (as URL) of the *[OXYGEN_INSTALL_DIR]* directory.
- **${frameworksDir}** - The path (as file path) of the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory.
- **${home}** - The path (as URL) of the user home folder.
- **${homeDir}** - The path (as file path) of the user home folder.
- **${i18n(key)}** - Editor variable used only at *framework*-level to allow translating names and descriptions of **Author** mode actions in multiple actions. For more details, see Localizing Frameworks on page 1264.
- **${id}** - Application-level unique identifier. It is a short sequence of 10-12 letters and digits that is not guaranteed to be universally unique.
- **${makeRelative(base,location)}** - Takes two URL-like paths as parameters and tries to return a relative path. A use-case would be to insert content references to a certain reusable component when defining code templates.

  Example:

  ```
  ${makeRelative(${currentFileURL}, ${dictionaryURL}#gogu)}
  ```
- **${oxygenHome}** - Oxygen XML Editor plugin installation folder as URL.
- **${oxygenInstallDir}** - Oxygen XML Editor plugin installation folder as file path.
- **${pd}** - The file path to the folder that contains the current project file (`.xpr`).
- **${pdu}** - The URL path to the folder that contains the current project file (`.xpr`).
- **${pluginDir(pluginID)}** - Each plugin has an ID specified in its `plugin.xml` file. This editor variable expands to the file path of the folder that contains the `plugin.xml` file where that specific plugin ID is located.
- **${pluginDirURL(pluginID)}** - Each plugin has an ID specified in its `plugin.xml` file. This editor variable expands to the URL path of the folder that contains the `plugin.xml` file where that specific plugin ID is located.
- **${pn}** - Current project name.
- **${ps}** - Path separator, which is the separator that can be used on the current platform (Windows, OS X, Linux) between library files specified in the class path.
- **${rootMapDir}** - Will be expanded to the current root map parent directory file path.
- **${rootMapDirURL}** - Will be expanded to the current root map parent directory URL.
- **${rootMapFile}** - Will be expanded to the current root map file path.
- **${rootMapURL}** - Will be expanded to the current root map URL.
- **${selection}** - The current selected text content in the current edited document. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.
- **${system(var.name)}** - Value of the *var.name* Java System Property. The Java system properties can be specified in the command line arguments of the Java runtime as *-Dvar.name=var.value*. If you are looking for operating system environment variables, use the **${env(VAR_NAME)}** editor variable instead.
- **${timeStamp}** - Time stamp, that is the current time in Unix format. For example, it can be used to save transformation results in multiple output files on each transformation.
- **${tp}** - Total number of pages in the document. Used to display the total number of pages on each printed page in the **Editor / Print** Preferences page.
- **${tsf}** - The transformation result file path. If the current opened file has an associated scenario that specifies a transformation output file, this variable expands to it.
- **${uuid}** - Universally unique identifier, a unique sequence of 32 hexadecimal digits generated by the Java UUID class.

- **${xmlCatalogFilesList}** - A list of file paths that point to all known XML catalog files, separated by semi-colons (;).
- **${xpath_eval(expression)}** - Evaluates an XPath 3.0 expression. Depending on the context, the expression can be:
  - **static** - When executed in a non-XML context. For example, you can use such static expressions to perform string operations on other editor variables for composing the name of the output file in a transformation scenario's **Output** tab.

    Example:

    ```
    ${xpath_eval(upper-case(substring('${cfn}', 1, 4)))}
    ```
  - **dynamic** - When executed in an XML context. For example, you can use such dynamic expression in a code template or as a value of a parameter of an **Author** mode operation.

    Example:

    ```
    ${ask('Set new ID attribute', generic, '${xpath_eval(@id)}')}
    ```

Custom Editor Variables

An editor variable can be created and included in any user-defined expression where a built-in editor variable is also allowed. For example, a custom editor variable may be necessary for configuring the command line of an external tool, the working directory of a custom validator, the command line of a custom XSLT engine, or a custom FO processor.

You can create or configure custom editor variables in the **Custom Editor Variables** preferences page. To create a custom editor variable, follow these steps:

1. Open the **Preferences** dialog box and go to **Custom Editor Variables**.
2. Click the **New** button at the bottom of the table.
3. Use the subsequent dialog box to specify the **Name**, **Value**, and **Description** for the new editor variable.
4. Click **OK** to save your configuration.

Related Information:
Editor Variables on page 125

Custom System Properties

A variety of Java system properties can be set in the application to influence its behavior.

com.oxygenxml.disable.http.protocol.handlers

- **Allowed Values:** `true` or `false`
- **Default Value:** `false`
- **Purpose:** By default, Oxygen XML Editor plugin uses the open source Apache HTTP Client software for HTTP(S) connections. If set to `True`, the default Java Sun HTTP(S) will be used instead. You will also lose **WebDAV** support and possibly other related features.

com.oxygenxml.present.license.reminders

- **Allowed Values:** `true` or `false`
- **Default Value:** `true`
- **Purpose:** When set to `false`, Oxygen XML Editor plugin will not display the messages that remind you to renew your Support and Maintenance Pack that covers your current license.

com.oxygenxml.enable.content.reference.caching

- **Allowed Values:** `true` or `false`
- **Default Value:** `true`
- **Purpose:** Enables content reference caching.

com.oxygenxml.eclipse.remove.grid.editing.mode

- **Allowed Values:** `true` or `false`
- **Default Value:** `false`
- **Purpose:** When set to `false`, Oxygen XML Editor plugin does not show the Grid editing mode when opening an XML document.

com.oxygenxml.default.java.accessibility

- **Allowed Values:** `true` or `false`
- **Default Value:** `false`
- **Purpose:** System property that can be set to `true` to force the default detection of java accessibility. If *com.sun.java.accessibility.AccessBridge* cannot be loaded, Oxygen XML Editor plugin forces the Java accessibility to be disabled.

com.oxygenxml.floating.license.timeout

- **Allowed Values:** An integer (minutes)
- **Default Value:** `120`
- **Purpose:** Stores the time interval (in minutes) before floating licenses are released in case of application's inactivity.

com.oxygenxml.language

- **Allowed Values:** Language code (for example, `en-us`)
- **Default Value:** N/A
- **Purpose:** Property that holds the language code set during installation.

com.oxygenxml.default.options

- **Allowed Values:** A URL-type relative or absolute path.
- **Default Value:** N/A
- **Purpose:** Provides the path to an XML file containing default application options. For more details, see Customizing Default Options on page 123.

com.oxygenxml.customOptionsDir

- **Allowed Values:** A file system absolute path pointing to a folder.
- **Default Value:** N/A
- **Purpose:** Sets a folder to be used by the application to load and save preference files. The default location where the options are saved varies according to the operating system. See Importing/Exporting/Resetting Global Options on page 124.

com.oxygenxml.ApplicationDataFolder **(Windows only)**

- **Allowed Values:** A file system absolute path pointing to a folder.
- **Default Value:** `%APPDATA%`
- **Purpose:** When the application runs on Windows, you can set this property to change the location where the application considers that the *APPDATA* folder is located.

com.oxygenxml.editor.frameworks.url

- **Allowed Values:** A URL-type absolute path.
- **Default Value:** `OXYGEN_DIR \frameworks`
- **Purpose:** Changes the folder where the application considers that the main *frameworks* are installed. It has the same effect as changing the custom *frameworks* directory value in the **Location** preferences page.

com.oxygenxml.MultipleInstances

- **Allowed Values:** `true` or `false`
- **Default Value:** `false`
- **Purpose:** If set to `true`, multiple instances of the application are allowed to be started.

com.oxygenxml.xep.location

- **Allowed Values:** A file system absolute path pointing to a folder.
- **Default Value:** N/A
- **Purpose:** Points to a folder where RenderX XEP is installed. Has the same effect as configuring XEP in the **FO Processors** preferences page.

com.oxygenxml.additional.classpath

- **Allowed Values:** A list of *JAR*-type resources separated by a classpath separator.
- **Default Value:** N/A
- **Purpose:** An additional list of libraries to be used in the application's internal class loader in addition to the libraries specified in the `lib` folder.

com.oxygenxml.user.home **(Windows only)**

- **Allowed Values:** A file system absolute path pointing to a folder.
- **Default Value:** `USERPROFILE` folder
- **Purpose:** Overwrites the user home directory that was implicitly detected for the application.

com.oxygenxml.use.late.delegation.for.author.extensions

- **Allowed Values:** `true` or `false`
- **Default Value:** `true`
- **Purpose:** All Java extensions in a *framework* configuration are instantiated in a separate class loader. When **true**, the *JAR* libraries used in a certain document type will have priority to resolve classes before delegating to the parent class loader. When **false**, the parent class loader will take precedence.

com.oxygenxml.stack.size.validation.threads

- **Allowed Values:** The number of bytes used for validation threads.
- **Default Value:** `5*1024*1024`
- **Purpose:** Some parts of the application (validation, content completion) that use the Relax NG parser sometimes require a larger *Thread* stack size to parse complex schemas. The default value should be more than enough.

com.oxygenxml.jing.skip.validation.xhtml.data.attrs

- **Allowed Values:** `true` or `false`
- **Default Value:** `true`
- **Purpose:** By default, the Relax NG validation was configured to skip validation for XHTML attributes that start with "data-", which should be skipped from validation according to the XHTML 5 specification.

com.oxygenxml.report.problems.url

- **Allowed Values:** User defined URL
- **Default Value:** N/A
- **Purpose:** The URL where a problem reported through the **Report Problem** dialog box is sent. The report is sent in XML format using the **report** parameter with the POST HTTP method.

com.oxygenxml.parallel.title.computing.threads

- **Allowed Values:** Integers
- **Default Value:** 4
- **Purpose:** The number of parallel threads that will be used to compute referenced topic titles. Increasing this value reduces the amount of time it takes to compute topic titles in the **DITA Maps Manager** view.

com.oxygenxml.hidpi.scaling

- **Allowed Values:** Numerical values between 1 and 2 (1, 1.5, and 2 have been tested, and for example, 1.5 is for 150% scaling)
- **Default Value:** N/A
- **Purpose:** Used to override the HiDPI scaling detection to force a specific scaling setting. This is helpful if you encounter scaling detection issues in Windows or Linux.

Localizing of the User Interface

To localize the Oxygen XML Editor plugin, you can use one of the following methods:

- Localization through the update site:

  Start Eclipse, go to **Help** > **Install New Software**. Press Add Site in the **Available Software** tab of the **Software Updates** dialog box. Enter https://www.oxygenxml.com/InstData/Editor/Eclipse/site.xml in the location field of the **Add Site** dialog box. Press OK. Select the language pack checkbox.
- Localization through the zip archive:

  Go to https://www.oxygenxml.com/download.html and download the zip archive with the plugin language pack. Unzip the downloaded zip archive in the `dropins` subdirectory of the Eclipse install directory. Restart Eclipse.

If your operating system is running in the language you want to start Eclipse in (for example, you are using Japanese version of Windows, and you want to start Eclipse in Japanese), Oxygen XML Editor plugin matches the appropriate language from the language pack. However, if your operating system is running in a language other than the one you want to start Eclipse in (for example, you are using the English version of Windows, and you want to start Eclipse in Japanese, if you have the required operating system language support including the keyboard layouts and input method editors installed), specify the `-nl <locale>` command line argument when you launch Eclipse. Oxygen XML Editor plugin uses the translation file that matches the specified `<locale>`.

You can also localize the Eclipse plugin to a different language than the initial languages in the language pack. Duplicate the `plugin.properties` file from the Oxygen XML Editor plugin plugin installation directory, translate all the keys in the file and change its name to `plugin_<locale>.properties`.

Perspectives

5

Topics:

- Oxygen XML Perspective
- Oxygen XSLT Debugger Perspective
- Oxygen XQuery Debugger Perspective
- Oxygen DB Perspective

An Oxygen XML Editor plugin *perspective* is an interface layout geared towards a specific use. The Oxygen XML Editor plugin interface uses standard interface conventions and components to provide a familiar and intuitive editing environment across all operating systems. There are several *perspectives* that you can use to work with documents in Oxygen XML Editor plugin. You can change the *perspective* by selecting the *perspective* from the **Window** > **Open Perspective** menu.

Oxygen XML Perspective

The **Oxygen XML** *perspective* is the most commonly used *perspective* and it is the default *perspective* when you start Oxygen XML Editor plugin for the first time. It is the *perspective* that you will use to edit the content of your XML documents.

To switch the focus to this *perspective*, select **Oxygen XML** from the **Window** > **Open Perspective** menu.

The layout of this *perspective* is composed of the following components:

Menus

Provides menu driven access to all the features and functions available in Oxygen XML Editor plugin. Most of the menus are common for all types of documents. However, Oxygen XML Editor plugin also includes some context-sensitive and *framework*-specific menus that are only available for a specific context or type of document.

Toolbars

Provides easy access to common and frequently used functions. Each icon is a button that acts as a shortcut to a related function. Most of the toolbars are common for all types of documents. However, **Author** mode also includes *framework*-specific toolbars, depending on the type of document that is being edited (for example, if you are editing a DITA document, a *DITA Author Custom Actions* toolbar is available that includes operations that are specific to DITA documents).

Editor Pane

The main editing pane where you spend most of your time reading, editing, applying markup, and validating your documents.

Views

Oxygen XML Editor plugin includes a large variety of *dockable* views to assist you with editing, viewing, searching, validating, transforming, and organizing your documents. The most commonly used views are displayed by default and you can choose to display others by selecting them from the **Window** > **Show View** menu.

When two or more views are displayed, the application provides divider bars. Divider bars can be dragged to a new position increasing the space occupied by one panel while decreasing it for the other.

As the majority of the work process centers around the Editor area, other views can be hidden using the toggle controls located on the top corner of the view (▭).

Some of the most helpful views in the **Oxygen XML** *perspective* include the following:

- **Navigator** view - Enables the definition of projects and logical management of the documents they contain.
- **DITA Maps Manager** view - For DITA document types, this view helps you organize, manage, and edit DITA topics and maps.
- **Outline** view - It provides an XML tag overview and offers a variety of functions, such as modifications follow-up, document structure change, document tag selection, and elements filtering.
- **Results view** - Displays the messages generated as a result of user actions such as validations, transformation scenarios, spell checking in multiple files, search operations, and others. Each message is a link to the location related to the event that triggered the message.
- **Attributes** view - Presents all possible attributes of the current element and allows you to edit attribute values. You can also use this view to insert attributes in **Text** mode. **Author** mode also includes an in-place attribute editor.
- **Model** view - Presents the current edited element structure model and additional documentation as defined in the schema.
- **Elements view** - Presents a list of all defined elements that you can insert at the current cursor position according to the document's schema. In **Author** mode this view includes tabs that present additional information relative to the cursor location.
- **Entities** view - Displays a list with all entities declared in the current document as well as built-in ones.
- **Transformation Scenarios** view - Displays a list with all currently configured transformation scenarios.
- **XPath/XQuery Builder** view - Displays the results from running an XPath expression.
- **Text** view - Displays the text output that is produced in XSLT transformations.
- **Browser** view - Displays HTML output from XSLT transformations.
- **Problems** view - A general Eclipse view that displays system-generated errors, warnings, or information associated with a resource.
- **Console** view - Status information generated by the Schema detection, validation, and transformation threads.
- **WSDL SOAP Analyzer** view - Provides a tool that helps you test if the messages defined in a Web Service Descriptor (WSDL) are accepted by a Web Services server.

Related Information:

Editing Specific Document Types on page 403
Editing Modes on page 139

Oxygen XSLT Debugger Perspective

The **XSLT Debugger** *perspective* allows you to detect problems in an XSLT transformation by executing the process step by step in a controlled environment. To switch the focus to this *perspective*, select **Window** > **Open Perspective** > **Other** > **Oxygen XSLT Debugger**.

The workspace in this *perspective* is organized as an editing area assisted by special helper views. The editing area contains editor panels that you can split horizontally or vertically in a stack of XML editor panels and a stack of XSLT editor panels. The XML files and XSL files can be edited in **Text** mode only.

The layout of this *perspective* is composed of the following components:

Menus

Provides menu driven access to all the features and functions available in the **XSLT Debugger**.

Toolbars

Contains all actions needed to configure and control the debugging process.

XML Source Pane

The editing pane where you can display and edit data or document-oriented XML documents.

XSL Source Pane

The editing pane where you can display and edit XSL stylesheets.

Output View

Displays the transformed output that results from the input of a selected document (XML) and selected stylesheet (XSL) to the transformer. The result of transformation is dynamically written as the transformation is processed. There are three types of views for the output: a text view (with XML syntax highlight), an XHTML view, and one text view for each `xsl:result-document` element used in the stylesheet (if it is an XSLT 2.0 / 3.0 stylesheet).

Debugging Information Views

Presented in two panes, they display various types of information that can be used to understand the transformation process. For each information type there is a corresponding tab. While running a transformation, relevant events are displayed in the various information views. This allows you to obtain a clear view of the transformation progress. See the Debugging Information Views topic for a list of all the information views (and links to more details on each view).

Note: You can add XPath expression automatically in the **XWatch** view using the **Watch expression** action from the contextual menu. In case you select an expression or a fragment of it and then click **Watch expression** in the contextual menu, the entire selection is presented in the **XWatch** view. Using **Watch expression** without selecting an expression displays the value of the attribute from the cursor position in the **XWatch** view. Variables detected at the cursor position are also displayed. Expressions displayed in the **XWatch** view are *normalized* (unnecessary white spaces are removed from the expression).

For more information about the XSLT debugging capabilities in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/m9d8c4V-LJw

Related Information:

Debugging XSLT Stylesheets and XQuery Documents on page 1205
Oxygen XQuery Debugger Perspective on page 136

Oxygen XQuery Debugger Perspective

The **XQuery Debugger** *perspective* allows you to detect problems in an XQuery transformation process by executing the process step by step in a controlled environment and inspecting the information provided in the special views. To switch the focus to this *perspective*, select **Window** > **Open Perspective** > **Other** > **Oxygen XQuery Debugger**.

The workspace in this *perspective* is organized as an editing area assisted by special helper views. The editing area contains editor panels that you can split horizontally or vertically in a stack of XML editor panels and a stack of XQuery editor panels. The XML files and XQuery files can be edited in **Text** mode only.

The layout of this *perspective* is composed of the following components:

Menus

Provides menu driven access to all the features and functions available in the **XQuery Debugger**.

Toolbars

Contains all actions needed to configure and control the debugging process.

XML Source Pane

The editing pane where you can display and edit data or document-oriented XML documents.

XQuery Source Pane

The editing pane where you can display and edit XQuery files.

Output View

Displays the transformed output that results from the input of a selected document (XML) and selected XQuery document to the XQuery transformer. The result of transformation is dynamically written as the transformation is processed. There are two types of views for the output: a text view (with XML syntax highlight) and an XHTML view.

Debugging Information Views

Presented in two panes, they display various types of information that can be used to understand the transformation process. For each information type there is a corresponding tab. While running a transformation, relevant events are displayed in the various information views. This allows you to obtain a clear view of the transformation progress. See the Debugging Information Views topic for a list of all the information views (and links to more details on each view).

Note: You can add XPath expression automatically in the **XWatch** view using the **Watch expression** action from the contextual menu. If you select an expression, or a fragment of it, and then click **Watch expression** in the contextual menu, the entire selection is presented in the **XWatch** view. Expressions displayed in the **XWatch** view are normalized (unnecessary white spaces are removed from the expression).

For more information about the XQuery debugging capabilities in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/o5_M2kbyipU

Related Information:

Debugging XSLT Stylesheets and XQuery Documents on page 1205
Oxygen XSLT Debugger Perspective on page 135

Oxygen DB Perspective

The **Database** *perspective* allows you to manage databases. To switch the focus to this *perspective*, select **Oxygen DB** from the **Window** > **Open perspective** menu.

The **Database** *perspective* offers various helpful features, including:

- Support for browsing multiple connections at the same time.
- Support for both *Relational* and *Native XML* databases.
- Browsing the structure of databases.
- Viewing tables from databases.
- Inspecting or modifying data.
- Specifying XML Schemas for XML fields.
- SQL execution.
- XQuery execution.
- Data export to XML.

Supported Databases

Oxygen XML Editor plugin supports numerous types of databases, including:

- Oracle Berkeley DB XML Database
- eXist XML Database
- IBM DB2 (Enterprise edition only)
- JDBC-ODBC Bridge
- MarkLogic (Enterprise edition only)
- Microsoft SQL Server 2005 and Microsoft SQL Server 2008 (Enterprise edition only)
- MySQL
- Oracle 11g (Enterprise edition only)
- PostgreSQL 8.3 (Enterprise edition only)
- Documentum xDB (X-Hive/DB) 10 XML Database (Enterprise edition only)
- SharePoint (CMS)

Note: For the databases marked with "Enterprise edition only", the XML capabilities are only available in the Enterprise edition of Oxygen XML Editor plugin. For a detailed feature matrix that compares the Academic, Professional, and Enterprise editions of Oxygen XML Editor plugin go to the Oxygen XML Editor plugin website.

Supported Capabilities

The supported non-XML capabilities are as follows:

- Browsing the structure of the database instance.
- Opening a database table in the **Table Explorer** view.
- Handling the values from **XML Type** columns as String values.

Note: The non-XML capabilities are available in the Enterprise, Academic, and Professional editions of Oxygen XML Editor plugin by registering the database driver as a *Generic JDBC* type driver when defining the data source for accessing the database. For more information, see Database Connection Support on page 1142.

The supported XML capabilities are as follows:

- Displaying an XML Schema node in the tree of the database structure (for databases with an XML-specific structure) with actions for opening, editing, and validating the schemas in an Oxygen XML Editor plugin editor panel.
- Handling the values from **XML Type** columns as XML instance documents that can be opened and edited in an Oxygen XML Editor plugin editor panel.
- Validating an XML instance document added to an XML Type (column of a table, etc.)

Tip: Connections configured on relational data sources can be used to import data to XML or to generate XML schemas.

Layout of the Database Perspective

The layout of this *perspective* is composed of the following components:

Menus

Provides menu driven access to all the features and functions available in the **XQuery Debugger**.

Toolbars

Contains all actions needed to configure and control the debugging process.

Editor Pane

The main editing pane where you spend most of your time reading, editing, applying markup, and validating your documents.

Data Source Explorer View

Provides browsing support for the configured connections.

Table Explorer View

Provides table content editing support for inserting new rows, deleting table rows, editing cell values, exporting to an XML file, and more.

Related Information:

Working with Databases on page 1138
Data Source Explorer View on page 1138
Table Explorer View on page 1139

Editing Modes

6

Topics:

- Text Editing Mode
- Grid Editing Mode
- Author Editing Mode
- Design Editing Mode (XML Schema Diagram Editor)

The main editing area in Oxygen XML Editor plugin includes several editing modes to suit the type of editing that you want to perform. You can easily switch between modes by clicking on the desired mode at the bottom of the main editing pane. Oxygen XML Editor plugin offers the following editing modes:

- **Text** - This mode presents the source of an XML document.
- **Grid** - This mode displays an XML document as a structured grid of nested tables.
- **Author** - This mode enables you to edit in a WYSIWYG-like editor.
- **Design** - This mode is found in the schema editor and represents the schema as a diagram.

The default editing mode that will be initially opened for each type of document can be set in two ways:

- If the **Allow Document Type specific edit mode setting to override the general mode setting** option is selected in the **Edit Modes** preferences page, then the edit mode specified in the **Document Type** configuration dialog box is used when that particular type of document is initially opened.
- If the **Allow Document Type specific edit mode setting to override the general mode setting** option is not selected, then the edit mode specified in the table in the **Edit Modes** preferences page is used when that particular type of document is initially opened.

Text Editing Mode

The **Text** mode editor in Oxygen XML Editor plugin is designed to be a simple, yet powerful, XML source editor. It provides support to help you edit, transform, and debug XML-based documents. It is similar to other common text editors, but Oxygen XML Editor plugin also includes specialized editing actions, a powerful *Content Completion Assistant*, a helpful **Outline** view, and many other unique features.

To switch to this mode, select **Text** at the bottom of the editing area.

Related Information:

Editing XML Documents in Text Mode on page 403

Navigating the Document Content in Text Mode

Oxygen XML Editor plugin includes some useful features to help you navigate XML documents in **Text** mode.

Using the Keyboard

Oxygen XML Editor plugin allows you to quickly navigate through a document using the **Ctrl + CloseBracket (Command + CloseBracket on OS X)** key to go to the next XML node and **Ctrl + OpenBracket (Command + OpenBracket on OS X)** to go to the previous one.

To navigate one word forward or backwards, use **Ctrl + RightArrow (Command + RightArrow on OS X)**, and **Ctrl + LeftArrow (Command + LeftArrow on OS X)**, respectively. To position the cursor at the beginning or end of the document you can use **Ctrl + Home (Command + Home on OS X)**, and **Ctrl + End (Command + End on OS X)**, respectively.

Navigation Shortcuts

Oxygen XML Editor plugin includes some keyboard shortcuts to help you quickly navigate to a particular modification. They are also available as actions in the **Navigation** menu.

- **Ctrl+Q - Last Edit Location** - Moves the cursor to the last modification in any opened document.
- **Alt+LeftArrow (Command+OpenBracket on OS X) - Back** - Moves the cursor to the previous position.
- **Alt+RightArrow (Command+CloseBracket on OS X) - Forward** - Moves the cursor to the next position.

Navigating with the Outline View

Oxygen XML Editor plugin includes a very useful **Outline** view that displays a hierarchical tag overview of the currently edited XML Document.

You can use this view to quickly navigate through the current document by selecting nodes in the outline tree. It is synchronized with the editor area, so when you make a selection in the **Outline** view, the corresponding nodes are highlighted in the editor area.

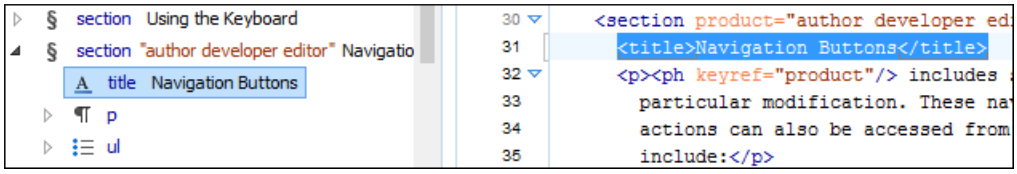


Figure 39: Outline View Navigation in Text Mode

Using the Breadcrumb to Navigate

A *breadcrumb* on the top stripe indicates the path from the document root element to the current element. It can also be used as a helpful tool to navigate to specific elements throughout the structure of the document.

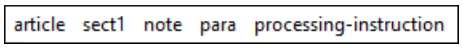


Figure 40: Breadcrumb in Text Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. Clicking an element from the *breadcrumb* selects the entire element and navigates to it in the editor area.

Navigating with the Go To Dialog Box

In **Text** mode, you can navigate precisely to a location in the document you are editing by using the **Go To Line (Ctrl+L (Command+L on OS X))** action that is available in the **Navigation** menu.

Navigating with Bookmarks

By using *bookmarks*, you can mark positions in an edited document so that you can return to it later. This is especially helpful for navigating through large documents or while editing multiple documents.

To insert a *bookmark* in **Text** mode, right-click the desired location in the vertical stripe on the left side of the editor and select **Add Bookmark** (you can remove it by selecting **Remove Bookmark** from the same contextual menu).

You can navigate the *bookmarks* by clicking on their corresponding markers in the vertical stripe on the right side of the editor.

Tip: You can configure the color and how the *bookmarks* are shown from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Smart Editing in Text Mode

Oxygen XML Editor plugin includes *smart editing* features to help you edit XML documents in **Text** mode. The following smart editing features are included:

- **Closing tag auto-expansion** - This feature helps save some keystrokes by automatically inserting a closing tag when you insert a complete start tag and the cursor is automatically placed in between the start and end tags. For instance, after entering a start `<tag>`, the corresponding closing `</tag>` is automatically inserted and the cursor is placed between the two (`<tag>|</tag>`.
- **Auto-rename matching tag** - When you edit the name of a start tag, Oxygen XML Editor plugin will mirror-edit the name of the matching end tag. This feature can be controlled from the **Content Completion** option page.
- **Auto-breaking the edited line** - The **Hard line wrap** option automatically breaks the edited line when its length exceeds the maximum line length defined for the format and indent operation.
- **Indent on Enter** - The **Indent on Enter** option indents the new line inserted when you press **Enter**.
- **Smart Enter** - The **Smart Enter** option inserts an empty line between the start and end tags. If you press **Enter** between a start and end tag, the action places the cursor in an indented position on the empty line between the lines that contain the start and end tag.
- **Double-click** - A double-click selects certain text, depending on the position of the click in the document:
  - If the click position is on a start tag or end tag, then the element name is selected.
  - If the click position is after a start tag or before an end tag, then the entire content of the element without the start and end tags is selected.
  - If the click position is before a start tag or after an end tag, then the entire tag is selected, including the start and end tags, and the content in between.
  - If the click position is immediately before an attribute, then the entire attribute and its value is selected.
  - If the click position is immediately after the opening quote or immediately before the closing quote of an attribute value, then the entire attribute value is selected.
  - Otherwise, a double-click selects contiguous text.
- **Triple-click** - A triple-click selects the entire current line of text.

Shortcut Actions in Text Mode

Oxygen XML Editor plugin includes numerous shortcut actions to help you edit content in the **Text** editing mode.

Undo/Redo Actions

The typical undo and redo actions are available with shortcuts or in the **Edit** menu:

Undo (Ctrl + Z (Command + Z on OS X))

Reverses a maximum of 200 editing actions to return to the preceding state.

Note: Complex operations such as **Replace All** or **Indent selection** count as single undo events.

Redo (Ctrl + Y (Command + Shift + Z on OS X, Ctrl + Shift + Z on Linux/Unix))

Recreates a maximum of 100 editing actions that were undone by the **Undo** function.

Copy and Paste Actions

The typical copying and pasting actions are available with shortcuts or in the contextual menu (or the **Edit** menu):

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Select All (Ctrl + A (Command + A on OS X))

Selects the entire content of the current document.

Moving XML Nodes

You can use the following shortcuts to move XML elements or XSLT variables up or down in **Text** mode:

Ctrl + Alt + UpArrow (Command + Alt + UpArrow on OS X)

Moves the node up one line.

Ctrl + Alt + DownArrow (Command + Alt + DownArrow on OS X)

Moves the node down one line.

Note: The requirements for these node moving actions to work are as follows:

- The mechanism is designed to work without a selection. If you use these actions on a selection of content, it moves the entire selection. To make this mechanism work as intended, simply position the cursor somewhere on the line that you want to move.
- A start tag must be the first text occurrence on the line where the cursor is positioned.
- On the line where the element ends, only whitespaces are allowed after the end tag.

Miscellaneous Shortcut Actions in Text Mode

Oxygen XML Editor plugin also includes the following other miscellaneous shortcut actions in **Text** mode:

Ctrl + Delete (Command + Delete on OS X)

Deletes the next word.

Ctrl + Backspace (Command + Backspace on OS X)

Deletes the previous word.

Ctrl + W (Command + W on OS X)

Cuts the previous word.

Ctrl + K (Command + K on OS X)

Cuts to end of line.

Ctrl + Single-Click (Command + Single-Click on OS X)

Use this shortcut to open any of the following:

- Any absolute URL (URLs that have a protocol), regardless of their location in the document.
- URI attributes such as: `schemaLocation`, `noNamespaceSchemaLocation`, `href` and others.
- Processing instructions used for associating resources, xml-models, xml-stylesheets.

Ctrl + Shift + Y (Command + Shift + Y on OS X) (Document > Edit > Toggle Line Wrap)

Enables or disables line wrapping. When enabled, if text exceeds the width of the displayed editor, content is wrapped so that you do not have to scroll horizontally.

Editing XML Markup in Text Mode

Oxygen XML Editor plugin includes some useful actions that allow you to easily edit XML markup in **Text** mode. These actions are available in the **Refactoring** submenu of the contextual menu, and many of the actions can also be done with simple keyboard shortcuts.

Using the Breadcrumb

A *breadcrumb* on the top stripe indicates the path from the document root element to the current element. It can also be used as a helpful tool to insert and edit specific elements in the document structure.

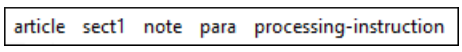


Figure 41: Breadcrumb in Text Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. Clicking an element in the *breadcrumb* selects the entire element in the editor area. Also, each element provides a contextual menu with access to the following actions:

Append Child

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it as a child of the current element.

Insert Before

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately before the current element, as a sibling.

Insert After

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately after the current element, as a sibling.

Edit Attributes

Opens an editing window that allows you to edit the attributes of the currently selected element.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Cut

Removes the selected element and copies it to the clipboard.

Copy

Copies the selected element to the clipboard.

Delete

Deletes the currently selected element.

Move Nodes

You can easily move XML nodes in the current document by using the following shortcut keys:

Alt + UpArrow

Moves the current node or selected nodes in front of the previous node.

Alt + DownArrow

Moves the current node or selected nodes after the subsequent node.

Rename Elements

You can rename elements by using the following actions in the **Refactoring** submenu of the contextual menu:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Rename Prefix (Alt + Shift + P (Command + Shift + P on OS X))

The prefix of the element from the cursor position, and any elements with the same prefix, can be renamed according with the options from the **Rename** dialog box.

- If you select the **Rename current element prefix** option, the application will recursively traverse the current element and all its children. *For example*, to change the `xmlns:p1="ns1"` association in the current element to `xmlns:p5="ns1"`, if the `xmlns:p1="ns1"` association is applied on the parent element, then Oxygen XML Editor plugin will introduce `xmlns:p5="ns1"` as a new declaration in the current element and will change the prefix from `p1` to `p5`. If `p5` is already associated with another namespace in the current element, then the conflict will be displayed in a dialog box. By pressing **OK**, the prefix is modified from `p1` to `p5` without inserting a new declaration.
- If you select the **Rename current prefix in all document** option, the application will apply the change on the entire document.
- To also apply the action inside attribute values, select the **Rename also attribute values that start with the same prefix** checkbox.

Surround Content with Tags (Wrap)

You can surround a selection of content with tags (*wrap* the content) by using the following action in the **Refactoring** submenu of the contextual menu:

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag that encloses a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Surround with <![CDATA]]> (Alt + Shift + C (Command + Alt + C on OS X))

Surround the selected content with a CDATA tag so that the parser will interpret it as textual data rather than markup.

Unwrap the Content of Elements

You can unwrap the content of an element by using the following action in the **Refactoring** submenu of the contextual menu:

Delete element tags (Alt + Shift + Comma)

Deletes the start and end tag of the current element.

Join or Split Elements

You can join or split elements in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Join elements (Alt + Shift + F (Command + Alt + F on OS X))

Joins the left and right elements relative to the current cursor position. The elements must have the same name, attributes, and attributes values.

Split element

Split the element from the cursor position into two identical elements. The cursor must be inside the element.

Other Refactoring Actions

You can also manage the structure of the markup by using the other specific XML refactoring actions that are available in the **Refactoring** submenu of the contextual menu:

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Related Information:

Refactoring XML Documents on page 596
Contextual Menu Actions in Text Mode on page 429

Folding XML Elements in Text Mode

When working with a large document, the *folding* support in Oxygen XML Editor plugin can be used to collapse some element content leaving only those that you need to edit in focus. Expanding and collapsing works on individual elements. Expanding an element leaves the child elements unchanged.

Figure 42: Folding of XML Elements in Text Mode

Folding Actions in Text Mode

Element folds are marked with a small icon (/) in the left stripe. To toggle the fold, simply click the icon. Also, if you right-click the icon, the following actions are available in the **Folding** sub-menu:

Toggle Fold

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the child elements that are indented one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

For more information about the *folding* support in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/eR9HfN_peAE

Drag and Drop in Text Mode

To move a whole region of text to other location in the same edited document, just select the text, drag the selection by holding down the left mouse button and drop it to the target location.

You can also copy content from other applications and paste it into the document.

Selecting Content in Text Mode

Oxygen XML Editor plugin includes a variety of keyboard shortcuts that allow you to select content in **Text** mode. These include numerous standard continuous selection possibilities that are common to many text editors.

Standard Continuous Selection Shortcuts

Ctrl + A (Meta + A on Mac OS X)

Selects all content in the document.

Shift + Left/Right Arrow Keys

Begins a continuous selection at the cursor position and extends it one character at a time in the direction that you press the arrow keys.

Shift + Up/Down Arrow Keys

Begins a continuous selection at the cursor position and extends it one line at a time in the direction that you press the arrow keys.

Ctrl + Shift + Left/Right Arrow Keys (Meta + Shift + Left/Right Arrow Keys on Mac OS X)

Begins a continuous selection at the cursor position and extends it one word at a time in the direction that you press the arrow keys.

Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the current line (on Mac OS X, it extends to the beginning of the document).

Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the current line (on Mac OS X, it extends to the end of the document).

Ctrl + Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the document.

Ctrl + Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the document.

Shift + PageUp

Begins a continuous selection at the cursor position and extends it up one screen page.

Shift + PageDown

Begins a continuous selection at the cursor position and extends it down one screen page.

Double-Click

Selects certain text, depending on the position of the click in the document. See Smart Editing Double-Click for the specifics.

Triple-Click

Selects entire regions of text, depending on the position of the click in the document. See the Smart Editing Triple-Click for the specifics.

Right-Click > Select > Element

Selects the entire element at the current cursor position.

Right-Click > Select > Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Right-Click > Select > Attributes

Selects all the attributes of the element at the current cursor position.

Right-Click > Select > Parent

Selects the entire parent element at the current cursor position.

Content Completion Assistant in Text Mode

Oxygen XML Editor plugin includes an intelligent *Content Completion Assistant* that offers rapid, inline identification and insertion of structured language elements, attributes, and attribute values. Oxygen XML Editor plugin shows the available entries that are valid in the current editing context.

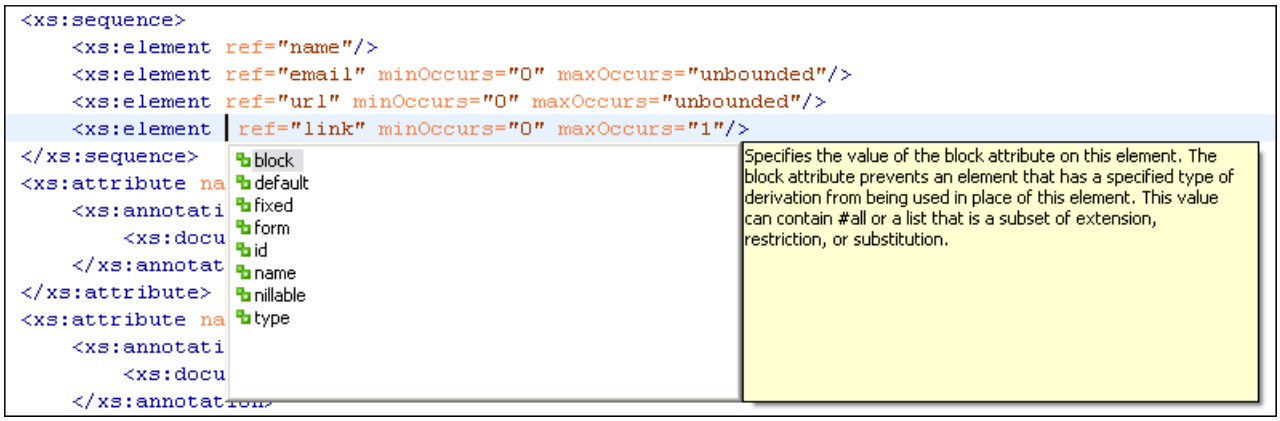


Figure 43: Content Completion Assistant

The *Content Completion Assistant* feature is schema-driven (XML Schema, DTD, and RELAX NG) and status information about the detected schema is logged in the Status view.

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

Using the Content Completion Assistant in Text Mode

The feature is activated in **Text** mode in the following situations:

- After you press the **<** character when inserting an element, it is automatically activated after a short delay. You can adjust the activation delay with the **Activation delay of the proposals window (ms)** option from the **Content Completion** preferences page.
- After typing a partial element or attribute name, you can manually activate it by pressing **Ctrl + Space (Command + Space on OS X)** or **Alt + ForwardSlash (Command + Alt + ForwardSlash on OS X)**. If there is only one valid proposal at the current location, it is inserted without displaying the list of proposals.

You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. In same cases, the *Content Completion Assistant* displays a documentation window with information about the particular proposal and some of them have links to additional information (for example, DITA elements might have a link to the DITA Style Guide). You can also change the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Text** mode, do one of the following:

- Press **Enter** or **Tab** to insert both the start and end tags and position the cursor inside the start tag in a position suitable for inserting attributes.
- Press **Ctrl + Enter (Command + Enter on OS X)** to insert both the start and end tags and positions the cursor between the tags in a position where you can start typing content.

Note: When the DTD, XML Schema or RELAX NG schema specifies required child elements for the newly added element, they are inserted automatically only if the **Add Element Content** option (in the **Content Completion** preferences page) is selected. The *Content Completion Assistant* can also add optional content and first choice particle, as specified in the DTD, XML Schema, or RELAX NG schema. To activate these features, select the **Add optional content** and **Add first Choice particle** options in the **Content Completion** preferences page.

After inserting an element, the cursor is positioned:

- Before the > character of the start tag, if the element allows attributes, to allow rapid insertion of any of the attributes supported by the element. Pressing the space bar displays the Content Completion list once again. This time it contains the list of allowed attribute names. If the attribute supports a fixed set of parameters, the assistant list displays the list of valid parameters. If the parameter setting is user-defined and therefore variable, the assistant is closed to allow manual insertion. The values of the attributes can be learned from the same elements in the current document
- After the > character of the start tag if the element has no attributes.

Where the Content Completion Assistant is Displayed

The *Content Completion Assistant* is displayed:

- Anywhere within a tag name or at the beginning of a tag name in an XML document, XML Schema, DTD,or Relax NG (full or compact syntax) schema.
- Anywhere within an attribute name or at the beginning of an attribute name in any XML document with an associated schema.
- Within attribute values or at the beginning of attribute values in XML documents where lists of possible values have been defined for that element in the schema associated with the document.

Types of Proposals Listed in the Content Completion Assistant

The following things are considered for determining the proposals that are listed in the content completion window:

Element Structure Specified in DTD or Schema

The proposals that populate the *Content Completion Assistant* depend on the element structure specified in the DTD, XML Schema, Relax NG (full or compact syntax) schema, or NVDL schema associated with the edited document.

Note: The *Content Completion Assistant* is able to offer elements defined both by XML Schemas version 1.0 and 1.1.

Current Cursor Position

The number and type of elements displayed by the *Content Completion Assistant* is dependent on the cursor's current position in the structured document. The child elements displayed within a given element are defined by the structure of the specified DTD, XML Schema, Relax NG (full or compact syntax) schema, or NVDL schema.

Unique ID Attribute Values

A schema may declare certain attributes as *ID* or *IDREF/IDREFS*. When the document is validated, Oxygen XML Editor plugin checks the uniqueness and correctness of the `ID` attributes. It also collects the attribute values declared in the document to prepare the list of proposals. This is available for documents that use DTD, XML Schema, and Relax NG schema.

Values for *xml:id* Attributes

Values of all the `xml:id` attributes are handled as `ID` attributes. They are collected and displayed by the *Content Completion Assistant* as possible values for *anyURI* attributes defined in the schema of the edited document. This works only for XML Schema and Relax NG schemas.

Links/References in DITA

When entering values for the various types of links and references in DITA (for example, values for `href` or `conref` elements), the *Content Completion Assistant* will propose potential targets when you use the forward slash key (*/*).

ID Values for DITA Key References

In DITA, when inserting key references (`keyref`) or content key references (`conkeyref`), the ID values that are defined in the key reference are presented as possible targets. The *Content Completion Assistant* will only propose targets that are valid in the current context.

Element and Attribute Values

For documents that use an XML Schema or Relax NG schema, the *Content Completion Assistant* offers proposals for attribute and element values as long as the allowed values are defined in the schema. Also, if a default value or fixed value is defined in the schema, then that value is offered in the *Content Completion Assistant*.

Related Information:

Customizing the Content Completion Assistant on page 1300

Set Schema to be Used for Content Completion in Text Mode

The list of proposals in the *Content Completion Assistant* depend on the associated schemas. The DTD, XML Schema, Relax NG, or NVDL schema used to populate the *Content Completion Assistant* is specified in the following methods, in the order of their precedence:

- The schema specified explicitly in the document. In this case, Oxygen XML Editor plugin reads the beginning of the document and resolves the location of the DTD, XML Schema, Relax NG schema, or NVDL schema.
- The default schema declared in the **Document Type** configuration dialog box that matches the edited document type.
- For XSLT stylesheets, the schema specified in the Oxygen XML Editor plugin **XSL** preferences page. Oxygen XML Editor plugin will read the content completion settings when the prolog fails to provide or resolve the location of a DTD, XML Schema, Relax NG, or NVDL schema.
- For XML Schemas, the schema specified in the Oxygen XML Editor plugin **XSD** preferences page. Oxygen XML Editor plugin will read the content completion settings and the specified schema will enhance the content completion inside the `xs:annotation/xs:appinfo` elements of the XML Schema.

Oxygen XML Editor plugin creates the content completion lists by analysing the detected schema and the current context (the position in the editor). If you change the schema, then the list of tags to be inserted is also updated.

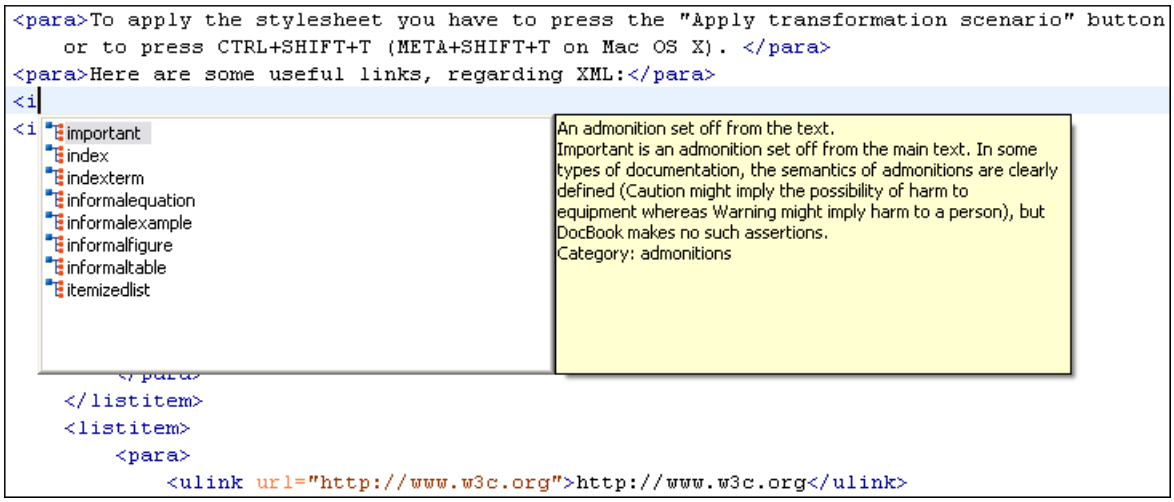


Figure 44: Example: Content Completion Driven by DocBook DTD

Schema Annotations in Text Mode

A schema annotation is a documentation snippet associated with the definition of an element or attribute in a schema. If such a schema is associated with an XML document, the annotations are displayed in:

- The *Content Completion Assistant*.
- A small tooltip window shown when the mouse hovers over an element or attribute.

The schema annotations support is available if the schema type is one of the following:

- XML Schema
- Relax NG
- NVDL schema
- DTD

This feature is enabled by default, but you can disable it by deselecting the **Show annotations in Content Completion Assistant** option in the **Annotations** preferences page.

Styling Annotations with HTML

You can use HTML format in the annotations you add in an XML Schema or Relax NG schema. This improves the visual appearance and readability of the documentation window displayed when editing XML documents validated against such a schema. An annotation is recognized and displayed as HTML if it contains at least one HTML element (such as `div`, `body`, `p`, `br`, `table`, `ul`, or `ol`).

The HTML rendering is controlled by the **Show annotations using HTML format, if possible** option in the **Annotations** preferences page. When this options is deselected, the annotations are converted and displayed as plain text and if the annotation contains one or more HTML tags (p, `br`, `ul`, `li`), they are rendered as an HTML document loaded in a web browser. For example, p begins a new paragraph, `br` breaks the current line, `ul` encloses a list of items, and `li` encloses an item of the list.

Collecting Annotations from XML Schemas

In an XML Schema, the annotations are specified in an `<xs:annotation>` element like this:

```
<xs:annotation>
  <xs:documentation>
            Description of the element.
  </xs:documentation>
</xs:annotation>
```

If an element or attribute does not have a specific annotation, then Oxygen XML Editor plugin looks for an annotation in the type definition of that element or attribute.

Collecting Annotations from Relax NG Schemas

For Relax NG schema, element and attribute annotations are made using the `<documentation>` element from the `http://relaxng.org/ns/compatibility/annotations/1.0` namespace like this:

```
<define name="person" >
  <element name="person">
    <a:documentation xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0">
            Information about a person. </a:documentation>
      <ref name="name"/>
        <zeroOrMore>
      <ref name="email"/>
        </zeroOrMore>
  </element>
</define>
```

However, any element outside the Relax NG namespace (`http://relaxng.org/ns/structure/1.0`) is handled as annotation and the text content is displayed in the annotation window. To activate this behavior, select the **Use all Relax NG annotations as documentation** option in the **Annotations** preferences page.

Collecting Annotations from Relax NG Compact Syntax Schemas

For Relax NG Compact Syntax schema, annotations are made using comments like this:

```
##  Information about a person.
element person { name, email*}
```

Collecting Annotation from DTDs

For DTD, Oxygen XML Editor plugin defines a custom mechanism for annotations using comments enabled by the **Prefer DTD comments that start with "doc:" as annotations** option in the **Annotations** preferences page. The following is an example of a DTD annotation:

```
<!--doc:Description of the element. -->
```

Content Completion Helper Views

Information about the current element being edited is also available in various *dockable* views, such as the **Model** view, **Attributes** view, **Elements** view, and **Entities** view. By default, they are located on the right-hand side of the main editor window. These views, along with the powerful **Outline** view, provide spatial and insight information about the edited document and the current element. If any particular view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

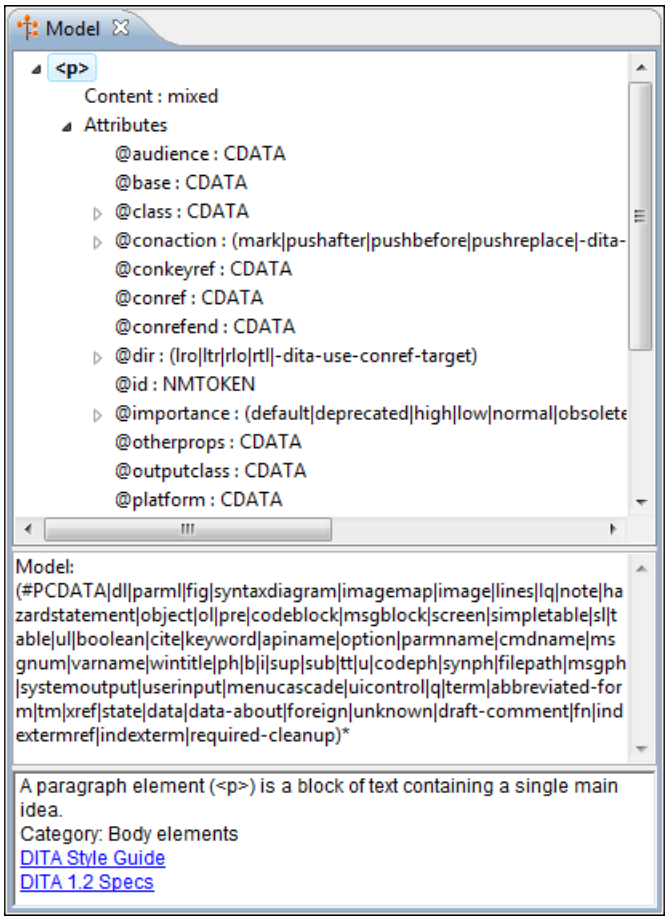


Figure 45: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

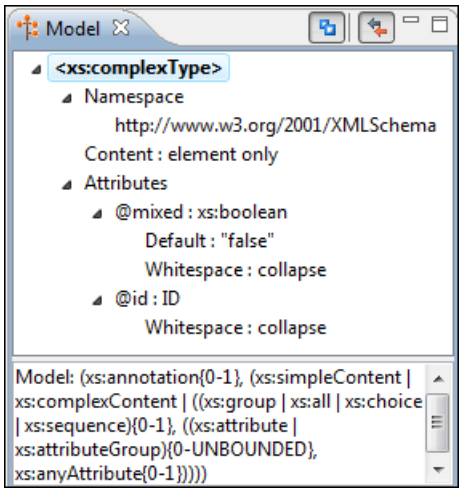


Figure 46: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

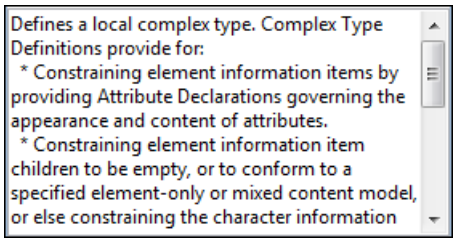


Figure 47: Annotation panel

Attributes View in Text Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use the **Attributes** view to insert attributes, edit their values, or add values to existing attributes.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.
- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

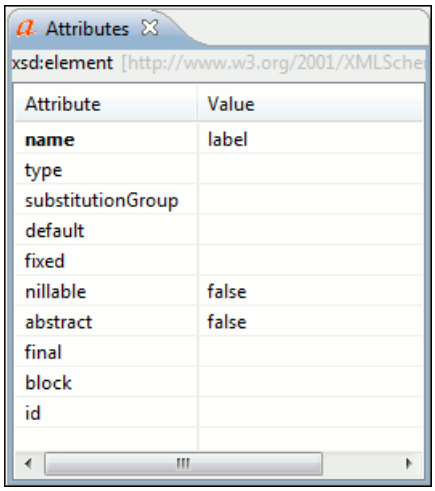


Figure 48: Attributes View

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Text** mode:

Add

Allows you to insert a new attribute. Adding an attribute that is not in the list of all defined attributes is not possible when the Allow only insertion of valid elements and attributes schema-aware option is selected.

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.
- If the clipboard only contains text, the value of the selected attribute is modified.

Elements View in Text Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking any of the listed elements inserts that element into the edited document, at the current cursor position. Pressing **F2** with an element selected will display information about that particular element.

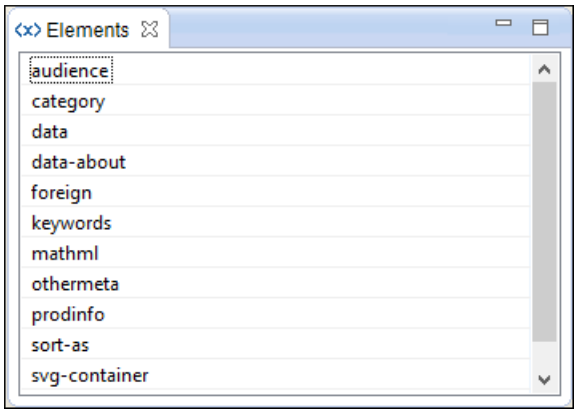


Figure 49: Elements View in Text Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

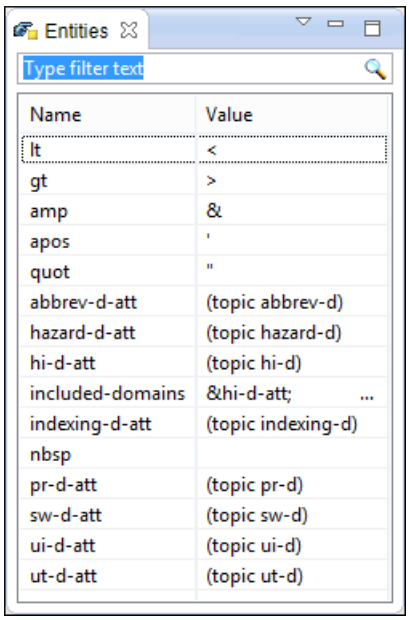


Figure 50: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Code Templates

Code templates are code fragments that can be inserted quickly at the current editing position . Oxygen XML Editor plugin includes a set of built-in code templates for CSS, Schematron, XSL, XQuery, and XML Schema document types. You can also define your own code templates for any type of file and share them with others.

To get a complete list of available code templates, press **Ctrl + Shift + Space** in **Text** mode. To enter the code template, select it from the list or type its code and press **Enter**. If a shortcut key has been assigned to the code template, you can also use the shortcut key to enter it. Code templates are displayed with a symbol in the content completion list.

When the *Content Completion Assistant* is invoked (**Ctrl + Space (Command + Space on OS X)** in **Text** mode or **Enter** in **Author** mode), it also presents a list of code templates specific to the type of the active editor.

For more information about code templates, watch our video demonstration:

https://www.youtube.com/embed/eNOMCJSzlu8

Text Mode Views

There is a variety of *dockable* helper views that are displayed by default in **Text** mode. There are also a large selection of additional views available in the **Window** > **Show View** menu. This section presents some of the most helpful views for editing in **Text** mode.

Navigator View

The **Navigator** view is designed to assist you with organizing and managing related files grouped in the same XML project. The actions available in the contextual menu and on the toolbar associated to this panel allow you to create XML projects and provide shortcuts to various operations for the project documents.

Tip: You can also use the **Project Explorer** view for many of the same purposes as the **Navigator** view.

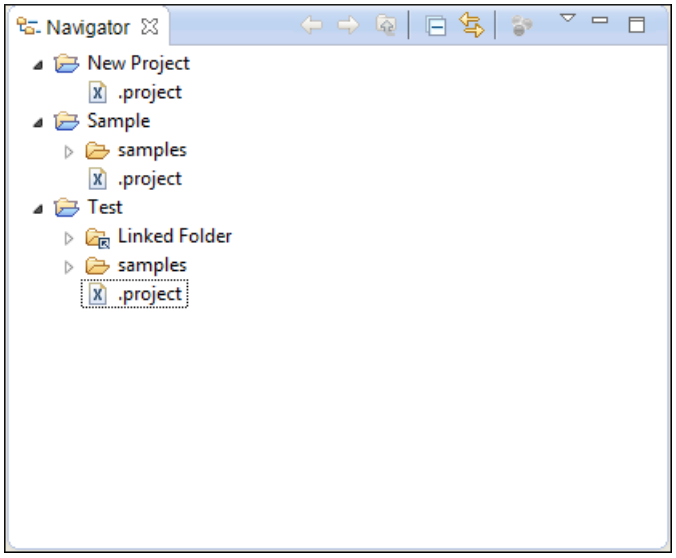


Figure 51: Navigator View

By default, the view is positioned on the left side of the Oxygen XML Editor plugin window, above the **Outline** view. If the view has been closed, it can be reopened at any time from the **Window** > **Show View** menu (the **Project Explorer** view is in the **Other** submenu).

The following actions are grouped in the upper right corner:

Collapse All

Collapses all project tree folders. You can also collapse/expand a project tree folder if you select it and press the **Enter** key or **Left Arrow** to collapse and **Right Arrow** to expand.

Link with Editor

When selected, the project tree highlights the currently edited file, if it is found in the project files.

Note: This button is disabled automatically when you move to the **Debugger** *perspective*.

View Menu

Drop-down menu that contains various settings.

The files are usually organized in an XML project as a collection of folders. There are two types of resources displayed in the **Navigator** view:

- **Physical folders and files** - marked with the operating system-specific icon for folders (usually a yellow icon on Windows and a blue icon on Mac OS X). These folders and files are mirrors of real folders or files that exist in the local file system. They are created or added to the project by using contextual menu actions (such as **New** > **File** and **New** > **Folder**).Also, the contextual menu action **Delete** can be used to remove them from the project and local file system.
- **Shortcut folders and files** - the icons for file and folder shortcuts are displayed with a shortcut symbol. They are created and added by using the actions **New** > **File** > **Advanced** or **New** > **Folder** > **Advanced** from the

contextual menu or **File** menu. Also, the contextual menu action **Delete** can be used to remove them from the project (the local file system remains unchanged).

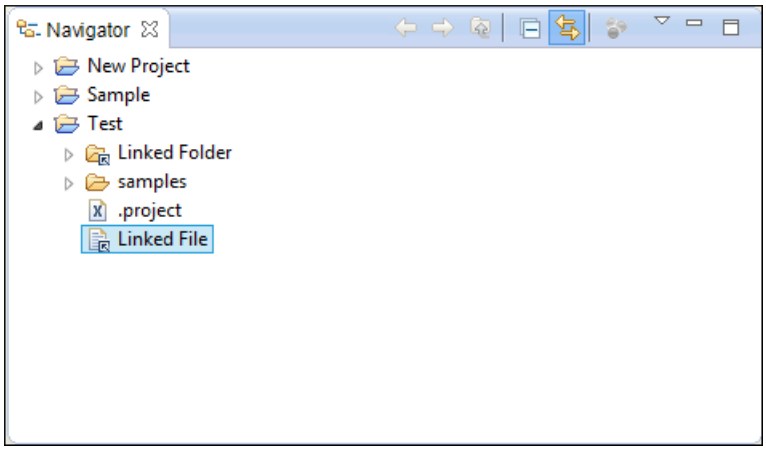


Figure 52: Navigator View with Examples of the Two Types of Resources

Creating New Projects

The following actions are available by selecting **New** from the contextual menu or **File** menu:

New > XML Project

Opens the **New XML Project** dialog box that allows you to create a new project and adds it to the project structure in the **Navigator** view.

New > Sample XML Project

Opens the **New sample XML project** dialog box that allows you to customize sample resources in a new project and adds it to the project structure in the **Navigator** view.

Creating New Project Items

To create new project items, select the desired document type or folder from the **New** menu of the contextual menu, when invoked from the **Navigator** view (or from the **File** menu or **New Drop-down menu**). You can also create a document from a template by selecting **New** > **New from Templates** from the contextual menu (or click the **New** toolbar button).

For more information about creating new files, see New Document Wizard on page 361. For more information about creating new files from templates, see Creating New Documents Based on Templates on page 365.

Managing Physical Folders and Files

You can create physical folders by selecting **New** > **Folder** from the contextual menu.

When adding files to a project, the default target is the project root. To change a target, select a new folder. Files may have multiple instances within the folder system, but cannot appear twice within the same folder.

Removing Files and Folders

To remove one or more files or folders, select them in the project tree and press the **Delete** key, or select the contextual menu action **Delete**.

CAUTION: In most cases this action is irreversible, deleting the file permanently. Under particular circumstances (if you are running a Windows installation of Oxygen XML Editor plugin and the *Recycle Bin* is active) the file is moved to *Recycle Bin*.

Moving Files and Folders

You can move the resources of the project with drag and drop operations on the files and folders of the tree.

You can also use the usual **Copy** and **Paste** actions (or the **Move** action) from the contextual menu to move resources in the **Navigator** view.

Renaming Files and Folders

There are two ways you can rename an item in the **Navigator** view. Select the item in the **Navigator** view and do one of the following:

- Invoke the **Rename** action from the contextual menu.
- Press **F2** and type the new name.

  To finish editing the item name, press **Enter**.

Locating and Opening Files

If a project folder contains a lot of documents, a certain document can be located quickly in the project tree by selecting the folder containing the desired document and typing the first few characters of the document name. The desired document is automatically selected as soon as the typed characters uniquely identify its name in the folder.

The selected document can be opened by pressing the **Enter** key, by double-clicking it, or with one of the **Open** actions from the contextual menu. The files with known document types are opened in the associated editor, while binary files are opened with the associated system application. To open a file with a known document type in an editor other than the default one, use the **Open with** action. Also, dragging and dropping files from the project tree to the editor area results in the files being opened.

Saving the Project

The project file is automatically saved every time the content of the **Navigator** view is saved or modified by actions such as adding or removing files and drag and drop.

Linked Folders

You can create linked folders (shortcuts) by dragging and dropping folders from the Windows Explorer / Mac OS X Finder to the project tree, or by using the contextual menu from the location in the project tree where you wanted it added and selecting **New** > **Folder** > **Advanced**.

To create a file inside a linked folder, use the contextual menu and select **New** > **File**. This opens the **New Document** wizard (you can use the **Advanced** button in the first wizard page to link to a file in the local file system).

Note: The linked folders presented in the **Navigator** view are marked with a special icon.

Validate Files

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be checked to be XML well-formed or validated against a schema (DTD, XML Schema, Relax NG, Schematron or NVDL) with one of the following contextual menu actions found in the **Validate** submenu:

Check Well-Formedness

Checks if the selected file or files are well-formed.

Validate

Validates the selected file or files against their associated schema. EPUB files make an exception, because this action triggers a **Validate and Check for Completeness** operation.

Validate with Schema

Validates the selected file of files against a specified schema.

Configure Validation Scenario(s)

Allows you to configure and run a validation scenario.

Clear Validation Markers

Clears all the error markers from the main editor and **Problems** view.

Applying Transformation Scenarios

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be transformed in one step with one of the following actions available from contextual menu in the **Transform** submenu:

Apply Transformation Scenario(s)

Obtains the output with one of the built-in scenarios.

Configure Transformation Scenario(s)

Opens a dialog box that allows you to configure pre-defined transformation scenarios.

Transform with

Allows you to select a transformation scenario to be applied to the currently selected files.

Refactoring Actions (Available for certain document types (such as XML, XSD, and XSL)

Oxygen XML Editor plugin includes some refactoring operations that help you manage the structure of your documents. The following actions are available from the contextual menu in the **Refactoring** submenu:

Rename resource

Allows you to change the name of a resource.

Move resource

Allows you to change the location on disk of a resource.

XML Refactoring

Opens the **XML Refactoring** tool wizard that presents refactoring operations to assist you with managing the structure of your XML documents.

Other Contextual Menu Actions

Other actions that are available in the contextual menu from the project tree include:

Open

Opens the selected files in the corresponding editor.

Open with submenu

This submenu offers you choices for opening the selected file in various editors.

Refresh

Refreshes the content and the dependencies between the resources in the **Master Files** directory.

XPath in Files

Opens the **XPath/XQuery Builder** view that allows you to compose XPath and XQuery expressions and execute them over the currently edited XML document.

Check Spelling in Files

Allows you to check the spelling of multiple files.

Format and Indent Files

Opens the **Format and Indent Files** dialog box that allows you to configure the format and indent (*pretty-print*) action that will be applied on the selected documents.

Properties

Displays the properties of the current file in a **Properties** dialog box.

Outline View in Text Mode

The **Outline** view in **Text** mode displays a general tag overview of the currently edited XML Document. When you edit a document, the **Outline** view dynamically follows the changes that you make, displaying the node that you modify. This functionality gives you great insight on the location of your modifications in the current document.

It also shows the correct hierarchical dependencies between elements. This makes it easy for you to be aware of the document structure and the way element tags are nested.

Outline View Features

The **Outline** view allows you to:

- Quickly navigate through the document by selecting nodes in the **Outline** tree.
- Insert or delete nodes using contextual menu actions.
- Move elements by dragging them to a new position in the tree structure.
- Highlight elements in the editor area. It is synchronized with the editor area, so when you make a selection in the editor area, the corresponding nodes are highlighted in the **Outline** view, and vice versa.
- View document errors, as they are highlighted in the **Outline** view. A tooltip also provides more information about the nature of the error when you hover over the faulted element.

Outline View Interface

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

It also includes a **View menu** in the top-right corner that presents a variety of options to help you filter the view even further.

Drop and Drop Actions in the Outline View

Entire XML elements can be moved or copied in the edited document using only the mouse in the **Outline** view with drag-and-drop operations. Several drag and drop actions are possible:

- If you drag an XML element in the **Outline** view and drop it on another node, then the dragged element will be moved after the drop target element.
- If you hold the mouse pointer over the drop target for a short time before the drop then the drop target element will be expanded first and the dragged element will be moved inside the drop target element after its opening tag.
- You can also drop an element before or after another element if you hold the mouse pointer towards the upper or lower part of the targeted element. A marker will indicate whether the drop will be performed before or after the target element.
- If you hold down the **(Ctrl (Command on OS X))** key after dragging, a copy operation will be performed instead of a move.

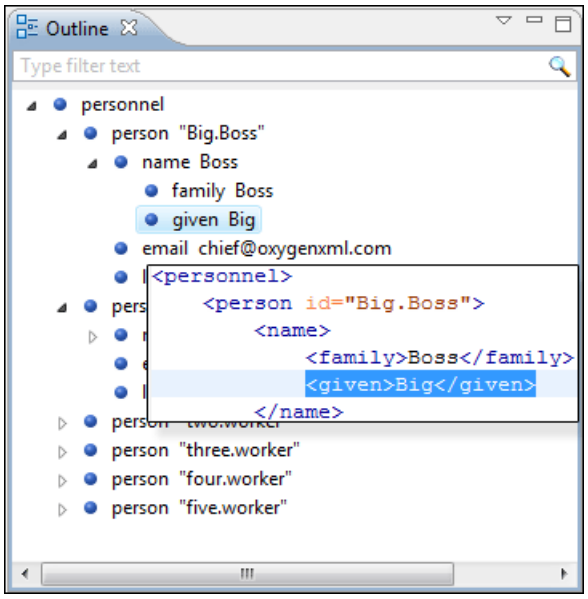


Figure 53: Outline View in Text Mode

Related Information:

Outline View in Author Mode on page 199

Outline View Filters in Text Mode

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

The following actions are available in the **View menu** of the **Outline** view when editing in **Text** mode:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Selection update on cursor move

Controls the synchronization between **Outline** view and source document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes in the editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the **XML Structured Outline** preferences page.

Outline View Contextual Menu Actions in Text Mode

The following actions are available from the contextual menu in the **Outline** view in **Text** mode:

Append Child

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it as a child of the current element.

Insert Before

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately before the current element, as a sibling.

Insert After

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately after the current element, as a sibling.

Edit Attributes

Opens a dialog box that allows you to edit the attributes of the currently selected component.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

Attributes View in Text Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use the **Attributes** view to insert attributes, edit their values, or add values to existing attributes.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.
- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

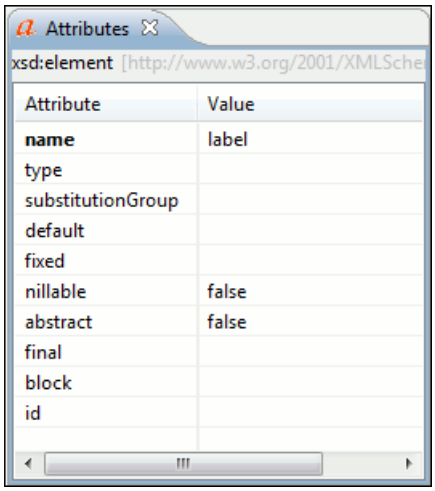


Figure 54: Attributes View

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Text** mode:

Add

Allows you to insert a new attribute. Adding an attribute that is not in the list of all defined attributes is not possible when the Allow only insertion of valid elements and attributes schema-aware option is selected.

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.
- If the clipboard only contains text, the value of the selected attribute is modified.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

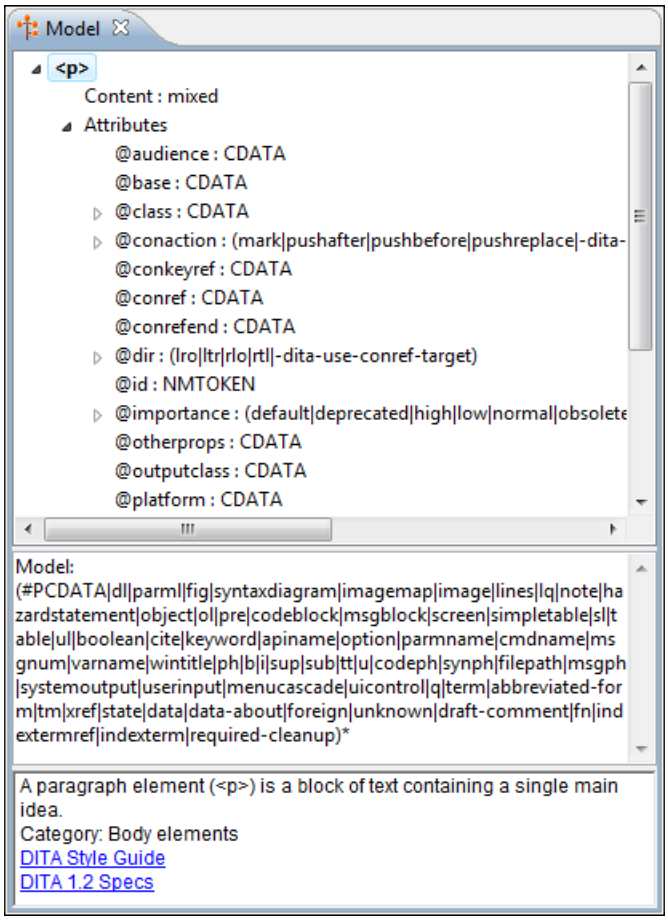


Figure 55: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

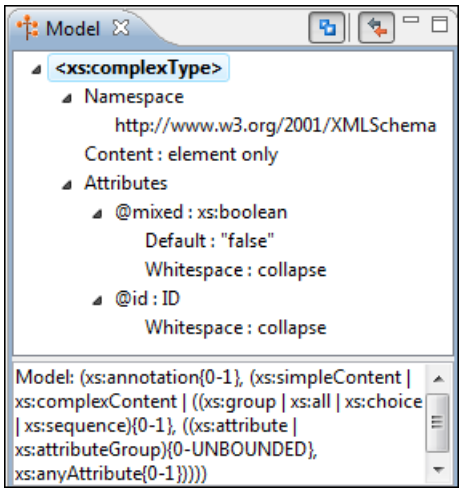


Figure 56: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

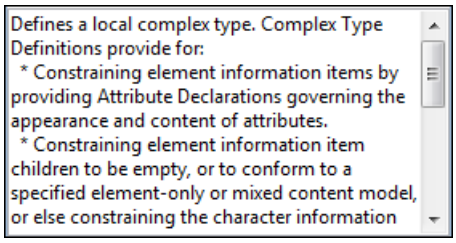


Figure 57: Annotation panel

Elements View in Text Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking any of the listed elements inserts that element into the edited document, at the current cursor position. Pressing **F2** with an element selected will display information about that particular element.

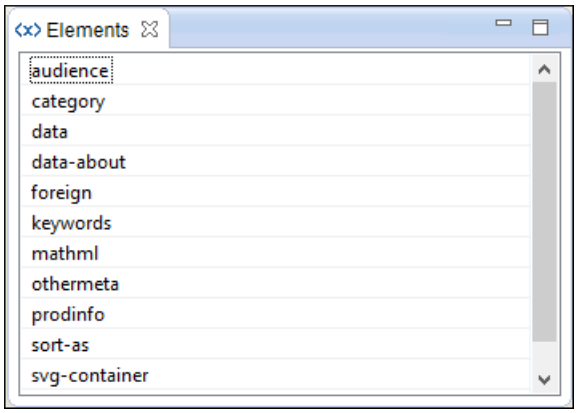


Figure 58: Elements View in Text Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

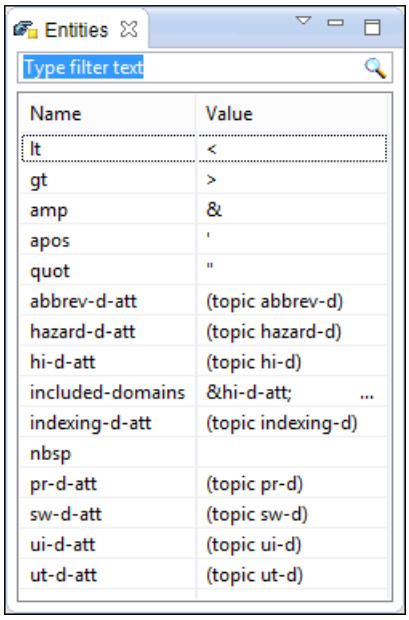


Figure 59: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Results View

The **Results** view displays the messages generated as a result of user actions such as validations, transformations, search operations, and others. Each message is a link to the location related to the event that triggered the message. Double-clicking a message opens the file containing the location and positions the cursor at the location offset. The **Results** view is automatically opened when certain actions generate result messages.

The actions that contribute messages to this view include:

- **Validation** actions
- **Transformation** actions
- **Check Spelling in Files** action
-
-
- **Search References** action
- SQL results

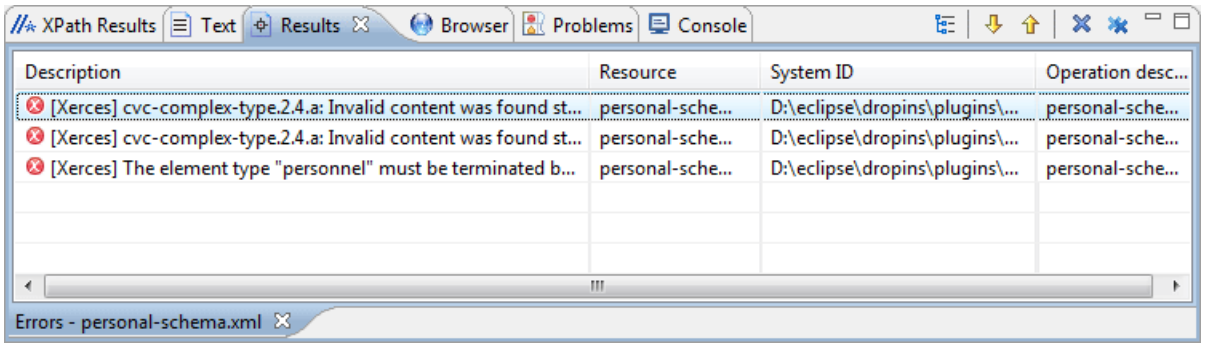


Figure 60: Results View

Results View Toolbar Actions

The view includes a toolbar with the following actions:

Grouping Mode toggle options

You can choose to group the result messages in a **Hierarchical** or **Flat** arrangement.

Next

Navigates to the message below the current selection.

Previous

Navigates to the message above the current selection.

Remove selected

Removes the current selection from the view. This can be helpful if you want to reduce the number of messages or remove those that have already been addressed or not relevant to your task.

Remove all

Removes all messages from the view.

Results View Contextual Menu Actions

The following actions are available when the contextual menu is invoked in this view:

Remove

Removes selected messages from the view.

Remove all

Removes all messages from the view.

Copy

Copies information associated with the selected messages. For example:

- The file path of the document that triggered the output message.
- Error severity (error, warning, info message, etc.)
- Name of validating processor.
- The line and column in the file that triggered the message.

Copy Description

Copies the description values for all selected items.

Show message

Opens a dialog box that displays the details of the message.

Save Results

Saves the complete list of messages in a file in text format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as XML

Saves the complete list of messages in a file in XML format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as HTML

Saves the complete list of messages in a file in HTML format. For each message, the included details are the same as the ones for the **Copy** action.

Expand All

Available when **Hierarchical** mode is selected. Expands all the nodes of the tree, which is useful when the messages are presented in a hierarchical mode.

Collapse All

Available when **Hierarchical** mode is selected. Collapses all the nodes of the tree, which is useful when the messages are presented in a hierarchical mode.

Syntax Highlighting in XML Documents

Oxygen XML Editor plugin supports syntax highlighting in XML documents to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for XML files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Customize Syntax Highlight colors on page 92

Syntax Highlight Depending on Namespace Prefix

The syntax highlight scheme of an XML file type allows the configuration of a color per each type of token that can appear in an XML file. Distinguishing between the XML tag tokens based on the namespace prefix brings additional visual help in editing some XML file types. For example, in XSLT stylesheets, elements from various namespaces (such as XSLT, XHTML, XSL:FO, or XForms) are inserted in the same document and the editor panel can become cluttered. Marking tags with different colors based on the namespace prefix allows easier identification of the tags.

```
<xsl:template match="name">
    <fo:list-item>
        <fo:list-item-label end-indent="label-end()">
            <fo:block text-align="end" font-weight="bold">Full Name:</fo:block>
        </fo:list-item-label>
        <fo:list-item-body start-indent="body-start()">
            <fo:block text-align="start" color="red">
                <xsl:apply-templates select="*"/>
            </fo:block>
        </fo:list-item-body>
    </fo:list-item>
</xsl:template>
```

Figure 61: Example of Coloring XML Tags by Prefix

Related Information:

Changing the colors displayed in the Text Mode Editor on page 92

Presenting Validation Errors in Text Mode

Oxygen XML Editor plugin can be configured to automatically validate documents while editing in the **Text** mode, and actions are also available to manually validate documents on-request.

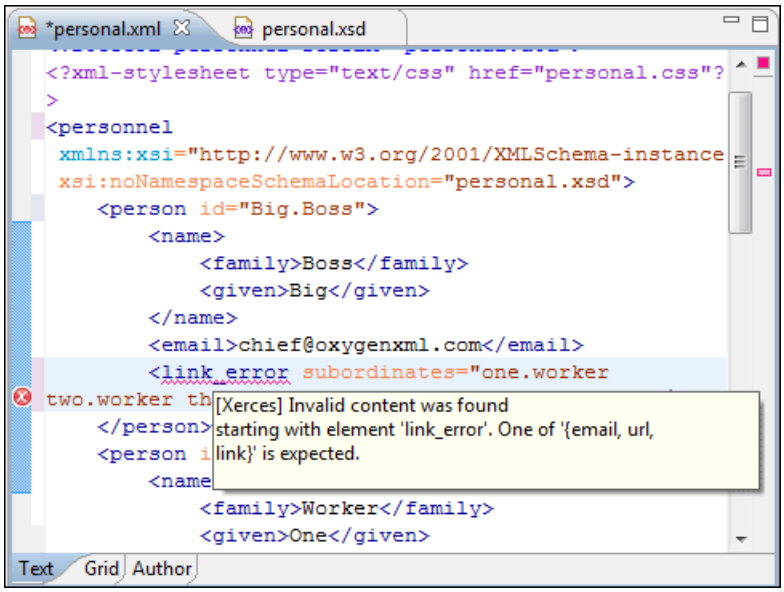


Figure 62: Presenting Validation Errors in Text Mode

Validation Marker Locations

In **Text** mode, validation issues are marked in the following locations:

- In the main editing pane, with the issue underlined in a color according to the type of issue.
- In the right-side vertical stripe, with a marker that is colored according to the type of issue.
- For attributes with detected issues, in the **Attributes** view, with the attribute and its value colored according to the type of issue.

Validation Marker Colors

The colors for each type of issue are as follows:

- **Validation Errors** [Red] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in red.
- **Validation Warnings** [Yellow] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in yellow.
- **Validation Info** [Blue] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in blue.

You can configure the colors and how the various types of validation problems are rendered from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Validation Markers in the Right-Side Stripe

Also, the stripe on the right side of the editor panel is designed to display the issues found during the validation process and to help you locate them in the document. The stripe contains the following:

Upper Part of the Stripe

A success indicator square will turn green if the validation is successful or only info messages are found, red if validation errors are found, or yellow if only validation warnings are found. More details about the issues are displayed in a tool tip when you hover over indicator square. If there are numerous problems, only the first three are presented in the tool tip.

Middle Part of the Stripe

Errors are depicted with red markers, warnings with yellow markers, and info message with blue markers. If you want to limit the number of markers that are displayed, open the **Preferences** dialog box , go to **Editor** > **Document checking**, and specify the desired limit in the **Maximum number of validation highlights** option.

Clicking a marker will highlight the corresponding text area in the editor. The validation message is also displayed both in a tool tip (when hovering over the marker) and in the message area on the bottom of the application.

Bottom Part of the Stripe

Two navigation arrows ( ) allow you to jump to the next or previous issue. The same actions can be triggered from **Document** > **Automatic validation** > **Next error** (**Ctrl + Period (Command + Period on OS X)**) and **Document** > **Automatic validation** > **Previous error** (**Ctrl + Comma (Command + Comma on OS X)**).

Hovering Over Validation Issues

Hovering over a validation issue presents a tooltip message with more details about the problem and possible *quick fixes* (if available for that issue). Also, when hovering over an issue, pressing **F2** will change the focus to the tooltip where you can use **Tab** and **Shift + Tab** to navigate between quick fixes and **Space** to trigger them.

Details About Validation Issues

- Information about the issue is also displayed in the message area on the bottom of the editor panel (clicking the **Document checking options** button opens the **Document Checking** preferences page where you can configure some validation options.
- Status messages from every validation action are logged in the **Console** view (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).
- If you want to see all the validation messages grouped in the **Results** view, you should use the **Validate** action from the toolbar or **XML** menu. This action also collects the validation messages and displays them in the **Problems** view if the validated file is in the current workspace or in a custom **Errors** view if the validated file is outside the workspace.

Related Information:

Validating XML Documents Against a Schema on page 561

Presenting Schematron Validation Issues

Formatting and Indenting XML Documents

Oxygen XML Editor plugin creates XML documents using several edit modes. In **Text** mode, you as the author decide how the XML file is formatted and indented. In the other modes, and when you switch between modes, Oxygen XML Editor plugin must decide how to format and indent the XML. Oxygen XML Editor plugin will also format and indent your XML for you in **Text** mode if you use one of the Format and Indent options:

- **Document** > **Source** > **Format and Indent** - Formats and indents the whole document.
- **Document** > **Source** > **Indent Selection** - Indents the current selection (but does not add line breaks). This action is also available in the **Source** submenu of the contextual menu.
- **Document** > **Source** > **Format and Indent Element** - Formats and indents the current element (the inmost nested element that currently contains the cursor) and its child-elements. This action is also available in the **Source** submenu of the contextual menu.

A number of settings affect how Oxygen XML Editor plugin formats and indents XML. Many of these settings have to do with how whitespace is handled.

Significant and insignificant whitespace in XML

XML documents are text files that describe complex documents. Some of the white space (spaces, tabs, line feeds, etc.) in the XML document belongs to the document it describes (such as the space between words in a paragraph) and some of it belongs to the XML document (such as a line break between two XML elements). Whitespace belonging to the XML file is called *insignificant whitespace*. The meaning of the XML would be the same if the insignificant whitespace were removed. Whitespace belonging to the document being described is called *significant whitespace*.

Knowing when whitespace is significant or insignificant is not always easy. For instance, a paragraph in an XML document might be laid out like this:

```
<p>NO Free man shall be taken or imprisoned, or be stripped of his Freedom,
```

```
or Liberties, or free Customs, or be outlawed, or exiled, or any otherwise
destroyed; nor will we not pass upon him, nor condemn him, but by lawful
judgment of his Peers, or by the <xref
href="http://en.wikipedia.org/wiki/Law_of_the_land" format="html"
scope="external">Law of the land</xref>.
We will sell to no man, we will not deny to any man either Justice or Right.</p>
```

By default, XML considers a single whitespace between words to be significant, and all other whitespace to be insignificant. The paragraph above could have been written on one line because the XML parser would see it as exactly the same paragraph since all multiple consecutive whitespaces will be replaced with a single whitespace. Removing the insignificant space in markup like this is called *normalizing space*.

In some cases, all the spaces inside an element should be treated as significant. For example, in a code sample:

```
<codeblock>
class HelloWorld
{
   public static void main(String args[])
   {
      System.out.println("Hello World");
   }
}
</codeblock>
```

Here every whitespace character between the `codeblock` tags should be treated as significant.

How Oxygen XML Editor plugin determines when whitespace is significant

When Oxygen XML Editor plugin formats and indents an XML document, it introduces or removes insignificant whitespace to produce a layout with reasonable line lengths and elements indented to show their place in the hierarchy of the document. To correctly format and indent the XML source, Oxygen XML Editor plugin needs to know when to treat whitespace as significant and when to treat it as insignificant. However it is not always possible to tell this from the XML source file alone. To determine what whitespace is significant, Oxygen XML Editor plugin assigns each element in the document to one of four categories:

Ignore space

In the ignore space category, all whitespace is considered insignificant. This generally applies to content that consists only of elements nested inside other elements, with no text content.

Normalize space

In the normalize space category, a single whitespace character between character strings is considered significant and all other spaces are considered insignificant. Therefore, all consecutive whitespaces will be replaced with a single space. This generally applies to elements that contain text content only.

Mixed content

In the mixed content category, a single whitespace between text characters is considered significant and all other spaces are considered insignificant. However,

- Whitespace between two child elements embedded in the text is normalized to a single space (rather than to zero spaces as would normally be the case for a text node with only whitespace characters, or the space between elements generally).
- The lack of whitespace between a child element embedded in the text and either adjacent text or another child element is considered significant. That is, no whitespace can be introduced here when formatting and indenting the file.

For example:

```
<p>The file is located in <i>HOME</i>/<i>USER</i>/hello.
     This is a <strong>big</strong>

<emphasis>deal</emphasis>.
</p>
```

In this example, whitespace should not be introduced around the i tags as it would introduce extra significant whitespace into the document. The space between the end `</strong>` tag and the beginning `<emphasis>` tag should be normalized to a single space, not zero spaces.

Preserve space

In the preserve space category, all whitespace in the element is regarded as significant. No changes are made to the spaces in elements in this category. However, child elements may be in another category, and may be treated differently.

Attribute values are always in the preserve space category. The spaces between attributes in an element tag are always in the default space category.

Oxygen XML Editor plugin consults several pieces of information to assign an element to one of these categories. An element is always assigned to the most restrictive category (from Ignore to Preserve) that it is assigned to by any of the sources Oxygen XML Editor plugin consults. For instance, if the element is named on the **Default elements** list (as described below) but it has an `xml:space="preserve"` attribute in the source file, it will be assigned to the preserve space category. If an element has the `xml:space="default"` attribute in the source, but is listed on the **Mixed content** elements list, it will be assigned to the mixed content category.

To assign elements to these categories, Oxygen XML Editor plugin consults information from the following sources:

`xml:space`

If the XML element contains the `xml:space` attribute, the element is promoted to the appropriate category based on the value of the attribute.

CSS whitespace property

If the CSS stylesheet controlling the **Author** mode editor applies the `whitespace: pre` setting to an element, it is promoted to the preserve space category.

CSS display property

If a text node contains only white-spaces:

- If the node has a parent element with the CSS `display` property set to `inline` then the node is promoted to the mixed content category.
- If the left or right sibling is an element with the CSS `display` property set to `inline` then the node is promoted to the mixed content category.
- If one of its ancestors is an element with the CSS `display` property set to `table` then the node is assigned to the ignore space category.

Schema aware formatting

If a schema is available for the XML document, Oxygen XML Editor plugin can use information from the schema to promote the element to the appropriate category. For example:

- If the schema declares an element to be of type `xs:string`, the element will be promoted to the preserve space category because the string built-in type has the whitespace facet with the value preserve.
- If the schema declares an element to be mixed content, it will be promoted to the mixed content category.

Schema aware formatting can be turned on and off.

- To turn it on or off for **Author** mode, open the **Preferences** dialog box , go to **Editor** > **Edit modes** > **Author** > **Schema aware**, and select/deselect the **Schema aware normalization, format and indent** option.
- To turn it on or off for the **Text** editing mode ,open the **Preferences** dialog box , go to **Editor** > **Format** > **XML**, and select/deselect the **Schema aware format and indent** option.

Preserve space elements list

If an element is listed in the **Preserve space** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the preserve space category.

Default space elements list

If an element is listed in the **Default space** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the default space category

Mixed content elements list

If an element is listed in the **Mixed content** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the mixed content category.

Element content

If an element contains mixed content, that is, a mix of text and other elements, it is promoted to the mixed content category. (Note that, in accordance with these rules, this happens even if the schema declares the element to have element only content.)

If an element contains text content, it is promoted to the default space category.

Text node content

If a text node contains any non-whitespace characters then the text node is promoted to the normalize space category.

Exception to the Rule

In general, a element can only be promoted to a more restrictive category (one that treats more whitespace as significant). However, there is one exception. In **Author** mode, if an element is marked as mixed content in the schema, but the actual element contains no text content, it can be demoted to the space ignore category if all of its child elements are displayed as *blocks* by the associated CSS (that is, they have a CSS property of `display : block`). For example, in some schemas, a section or a table entry can be defined as having mixed content but in many cases they contain only *block elements*. In these cases, any whitespace they contain cannot be significant and they can be treated as space ignore elements. This exception can be turned on or off using the **Schema Aware Editing** option in the **Schema-Aware** preferences page.

How Oxygen XML Editor plugin formats and indents XML

You can control how Oxygen XML Editor plugin formats and indents XML documents. This can be particularly important if you store your XML document in a version control system, as it allows you to limit the number of trivial changes in spacing between versions of an XML document. The following preference pages include options that control how XML documents are formatted:

- **Format** preferences page
- **XML Formatting** preferences page
- **Whitespaces** preferences page

When Oxygen XML Editor plugin formats and indents XML

Oxygen XML Editor plugin formats and indents a document, or part of it, on the following occasions:

- In **Text** mode when you select one of the format and indent actions (**Document** > **Source** > **Format and Indent**, **Document** > **Source** > **Indent Selection**, or **Document** > **Source** > **Format and Indent Element**).
- When saving documents in **Author** mode.
- When switching from **Author** mode to another mode.
- When saving documents in **Design** mode.
- When switching from **Design** mode to another mode.
- When saving or switching to **Text** mode from **Grid** mode, if the **Format and indent when passing from grid to text or on save** option is selected in the **Grid** preferences page.

Setting an Indent Size to Zero

Oxygen XML Editor plugin will automatically format and indent documents at certain times. This includes indenting the content from the margin to reflect its structure. In some cases, you may not want your content indented. To avoid your content being indented, you can set an indent size of zero.

Note: Changing the indent size does not override the rules that Oxygen XML Editor plugin uses for handling whitespace when formatting and indenting XML documents. Therefore, changing the indent size will have no effect on elements that require whitespaces to be maintained.

There are two cases to consider.

Maintaining zero indent in documents with zero indent

If you have existing documents with zero indent and you want Oxygen XML Editor plugin to maintain a zero indent when editing or formatting those documents:

1. Open the **Preferences** dialog box and go to **Editor** > **Format**.
2. Select **Detect indent on open**.
3. Select **Use zero-indent if detected**.

Oxygen XML Editor plugin will examine the indent of each document as it is opened and if the indent is zero for all lines, or for nearly all lines, a zero indent will be used when formatting and indenting the document. Otherwise, Oxygen XML Editor plugin will use the indent closest to what it detects in the document.

Enforcing zero indent for all documents

If you want all documents to be formatted with zero indent, regardless of their current indenting:

1. Open the **Preferences** dialog box and go to **Editor** > **Format**.
2. Deselect **Detect indent on open**.
3. Set **Indent size** to `0`.

All documents will be formatted and indented with an indent of zero.

Warning: Setting the indent size to zero can change the meaning of some file types, such as Python source files.

Format and Indent (Pretty-Print) Multiple Files

Oxygen XML Editor plugin provides support for formatting and indenting (*pretty-print*) multiple files at once. This action is available for any document in XML format, as well as for XQuery, CSS, JavaScript, and JSON documents.

To format and indent multiple files, use the **Format and Indent Files** action that is available in the contextual menu of the **Navigator** view. This opens the **Format and Indent Files** dialog box that allows you to configure options for the action.

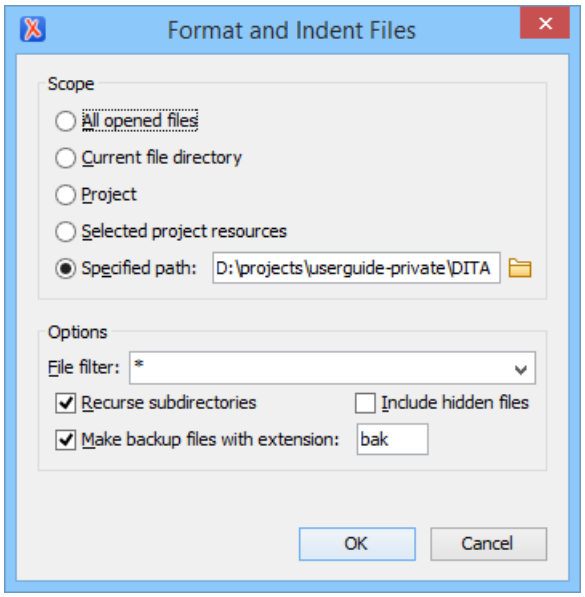


Figure 63: Format and Indent Files Dialog Box

The **Scope** section allows you choose from the following scopes:

- **All opened files** - The *pretty-print* is performed in all opened files.
- **Directory of the current file** - All the files in the folder of the current edited file.
- **Project files** - All files from the current project.
- **Selected project files** - The selected files from the current project.
- **Specified path** - the *pretty-print* is performed in the files located at a specified path.

The **Options** section includes the following options:

- **File filter** - Allow you to filter the files from the selected scope.
- **Recurse subdirectories** - When selected, the *pretty-print* is performed recursively for the specified scope. The one exception is that this option is ignored if the scope is set to **All opened files**.
- **Include hidden files** - When selected, the *pretty-print* is also performed in the hidden files.
- **Make backup files with extension** - When selected, Oxygen XML Editor plugin makes backup files of the modified files. The default extension is `.bak`, but you can change the extension as you prefer.

Managing Highlighted Content

While working with XML documents you often have frequent changes to the structure and content. You are often faced with a situation where you need to make a slight change in multiple places in the same document. Oxygen XML Editor plugin includes a feature, **Manage Highlighted Content**, that is designed to help you achieve this.

When you are in **Text** mode and you perform a search operation or apply an XPath that highlights multiple results, you can select the **Manage Highlighted Content** action from the contextual menu of any highlight in the document, and the following options are available in its submenu:

- **Modify All** - Use this option to modify (in-place) all the occurrences of the selected content. When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

  Note: If you select a very large number of highlights that you want to modify using this feature, a dialog box informs you that you may experience performance issues. You have the option to either use the **Find/Replace** operation, or continue the operation.
- **Surround All** - Use this option to surround the highlighted content with a specific tag. This option opens the **Tag** dialog box. The **Specify the tag** drop-down menu presents all the available elements that you can choose from.
- **Remove All** - Removes all the highlighted content.

If you right-click content in another part of the document, other than a highlight, you have the option to select the following option:

- **Modify All Matches** - Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment in which the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Quick Assist Support for IDs and IDREFS

The *Quick Assist* support is activated automatically when you place the cursor inside an ID or IDREF in **Text** mode. To access it, click the yellow bulb help marker placed on the current line, in the line number stripe of the editor. You can also invoke the *Quick Assist* menu from the contextual menu or by pressing **Ctrl+1** **(Command+1 on Mac OS X)** on your keyboard.

The following actions are available:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation. For a preview of the changes you are about to make, click **Preview**. This opens the **Preview** dialog box, which presents a list with the files that contain changes and a preview zone of these changes.

Search Declarations

Searches for the declaration of the ID reference. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Change scope

Opens the **Select the scope for the Search and Refactor operations** dialog box.

Rename in File

Renames the ID you are editing and all its occurrences from the current file.

Search Occurrences

Searches for the declaration an references of the ID located at the cursor position in the current document.

Related Information:

Highlight ID Occurrences in Text Mode

To see the occurrences of an ID in an XML document in the **Text** mode, place the cursor inside the ID declaration or reference. The occurrences are marked in the vertical side bar at the right of the editor. Click a marker on the side bar to jump to the occurrence that it corresponds to. The occurrences are also highlighted in the editing area.

Note: Highlighted ID declarations are rendered with a different color than highlighted ID references. To customize these colors or disable this feature, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**.

Related Information:

Contextual Menu Actions in Text Mode

When editing XML documents in **Text** mode, Oxygen XML Editor plugin provides the following actions in the contextual menu (many of them also appear in the submenus of the **Document** menu):

Cut, Copy, Paste

Executes the typical editing actions on the currently selected content.

Copy XPath

Copies the XPath expression of the current element or attribute from the current editor to the clipboard.

Toggle Comment (Ctrl + Shift + Comma (Command + Shift + Comma on OS X))

Comments the current selection of the current editor. If the selection already contains a comment the action removes the comment from around the selection. If there is no selection in the current editor and the cursor is not positioned inside a comment the current line is commented. If the cursor is positioned inside a comment then the commented text is uncommented.

Go to submenu

This submenu includes the following actions:

Go to Matching Tag (Ctrl + Shift + G)

Moves the cursor to the end tag that matches the start tag, or vice versa.

Go after Next Tag (Ctrl + CloseBracket (Command + CloseBracket on OS X))

Moves the cursor to the end of the next tag.

Go after Previous Tag (Ctrl + OpenBracket (Command + OpenBracket on OS X))

Moves the cursor to the end of the previous tag.

Select submenu

This submenu allows you to select the following:

Element

Selects the entire element at the current cursor position.

Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Attributes

Selects all the attributes of the element at the current cursor position.

Parent

Selects the parent element at the current cursor position.

Source submenu

This submenu includes the following actions:

Shift Right

Shifts the currently selected block to the right.

Shift Left

Shifts the currently selected block to the left.

Indent selection (Ctrl + I (Command + I on OS X))

Corrects the indentation of the selected block of lines if it does not follow the current indenting preferences.

Escape Selection

Escapes a range of characters by replacing them with the corresponding character entities.

Unescape Selection

Replaces the character entities with the corresponding characters.

Format and Indent Element (Ctrl + Shift + I (Command + Shift + I on OS X))

Pretty-prints the element that surrounds the current cursor position.

Convert Hexadecimal Sequence to Character (Ctrl + Shift + H (Command + Shift + H on OS X))

Converts a sequence of hexadecimal characters to the corresponding Unicode character. The action can be invoked if there is a selection containing a valid hexadecimal sequence or if the cursor is placed at the right side of a valid hexadecimal sequence. A valid hexadecimal sequence can be composed of 2 to 4 hexadecimal characters and may or may not be preceded by the `0x` or `0X` prefix. Examples of valid sequences and the characters they will be converted to:

- `0x0045` will be converted to E
- `0X0125` to ĥ
- `265` to #
- `2190` to #

Base64 Encode/Decode submenu

This submenu include the following actions for encoding or decoding **base64** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Base32 Encode/Decode submenu

This submenu include the following actions for encoding or decoding **base32** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Hex Encode/Decode submenu

This submenu include the following actions for encoding or decoding **hex** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Join and Normalize Lines

For the current selection, this action joins the lines by replacing the *line separator* with a single space character. It also normalizes the whitespaces by replacing a sequence of such characters with a single space.

Insert XInclude

Displays a dialog box that allows you to browse and select the content to be included and automatically generates the corresponding XInclude instruction.

Note: In the **Author** mode, this dialog box presents a preview of the inserted document as an author page in the **Preview** tab and as a text page in the **Source** tab. In the **Text** mode, the **Source** tab is presented.

Import entities list

Displays a dialog box that allows you to select a list of files as sources for external DTD entities. The internal subset of the DOCTYPE declaration of your document will be updated with the chosen entities. For instance, choosing the files `chapter1.xml` and `chapter2.xml` inserts the following section in the DOCTYPE:

```
<!ENTITY chapter1 SYSTEM "chapter1.xml">
<!ENTITY chapter2 SYSTEM "chapter2.xml">
```

Canonicalize

Opens the **Canonicalize** dialog box that allows you to select a *canonicalization* algorithm to standardize the format of the document.

Sign

Opens the **Sign** dialog box that allows you to configure a digital signature for the document.

Verify Signature

Allows you to specify the location of a file to verify its digital signature.

Manage Highlighted Content submenu

This submenu is available from the contextual menu when it is invoked from a highlight after you perform a search operation or apply an XPath expression that highlights more than one result. The following options are available in this submenu:

Modify All

Allows you to modify (in-place) all the occurrences of the selected content. A thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Surround All

Surround the highlighted content with a specific tag. This option opens the **Tag** dialog box. The **Specify the tag** drop-down menu presents all the available elements that you can choose from.

Remove All

Removes all the highlighted content.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Go to Definition (Ctrl + Shift + Enter)

Moves the cursor to the definition of the current element or attribute in the schema (DTD, XML Schema, Relax NG schema) associated with the edited XML document. If the current attribute is a “type” belonging to the “http://www.w3.org/2001/XMLSchema-instance” namespace, the cursor is moved in the XML schema to the definition of the type referenced in the value of the attribute.

Refactoring submenu

This submenu includes the following actions:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Rename Prefix (Alt + Shift + P (Command + Shift + P on OS X))

The prefix of the element from the cursor position, and any elements with the same prefix, can be renamed according with the options from the **Rename** dialog box.

- If you select the **Rename current element prefix** option, the application will recursively traverse the current element and all its children. *For example*, to change the `xmlns:p1="ns1"` association in the current element to `xmlns:p5="ns1"`, if the `xmlns:p1="ns1"` association is applied on the parent element, then Oxygen XML Editor plugin will introduce `xmlns:p5="ns1"` as a new declaration in the current element and will change the prefix from `p1` to `p5`. If `p5` is already associated with another namespace in the current element, then the conflict will be displayed in a dialog box. By pressing **OK**, the prefix is modified from `p1` to `p5` without inserting a new declaration.
- If you select the **Rename current prefix in all document** option, the application will apply the change on the entire document.
- To also apply the action inside attribute values, select the **Rename also attribute values that start with the same prefix** checkbox.

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag that encloses a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Surround with <![CDATA]]> (Alt + Shift + C (Command + Alt + C on OS X))

Surround the selected content with a `CDATA` tag so that the parser will interpret it as textual data rather than markup.

Delete element tags (Alt + Shift + Comma)

Deletes the start and end tag of the current element.

Split element

Split the element from the cursor position into two identical elements. The cursor must be inside the element.

Join elements (Alt + Shift + F (Command + Alt + F on OS X))

Joins the left and right elements relative to the current cursor position. The elements must have the same name, attributes, and attributes values.

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Manage IDs submenu

This submenu is available for XML documents that have an associated DTD, XML Schema, or Relax NG schema. It includes the following actions:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation. For a preview of the changes you are about to make, click **Preview**. This opens the **Preview** dialog box, which presents a list with the files that contain changes and a preview zone of these changes.

Rename in File

Renames the ID you are editing and all its occurrences from the current file.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References in

Searches for the references of the ID. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Declarations

Searches for the declaration of the ID reference. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search Declarations in

Searches for the declaration of the ID reference. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Occurrences in file

Searches for the declaration an references of the ID in the current document.

Quick Assist (Ctrl + 1 (Command + 1 on OS X))

Available when the cursor is inside an ID or IDREF, this action opens the *Quick Assist* window that allows you to select some search and refactoring actions for the selected ID or IDREF.

Open File at Cursor

Opens the file at the cursor position in a new panel. If the file path represents a directory path, it will be opened in system file browser. If the file at the specified location does not exist, an error dialog box is displayed and it includes a **Create new file** button that starts the **New document** wizard. This allows you to choose the type or the template for the file. If the action succeeds, the file is created with the referenced location and name and is opened in a new editor panel.

Resource Hierarchy

Opens the **Resource Hierarchy/Dependencies** view that allows you to see the resource hierarchy for an XML document.

Resource Dependencies

Opens the **Resource Hierarchy/Dependencies** view that allows you to see the resource dependencies for an XML document.

Grid Editing Mode

The Oxygen XML Editor plugin **Grid** editing mode displays the XML document as a structured grid of nested tables where the text content can be modified without directly interacting with the XML markup. This is helpful for non-technical users who want to edit text content without modifying the XML markup. You can easily expand or collapse elements within the table and the document structure can be changed with simple drag/drop or copy/paste operations.

To switch to this mode, select **Grid** at the bottom of the editing area.

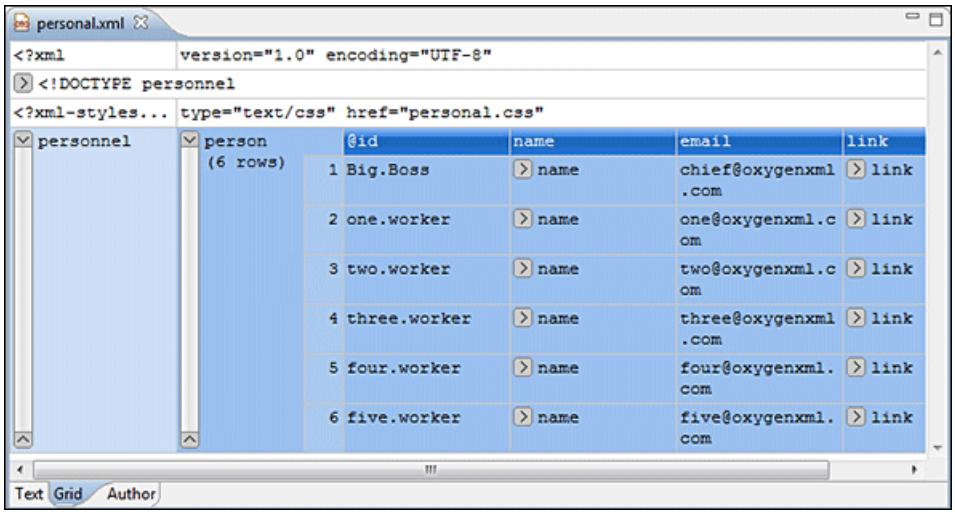


Figure 64: Grid Editing Mode

For more information about some of the features available in the **Grid** editor, watch our video demonstration:

https://www.youtube.com/embed/PoYm2VqisWk

Related Information:

Editing XML Documents in Grid Mode on page 437

Layouts: Grid and Tree

The **Grid** editor offers two layout modes. The default one is the grid layout. This smart layout detects the recurring elements in the XML document and creates tables having the children (including the attributes) of these elements as columns. This way, it is possible to have tables nested in other tables, reflecting the structure of your document.

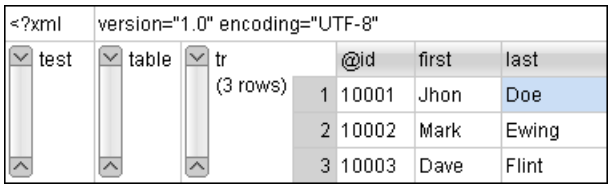


Figure 65: Grid Layout

The other layout mode is tree-like. It does not create any tables and it only presents the structure of the document.

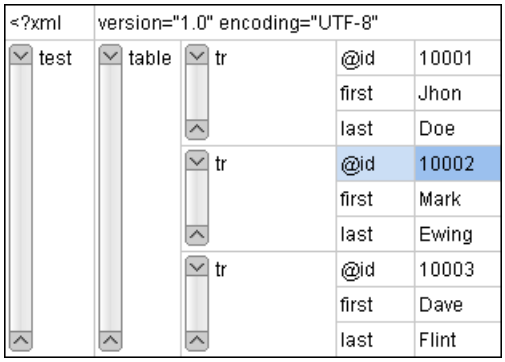


Figure 66: Tree Layout

To switch between the two modes, select **Grid mode/Tree mode** from the contextual menu.

Grid Mode Navigation

When you first open a document in **Grid** mode, the content is collapsed. Only the root element and its attributes are displayed. An arrow sign ( ) displayed at the left of the node name indicates that this node has child nodes. To display the children, click this arrow sign. To collapse a node, click the reverse arrow sign ( ). The expand/collapse actions can also be invoked with the **NumPad+** and **NumPad-** keys, or from the **Expand/Collapse** submenu of the contextual menu.

Expand/Collapse Submenu

The following actions are available on the **Expand/Collapse** submenu:

Expand All

Expands the selection and all its children.

Collapse All

Collapses the selection and all its children.

Expand Children

Expands all the children of the selection but not the selection.

Collapse Children

Collapses all the children of the selection but not the selection.

Collapse Others

Collapses all the siblings of the current selection but not the selection.

Keyboard Shortcuts

A variety of other keyboard shortcuts are also available in **Grid** mode:

Table 2: Shortcuts in the Grid Mode

Key	Action
Tab	Moves the cursor to the next editable value in a table row.
Shift + Tab	Moves the cursor to the previous editable value in a table row.
Enter	Begins editing and lets you insert a new value. Also commits the changes after you finish editing.
UpArrow/PageUp	Navigates toward the beginning of the document.
DownArrow/PageDown	Navigates toward the end of the document.
Shift	Used in conjunction with the navigation keys to create a continuous selection area.
Ctrl (Command on OS X) key	Used in conjunction with the mouse cursor to create discontinuous selection areas.

The following key combinations can be used to scroll the grid:

- **Ctrl + UpArrow (Command + UpArrow on OS X)** - scrolls the grid upwards.
- **Ctrl + DownArrow (Command + DownArrow on OS X)** - scrolls the grid downwards.
- **Ctrl + LeftArrow (Command + LeftArrow on OS X)** scrolls the grid to the left.
- **Ctrl + RightArrow (Command + RightArrow on OS X)** scrolls the grid to the right.

Related Information:

Editing Actions in Grid Mode on page 437

Special Character Support in Grid Mode

If you are editing documents with a bidirectional text orientation or other special characters (such as combining characters), you can change the way the text is rendered and edited in the grid cells by using the **Change Text Orientation**(**Ctrl + Shift + O (Command + Shift + O on OS X)**) action that is available from the **Edit** menu in the **Grid** editing mode. Use this action to switch from the default left to right text orientation to the right to left orientation, and vice versa.

Note: This change applies only to the text from the cells, and not to the layout of the grid editor.

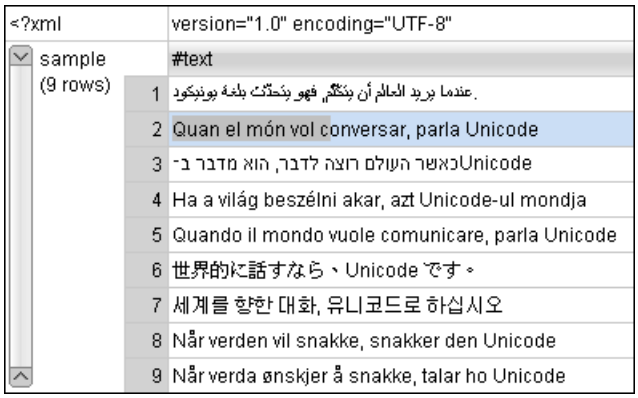


Figure 67: Default left to right text orientation

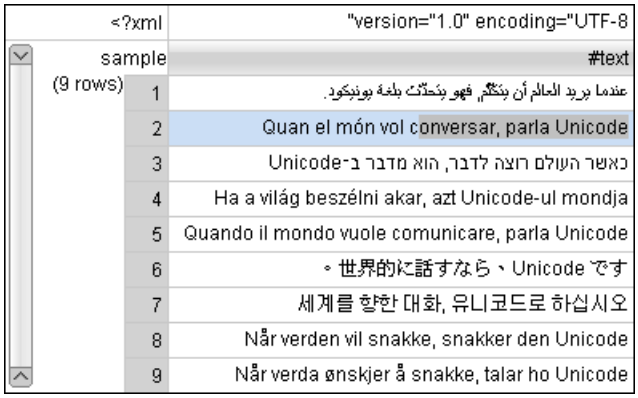


Figure 68: Right to left text orientation

Related Information:

Special Character Support in Author Mode on page 324
Inserting Special Characters on page 396

Editing Actions in Grid Mode

Since **Grid** mode presents XML content in a structured grid of nested tables, editing content in this mode can be done with a combination of the *Content Completion Assistant* and actions that allow you to work with the structure or content of the nested tables much like you would with any table. Oxygen XML Editor plugin provides ways to edit content in the cells of the nested tables or to edit the structure of the tables.

Tip: There are two different types of layouts available in **Grid** mode. Most people prefer to leave it on the default **Grid mode** layout, but there is also a **Tree mode** layout that presents the structure of the document in more of a vertical tree-like manner. You can switch between the two layouts to see which one works best for you particular situation from the **Document** > **Grid Layout** menu.

Expanding/Collapsing Nodes

An arrow sign ( ) displayed at the left of a node indicates that it has child nodes. To display the children, click this arrow sign. To collapse a node, click the reverse arrow sign ( ). The expand/collapse actions can also be invoked with the **NumPad+** and **NumPad-** keys, or from the **Expand/Collapse** submenu of the contextual menu.

To expand all child nodes, right-click the cell that contains the parent node and select **Expand All** from the **Expand/Collapse** submenu. To collapse all node, right-click any cell and select **Collapse All** from the **Expand/Collapse** submenu.

Editing Elements or Attributes

To edit elements or attributes in **Grid** mode, simply double-click the cell that contains the element or attribute (or select the cell and press **(Enter)**) to invoke the *Content Completion Assistant*. This opens a pop-up window that offers a list of proposals that are valid for that particular node.

Editing Text Content in Cells

To edit the text value of a cell, simply select the grid cell and press **Enter** (or double-click the cell), and start editing.

To stop editing a cell value, press **Enter** again.

To cancel the editing without saving the current changes in the document, press the **Esc** key.

Editing the Structure of the Nested Tables

To edit the structure of the nested tables in **Grid** mode, Oxygen XML Editor plugin provides the following actions in the contextual menu (many of them also appear in the submenus of the **Document** menu, or the toolbar):

Cut, **Copy,** **Paste,** **Delete common editing actions**

Executes the typical editing actions on the currently selected elements. The **Cut** and **Copy** operations preserve the styles of the copied content.

Paste as Child

Pastes the copied content as the last child of the current selection.

Duplicate

Creates a new node by duplicating the currently selected one.

Insert Before

Offers a list of valid nodes, depending on the context, and inserts your selection before the currently selected node, as a sibling.

Insert After

Offers a list of valid nodes, depending on the context, and inserts your selection after the currently selected node, as a sibling.

Append Child

Offers a list of valid nodes, depending on the context, and appends your selection as a child of the currently selected node.

Sort Ascending, **Sort Descending**

The sorting result depends on the data type of the column content. It could be a numerical sorting for numbers or an alphabetical sorting for text information. The editor automatically analyzes the content and decides what type of sorting to apply. When a mixed set of values is present in the sorted column, a dialog box is displayed that allows you to choose the desired type of sorting between *numerical* and *alphabetical*.

Insert Row

Inserts a new row below the current selection. To insert a new row, you could also select the row header (the zone to the left of the row that holds the row number) and press **Enter**.

Insert Column

Inserts a column after the current selection.

Clear Content

Removes all content from the current cell.

Expand/Collapse > **Expand All**

Expands the selection and all its children.

Expand/Collapse > **Collapse All**

Collapses the selection and all its children.

Expand/Collapse > Expand Children

Expands all the children of the selection but not the selection.

Expand/Collapse > Collapse Children

Collapses all the children of the selection but not the selection.

Expand/Collapse > Collapse Others

Collapses all the siblings of the current selection but not the selection.

Refresh Selected

Forces the layout to be recomputed.

Related Information:

Grid Mode Navigation on page 185
Copy and Paste in the Grid Editing Mode on page 439
Drag and Drop in the Grid Editing Mode on page 438
Content Completion Assistant in Grid Mode on page 441

Drag and Drop in the Grid Editing Mode

You can easily arrange sections in your XML document in the **Grid** mode by using drag and drop actions.

You can do the following with drag and drop:

- Copy or move a set of nodes.
- Change the order of columns in the tables.
- Move the rows from the tables.

These operations are available for both single and multiple selections. To deselect one of the selected fragments, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.

While dragging, the editor paints guide-lines showing the locations where you can drop the nodes. You can also drag nodes outside the **Grid** editor and text from other applications into the **Grid**.

Tip: When using drag and drop to reorganize the document, the resulting layout can be different from what you expected. For instance, the layout can contain a set of sibling tables that can be joined together. To force the layout to be recomputed, you can use the **Refresh Selected** action that is available in the contextual menu and in the **Document** > **Grid Edit** menu.

Copy and Paste in the Grid Editing Mode

Selecting content in the **Grid** mode is similar to working with any table with a little more complexity. Specifically, depending on the type of node, when you select a cell, the selection may automatically include additional cells that are implied by the currently selected node. For example, if you click a node that contains any child nodes, all cells that contain the parent and child nodes will be selected. In this case, the currently selected cell is painted with a color that is different from the rest of the selection.

You can also select discontinuous regions of nodes and place them in the clipboard with the copy action. To deselect one of the selected fragments, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.

Pasting Content Within Grid Mode

You can paste copied nodes relative to the currently selected cell using one of the following actions (available in the contextual menu):

- **Paste (Ctrl + V (Command + V on OS X))** - Pastes copied content, as a sibling, just below (after) the current selection.
- **Paste as Child** - Pastes copied content as the last child of the current selection.

Pasting Content from Grid Mode to Other Editors

Nodes that are copied from the **Grid** editor can also be pasted into **Text** mode or other external applications. When pasting copied content from **Grid** mode, the inserted string represents the nodes serialization. The nodes from tables can be copied using HTML or RTF in table format. The resulting cells contain only the concatenated values of the text nodes.

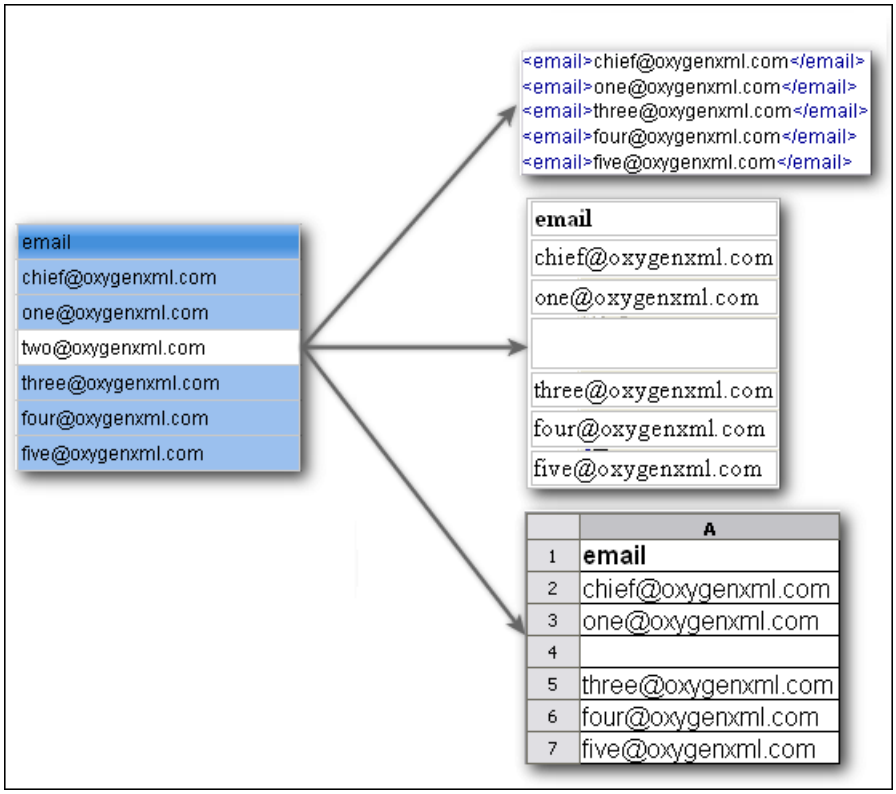


Figure 69: Copying from Grid to Other Editors

Pasting Content from Other Editors into Grid Mode

You can also paste well-formed XML content or tab-separated values from other editors into the **Grid** editor. If you paste XML content, the result will be the insertion of the nodes obtained by parsing this content.

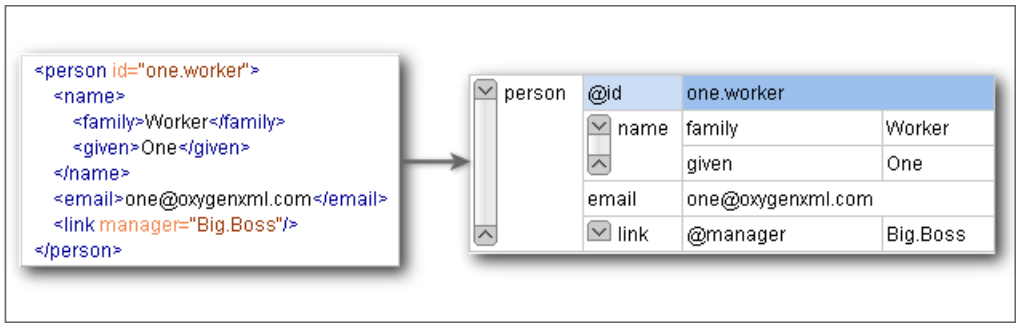


Figure 70: Pasting XML Data into Grid

If the pasted text contains multiple lines of tab-separated values, it can be considered as a matrix of values. By pasting this matrix of values into the **Grid** editor, the result will be a matrix of cells. If the operation is performed inside existing cells, the existing values will be overwritten and new cells will be created when needed.

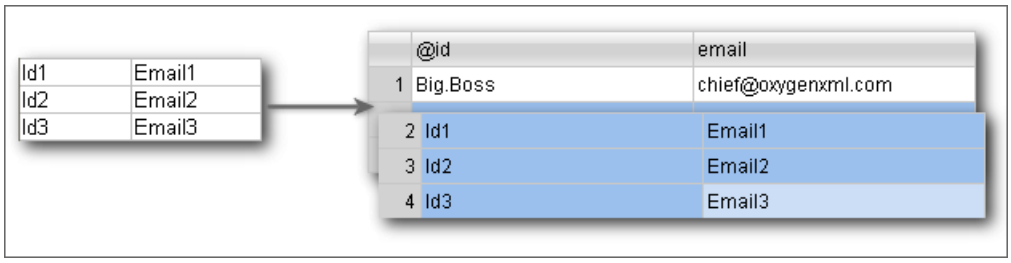


Figure 71: Pasting Tab-Separated Values into Grid

If you need to add copied content to your existing content (rather than overwriting existing cells), you need to first insert new cells by using the **Insert row** or **Insert column** actions from the contextual menu. This is useful, for example, when trying to transfer data from spreadsheet-like editors to the **Grid** editor.

Content Completion Assistant in Grid Mode

If the edited document is associated with a schema (DTD, XML Schema, Relax NG, etc.), the **Grid** editing mode offers a *Content Completion Assistant* for the names and values of elements and attributes. If you choose to insert an element that has required content, the sub-tree of needed elements and attributes are also automatically included.

To display the content completion pop-up menu, simply double-click a cell that contains an element or attribute (or press **Enter** on your keyboard).

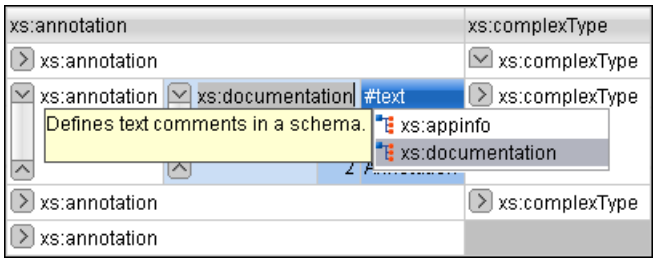


Figure 72: Content Completion in Grid Editing Mode

Exporting XML Content to Excel

For use-cases where you have XML content that needs to be exported to Excel (or any other spreadsheet application) but the content is not already in some sort of table format, **Grid** mode offers you a way to display the content of an XML document as a structured grid of nested tables and you can work with the cells in those tables much like you would with any spreadsheet application. This makes it possible to export content to Excel by copying cells that contain the specific content and then pasting the copied cells in Excel the same as you would when working with any table or spreadsheet.

To export XML content from **Grid** mode to Excel or other spreadsheet applications, follow this procedure:

1. Open the XML document in Oxygen XML Editor plugin and switch to **Grid** mode.
2. Expand the nodes to gain access to the particular nested table that contains the content you want to export.
3. Copy the cells that contain the content you want to export (**Copy** from the contextual menu or **Ctrl+C**).
4. Switch to your spreadsheet application and paste the copied cells.
5. You may need to make some manual adjustments depending on the complexity of the structure in the original XML document.

Note that Oxygen XML Editor plugin also supports the reverse scenario (copying cells from a spreadsheet application and pasting them in **Grid** mode). For more information, see Import from MS Excel Files – Grid Mode Method.

For more information about exchanging data between Oxygen XML Editor plugin and spreadsheet applications, watch our video demonstration:

https://www.youtube.com/embed/8VwsF58zLkU

Related Information:

Import from MS Excel Files - Grid Mode Method on page 1197
Pasting Content from Other Editors into Grid Mode on page 440

Author Editing Mode

The **Author** editing mode in Oxygen XML Editor plugin allows you to visually edit XML documents in a user-friendly interface that is similar to a WYSIWYG word processor. Oxygen XML Editor plugin provides support for visually editing the most commonly used XML vocabularies in **Author** mode, including DITA, DocBook, TEI, and XHTML. Adding text content is as simple as doing so in a standard text editor but the content is rendered similar to how you will see it in the output. Tables, images, and media objects (such as videos) are also rendered comparable to the output.

To switch to this mode, click the **Author** button at the bottom of the editing area.

To see more about some of the features available in the visual **Author** editing mode, watch our video demonstration:

https://www.youtube.com/embed/bnQwJZD58wY

Related Information:

Editing XML Documents in Author Mode on page 441

Author Mode User Roles

There are two main types of users for the **Author** mode: *framework developers* and *content authors*.

Framework Developers

A *framework developer* is a technical person with advanced XML knowledge who defines the *framework* for authoring XML documents in the visual editor. Once the *framework* is created or edited by the developer, it is distributed as a deliverable component ready to plug into the application for the content authors.

The *framework* (document type) configuration defines a type of XML document by specifying all the details needed for editing the content of XML documents in **Author** mode.

The *framework* details that are created and customized by the developer include:

- The CSS stylesheet that drives the visual rendering of the document.
- The rules for associating an XML schema with the document, which is needed for the content completion assistance and validation of the document.
- Transformation scenarios for the document.
- Configuration of *XML Catalogs*.
- Custom actions available as buttons on the toolbar or in menus.

Oxygen XML Editor plugin includes some ready-to-use predefined document types for XML *frameworks*, such as DocBook, DITA, TEI, JATS, and XHTML.

Content Authors

A *content author* does not need to have advanced knowledge about XML markup, operations such as validation of XML documents, or applying XPath expressions to an XML document. The content author just uses the *framework* set up by the developer in the application and starts editing the content of XML documents without editing the XML tags directly.

Styling XML Documents in Author Mode

The structure of an XML document and the required restrictions on its elements and their attributes are defined with an XML schema. This makes it easier to edit XML documents in a visual editor. For more information about schema association, see Associating a Schema to XML Documents on page 579. The **Author** mode renders the content of the XML documents visually, based on a CSS stylesheet associated with the document.

Associating a Stylesheet with an XML Document

The rendering of an XML document in the **Author** mode is driven by a CSS stylesheet that conforms to the version 2.1 of the CSS specification from the W3C consortium. Some CSS 3 features, such as namespaces and custom extensions, of the CSS specification are also supported.

There are several methods for associating a stylesheet (CSS) with an XML document:

1. Insert the `xml-stylesheet` processing instruction with the `type` attribute at the beginning of the XML document. If you do not want to alter your XML documents, you should create a new document type (*framework*).

   CSS example:

   ```
   <?xml-stylesheet type="text/css" href="test.css"?>
   ```

   Note: XHTML documents need a `link` element, with the `href` and `type` attributes in the `head` child element, as specified in the W3C CSS specification. XHTML example:

   ```
   <link href="/style/screen.css" rel="stylesheet" type="text/css"/>
   ```

   Tip: You can also insert the `xml-stylesheet` processing instruction by using the **Associate XSLT/CSS Stylesheet** action that is available on the toolbar or in the **XML** menu.
2. Add a new CSS file to a *framework* (document type). To do so, open the **Preferences** dialog box and go to **Document Type Association**. Edit the appropriate *framework*, open the **Author** tab, then the **CSS** subtab. Press the **New** button to add a new CSS file.

   Note: The predefined *frameworks* are read-only, so you need to **Extend** or **Duplicate** them to configure them as custom *frameworks*.

You can read more about associating a CSS to a document type in Customizing the Main CSS of a Framework on page 1297.

If a document has no CSS association or the referenced stylesheet files cannot be loaded, a default one is used. A warning message is also displayed at the beginning of the document, presenting the reason why the CSS cannot be loaded.

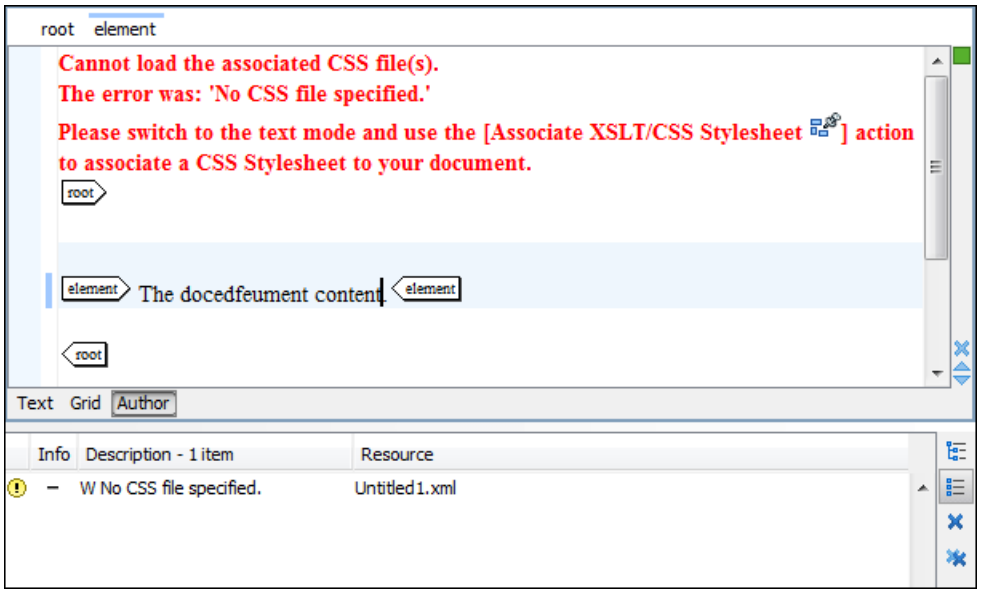


Figure 73: Document with no CSS association default rendering

Selecting and Combining Multiple CSS Styles

Oxygen XML Editor plugin provides a **Styles** drop-down menu on the toolbar that allows you to select one *main (non-alternate) CSS style* and multiple *alternate CSS styles*. This makes it easy to change the look of the document as it appears in **Author** mode and the output without having to continually edit the CSS stylesheets.

Tip: For information about configuring the **Styles** drop-down menu, see Configuring and Managing Multiple CSS Styles on page 1315.

You can select a *main CSS style* that applies to the whole document and then *alternate styles* that are applied as layers to specific parts of the document. For example, in the subsequent figure, a DITA document has the **Century** style selected for the *main CSS* and the *alternate styles* **Full width**, **Show table column specification**, **Hints**, and **Inline actions** are combined for additive styling to specific parts of the document.

The selections from the **Styles** drop-down menu are persistent, meaning that Oxygen XML Editor plugin will remember the selections when subsequent documents are opened.

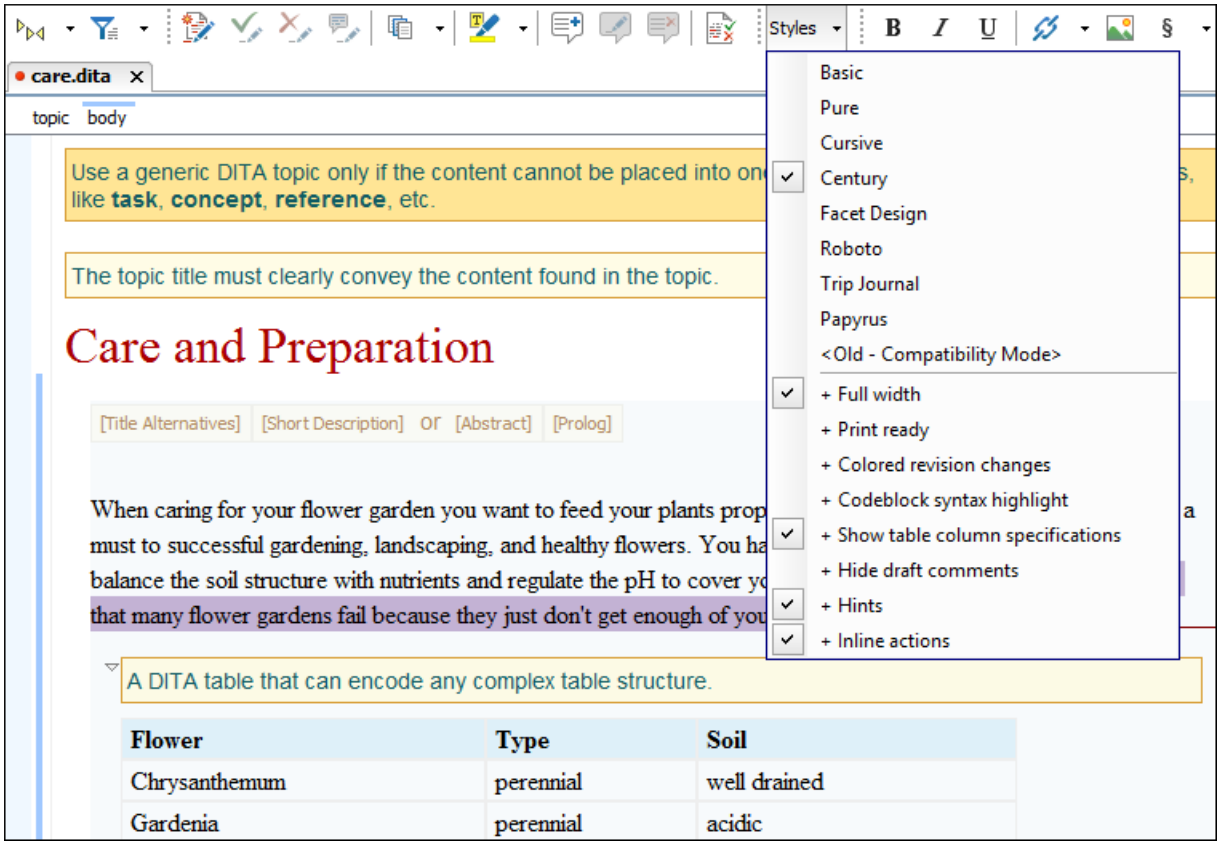


Figure 74: Styles Drop-down Menu in a DITA Document

Related Information:

Associating a Schema to XML Documents on page 579
Configuring and Managing Multiple CSS Styles on page 1315

Navigating the Document Content in Author Mode

Oxygen XML Editor plugin includes some useful features to help you navigate XML documents.

Using the Keyboard

Oxygen XML Editor plugin allows you to quickly navigate through a document using the **Tab** key to move the cursor to the next XML node and **Shift + Tab** to go to the previous one. If you encounter a *space-preserved element* when you navigate through a document and you do not press another key, pressing the **Tab** key will continue the navigation. However, if the cursor is positioned in a *space-preserved element* and you press another key or you position the cursor inside such an element using the mouse, the **Tab** key can be used to arrange the text.

To navigate one word forward or backwards, use **Ctrl + RightArrow (Command + RightArrow on OS X)**, and **Ctrl + LeftArrow (Command + LeftArrow on OS X)**, respectively. Entities and hidden elements are skipped. To position the cursor at the beginning or at the end of the document you can use **Ctrl + Home (Command + Home on OS X)**, and **Ctrl + End (Command + End on OS X)**, respectively.

Navigation Shortcuts

Oxygen XML Editor plugin includes some keyboard shortcuts to help you quickly navigate to a particular modification. They are also available as actions in the **Navigation** menu.

- **Ctrl+Q - Last Edit Location** - Moves the cursor to the last modification in any opened document.
- **Alt+LeftArrow (Command+OpenBracket on OS X) - Back** - Moves the cursor to the previous position.
- **Alt+RightArrow (Command+CloseBracket on OS X) - Forward** - Moves the cursor to the next position.

Navigating with the Outline View

Oxygen XML Editor plugin includes a very useful **Outline** view that displays a hierarchical tag overview of the currently edited XML Document.

You can use this view to quickly navigate through the current document by selecting nodes in the outline tree. It is synchronized with the editor area, so when you make a selection in the **Outline** view, the corresponding nodes are highlighted in the editor area.

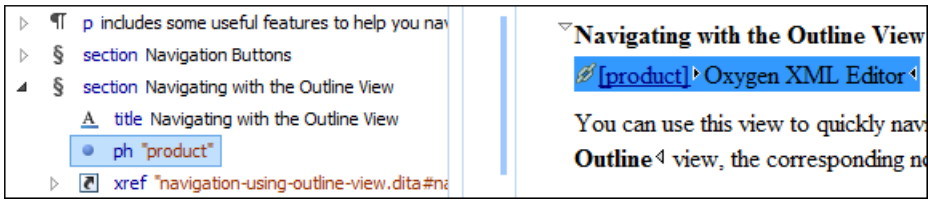


Figure 75: Outline View Navigation in Author Mode

Using the Breadcrumb to Navigate

A *breadcrumb* on the top stripe indicates the path from document root to the current element. It can also be used as a helpful tool to navigate to specific elements throughout the structure of the document.

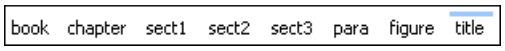


Figure 76: Breadcrumb in Author Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. The last element is also highlighted by a thin light blue bar for easier identification. Clicking an element from the *breadcrumb* selects the entire element and navigates to it in the editor area.

Using the Linking Support

When working on multiple documents that reference each other (references, external entities, XInclude, DITA conref, etc), the **linking support** is useful for navigating between the documents. In the predefined customizations that are bundled with Oxygen XML Editor plugin, links are marked with an icon representing a chain link (). When hovering over the icon, the mouse pointer changes its shape to indicate that the link can be accessed and a tooltip presents the destination location. Click the link to open the referenced resource in the editor or system browser. The same effect can be obtained by pressing the **F3** key when the cursor is in a link element.

Note: Depending on the referenced file type, the target link will either be opened in the Oxygen XML Editor plugin or in the default system application. If the target file does not exist, Oxygen XML Editor plugin prompts you to create it.

Author Mode Views

The content author is supported by a variety of *dockable* helper views that are displayed by default when editing in **Author** mode. These views are automatically synchronized with the current editing context of the editor panel. They present additional information about this context thus helping the author to see quickly the current location in the overall document structure and the available editing options.

There is also a large selection of additional useful views available in the **Window** > **Show View** menu. This section presents some of the most helpful views for editing in **Author** mode.

Navigator View

The **Navigator** view is designed to assist you with organizing and managing related files grouped in the same XML project. The actions available in the contextual menu and on the toolbar associated to this panel allow you to create XML projects and provide shortcuts to various operations for the project documents.

Tip: You can also use the **Project Explorer** view for many of the same purposes as the **Navigator** view.

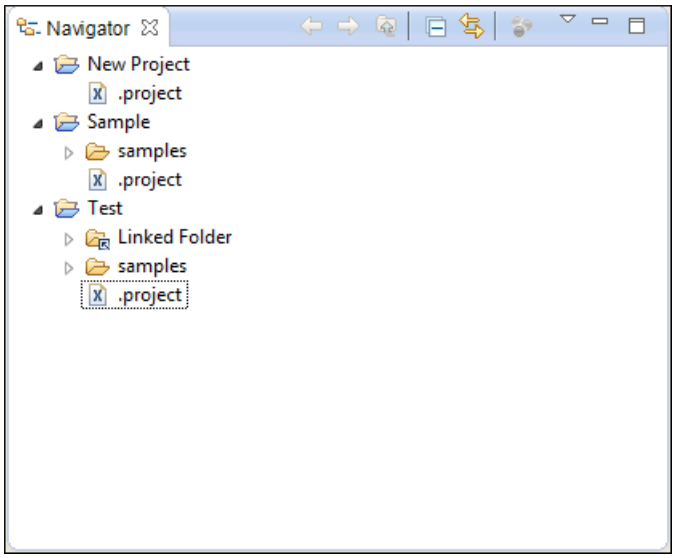


Figure 77: Navigator View

By default, the view is positioned on the left side of the Oxygen XML Editor plugin window, above the **Outline** view. If the view has been closed, it can be reopened at any time from the **Window** > **Show View** menu (the **Project Explorer** view is in the **Other** submenu).

The following actions are grouped in the upper right corner:

Collapse All

Collapses all project tree folders. You can also collapse/expand a project tree folder if you select it and press the **Enter** key or **Left Arrow** to collapse and **Right Arrow** to expand.

Link with Editor

When selected, the project tree highlights the currently edited file, if it is found in the project files.

Note: This button is disabled automatically when you move to the **Debugger** *perspective*.

View Menu

Drop-down menu that contains various settings.

The files are usually organized in an XML project as a collection of folders. There are two types of resources displayed in the **Navigator** view:

- **Physical folders and files** - marked with the operating system-specific icon for folders (usually a yellow icon on Windows and a blue icon on Mac OS X). These folders and files are mirrors of real folders or files that exist in the local file system. They are created or added to the project by using contextual menu actions (such as **New** > **File** and **New** > **Folder**).Also, the contextual menu action **Delete** can be used to remove them from the project and local file system.
- **Shortcut folders and files** - the icons for file and folder shortcuts are displayed with a shortcut symbol. They are created and added by using the actions **New** > **File** > **Advanced** or **New** > **Folder** > **Advanced** from the contextual menu or **File** menu. Also, the contextual menu action **Delete** can be used to remove them from the project (the local file system remains unchanged).

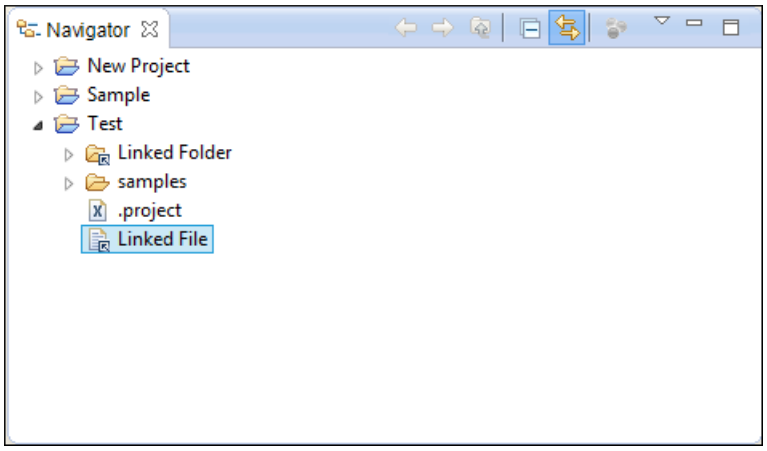


Figure 78: Navigator View with Examples of the Two Types of Resources

Creating New Projects

The following actions are available by selecting **New** from the contextual menu or **File** menu:

New > XML Project

Opens the **New XML Project** dialog box that allows you to create a new project and adds it to the project structure in the **Navigator** view.

New > Sample XML Project

Opens the **New sample XML project** dialog box that allows you to customize sample resources in a new project and adds it to the project structure in the **Navigator** view.

Creating New Project Items

To create new project items, select the desired document type or folder from the **New** menu of the contextual menu, when invoked from the **Navigator** view (or from the **File** menu or **New Drop-down menu**). You can also create a document from a template by selecting **New** > **New from Templates** from the contextual menu (or click the **New** toolbar button).

For more information about creating new files, see New Document Wizard on page 361. For more information about creating new files from templates, see Creating New Documents Based on Templates on page 365.

Managing Physical Folders and Files

You can create physical folders by selecting **New** > **Folder** from the contextual menu.

When adding files to a project, the default target is the project root. To change a target, select a new folder. Files may have multiple instances within the folder system, but cannot appear twice within the same folder.

Removing Files and Folders

To remove one or more files or folders, select them in the project tree and press the **Delete** key, or select the contextual menu action **Delete**.

CAUTION: In most cases this action is irreversible, deleting the file permanently. Under particular circumstances (if you are running a Windows installation of Oxygen XML Editor plugin and the *Recycle Bin* is active) the file is moved to *Recycle Bin*.

Moving Files and Folders

You can move the resources of the project with drag and drop operations on the files and folders of the tree.

You can also use the usual **Copy** and **Paste** actions (or the **Move** action) from the contextual menu to move resources in the **Navigator** view.

Renaming Files and Folders

There are two ways you can rename an item in the **Navigator** view. Select the item in the **Navigator** view and do one of the following:

- Invoke the **Rename** action from the contextual menu.
- Press **F2** and type the new name.

  To finish editing the item name, press **Enter**.

Locating and Opening Files

If a project folder contains a lot of documents, a certain document can be located quickly in the project tree by selecting the folder containing the desired document and typing the first few characters of the document name. The desired document is automatically selected as soon as the typed characters uniquely identify its name in the folder.

The selected document can be opened by pressing the **Enter** key, by double-clicking it, or with one of the **Open** actions from the contextual menu. The files with known document types are opened in the associated editor, while binary files are opened with the associated system application. To open a file with a known document type in an editor other than the default one, use the **Open with** action. Also, dragging and dropping files from the project tree to the editor area results in the files being opened.

Saving the Project

The project file is automatically saved every time the content of the **Navigator** view is saved or modified by actions such as adding or removing files and drag and drop.

Linked Folders

You can create linked folders (shortcuts) by dragging and dropping folders from the Windows Explorer / Mac OS X Finder to the project tree, or by using the contextual menu from the location in the project tree where you wanted it added and selecting **New** > **Folder** > **Advanced**.

To create a file inside a linked folder, use the contextual menu and select **New** > **File**. This opens the **New Document** wizard (you can use the **Advanced** button in the first wizard page to link to a file in the local file system).

Note: The linked folders presented in the **Navigator** view are marked with a special icon.

Validate Files

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be checked to be XML well-formed or validated against a schema (DTD, XML Schema, Relax NG, Schematron or NVDL) with one of the following contextual menu actions found in the **Validate** submenu:

Check Well-Formedness

Checks if the selected file or files are well-formed.

Validate

Validates the selected file or files against their associated schema. EPUB files make an exception, because this action triggers a **Validate and Check for Completeness** operation.

Validate with Schema

Validates the selected file of files against a specified schema.

Configure Validation Scenario(s)

Allows you to configure and run a validation scenario.

Clear Validation Markers

Clears all the error markers from the main editor and **Problems** view.

Applying Transformation Scenarios

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be transformed in one step with one of the following actions available from contextual menu in the **Transform** submenu:

Apply Transformation Scenario(s)

Obtains the output with one of the built-in scenarios.

Configure Transformation Scenario(s)

Opens a dialog box that allows you to configure pre-defined transformation scenarios.

Transform with

Allows you to select a transformation scenario to be applied to the currently selected files.

Refactoring Actions (Available for certain document types (such as XML, XSD, and XSL)

Oxygen XML Editor plugin includes some refactoring operations that help you manage the structure of your documents. The following actions are available from the contextual menu in the **Refactoring** submenu:

Rename resource

Allows you to change the name of a resource.

Move resource

Allows you to change the location on disk of a resource.

XML Refactoring

Opens the **XML Refactoring** tool wizard that presents refactoring operations to assist you with managing the structure of your XML documents.

Other Contextual Menu Actions

Other actions that are available in the contextual menu from the project tree include:

Open

Opens the selected files in the corresponding editor.

Open with submenu

This submenu offers you choices for opening the selected file in various editors.

Refresh

Refreshes the content and the dependencies between the resources in the **Master Files** directory.

XPath in Files

Opens the **XPath/XQuery Builder** view that allows you to compose XPath and XQuery expressions and execute them over the currently edited XML document.

Check Spelling in Files

Allows you to check the spelling of multiple files.

Format and Indent Files

Opens the **Format and Indent Files** dialog box that allows you to configure the format and indent (*pretty-print*) action that will be applied on the selected documents.

Properties

Displays the properties of the current file in a **Properties** dialog box.

Outline View in Author Mode

The **Outline** view in **Author** mode displays a general tag overview of the currently edited XML Document. When you edit a document, the **Outline** view dynamically follows the changes that you make, displaying the node that you modify. This functionality gives you great insight on the location of your modifications in the current

document. It also shows the correct hierarchical dependencies between elements. This makes it easy for you to be aware of the document structure and the way element tags are nested.

Outline View Features

The **Outline** view allows you to:

- Quickly navigate through the document by selecting nodes in the **Outline** tree.
- Insert or delete nodes using contextual menu actions.
- Move elements by dragging them to a new position in the tree structure.
- Highlight elements in the editor area. It is synchronized with the editor area, so when you make a selection in the editor area, the corresponding nodes are highlighted in the **Outline** view, and vice versa.
- View document errors, as they are highlighted in the **Outline** view. A tooltip also provides more information about the nature of the error when you hover over the faulted element.

Outline View Interface

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

It also includes a **View menu** in the top-right corner that presents a variety of options to help you filter the view even further.

Drop and Drop Actions in the Outline View

Entire XML elements can be moved or copied in the edited document using only the mouse in the **Outline** view with drag-and-drop operations. Several drag and drop actions are possible:

- If you drag an XML element in the **Outline** view and drop it on another node, then the dragged element will be moved after the drop target element.
- If you hold the mouse pointer over the drop target for a short time before the drop then the drop target element will be expanded first and the dragged element will be moved inside the drop target element after its opening tag.
- You can also drop an element before or after another element if you hold the mouse pointer towards the upper or lower part of the targeted element. A marker will indicate whether the drop will be performed before or after the target element.
- If you hold down the **(Ctrl (Command on OS X))** key after dragging, a copy operation will be performed instead of a move.

Tip: You can select and drag multiple nodes in the **Outline** view when editing in **Author** mode.

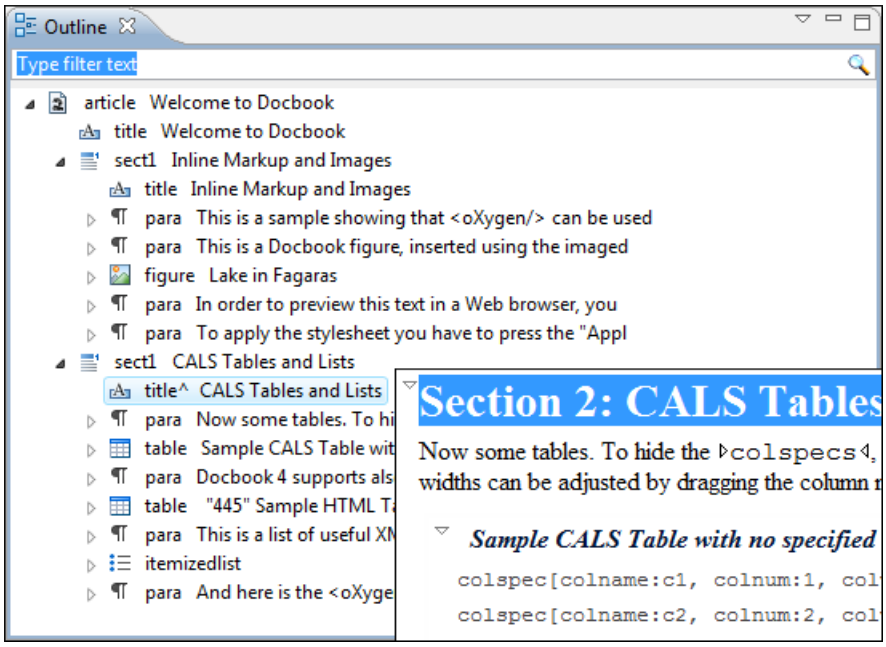


Figure 79: Outline View

Outline View Filters in Author Mode

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

The following actions are available in the **View menu** of the **Outline** view when editing in **Author** mode:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the XML Structured Outline preferences page.

Outline View Contextual Menu Actions in Author Mode

The contextual menu of the **Outline** view in **Author** mode contains the following actions:

Edit Attributes

Displays an in-place attributes editor that allows you to edit the attributes of a selected node.

Edit Profiling Attributes

Allows you to change the profiling attributes defined on all selected elements.

Append Child

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection as a child of the current element.

Insert Before

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection immediately before the current element, as a sibling.

Insert After

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection immediately after the current element, as a sibling.

Cut, Copy, Paste, Delete common editing actions

Executes the typical editing actions on the currently selected elements. The **Cut** and **Copy** operations preserve the styles of the copied content.

Paste before

Inserts a well-formed copied element before the currently selected element.

Paste after

Inserts a well-formed copied element after the currently selected element.

Paste as XML

Pastes copied content that is considered to be valid XML, preserving its XML structure.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Rename Element

Invokes a **Rename** dialog box that allows you to rename the currently selected element, siblings with the same name, or all elements with the same name.

Expand All

Expands the structure tree of the currently selected element.

Collapse All

Collapses all of the structure tree of the currently selected node.

Tip: You can copy, cut or delete multiple nodes in the **Outline** by using the contextual menu after selecting multiple nodes in the tree.

Related Information:

Attributes View in Author Mode on page 202

Attributes View in Author Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use this view to edit or add attribute values. The attributes of an element are editable if any one of the following is true:

- The CSS stylesheet associated with the document does not specify a **false** value for the -oxy-editable property associated with the element.
- The element is entirely included in a deleted *Track Changes* marker.
- The element is part of a content fragment that is referenced in **Author** mode from another document.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.

- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

Note: If the cursor is located inside read-only content, the attribute names and values are faded and you cannot add, edit, or remove values.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

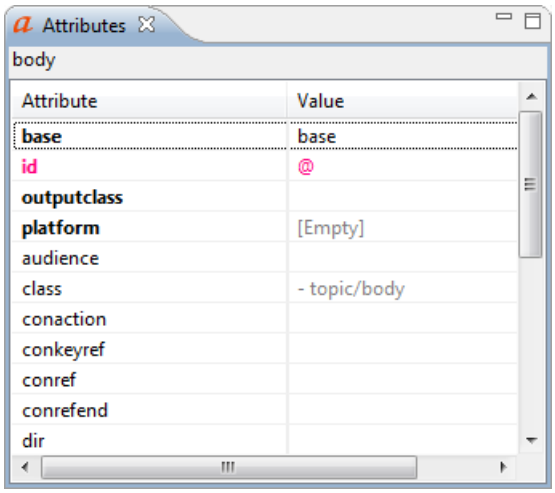


Figure 80: Attributes View

A drop-down list located in the upper part of the view allows you to select the current element or its ancestors.

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Author** mode:

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.

- If the clipboard only contains text, the value of the selected attribute is modified.

In-place Attributes Editor

Oxygen XML Editor plugin includes an in-place attributes editor in **Author** mode. To edit the attributes of an XML element in-place, do one of the following:

- Select an element or place the cursor inside it and then press the **Alt + Enter** keyboard shortcut.
- Double-click any named start tag when the document is edited in one of the following display modes.: **Full Tags with Attributes**, **Full Tags**, **Block Tags**, or **Inline Tags**.

This opens an in-place attributes editor that contains the same content as the **Attributes** view. By default, this editor presents the **Name** and **Value** fields, with the list of all the possible attributes collapsed.

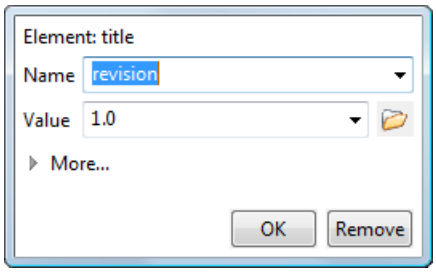


Figure 81: In-place Attributes Editor

Name Combo Box

Use this combo box to select an attribute. The drop-down list displays the list of possible attributes allowed by the schema of the document, as in the **Attributes** view.

Value Combo Box

Use this combo box to add, edit, or select the value of an attribute. If the selected attribute has predefined values in the schema, the drop-down list displays those possible values. You can use the **Browse** button to select a URL for the value of an attribute. You can also press **Ctrl + Space** to open a content completion window that offers a list of possible choices and allows you to select multiple values.

If you click **More** while in the collapsed version, it is expanded to the full version of the in-place attribute editor.

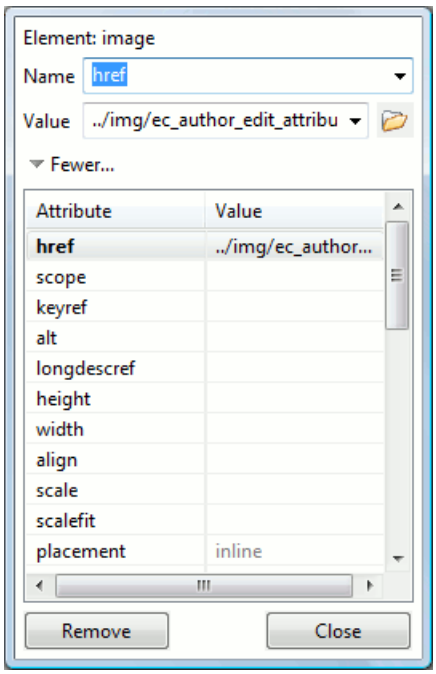


Figure 82: In-place Attributes Editor (Full Version)

The full version includes a table grid, similar to the **Atributes** view, that presents all the attributes for the selected element.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

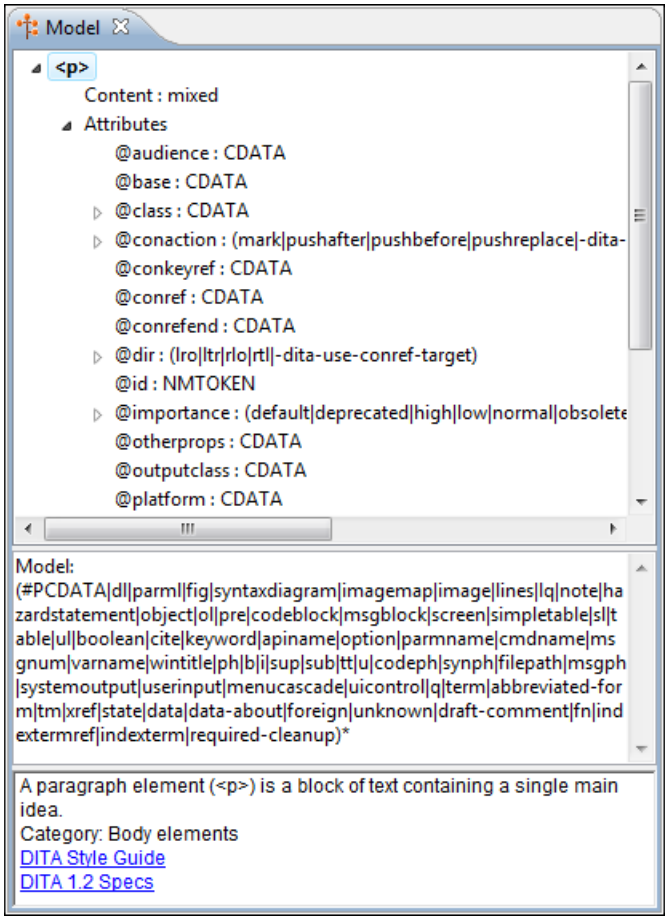


Figure 83: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

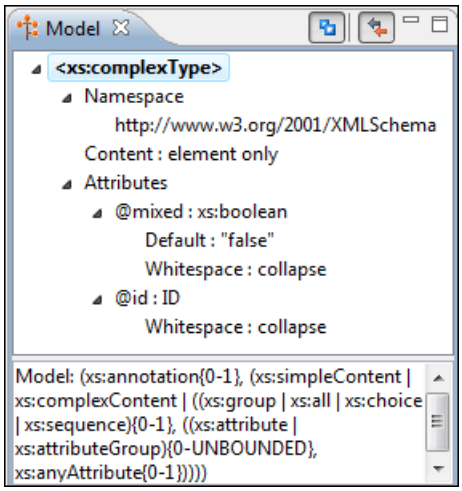


Figure 84: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

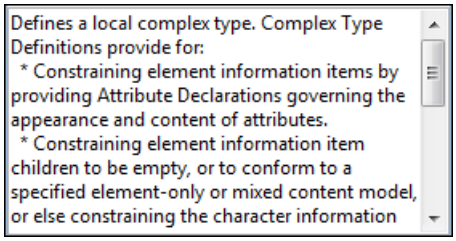


Figure 85: Annotation panel

Elements View in Author Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the view features a combo box that contains the ordered ancestors of the current element. Selecting a new element in this combo box updates the list of the allowed elements. By default, only the elements that are allowed at the current cursor position are listed. However, if the **Show only items allowed at cursor position** option is not selected in the **View** preferences page, two additional tabs (**Before** and **After**) will be displayed at the bottom of the view and they list elements that are allowed before or after the element at the current cursor position.

Double-clicking any of the listed elements inserts that element into the edited document and its position depends on the tab.

- **Cursor** tab - Double-clicking an element inserts it at the current cursor position.
- **Before** tab - Double-clicking an element inserts it before the element at the cursor position.
- **After** tab - Double-clicking an element inserts it after the element at the cursor position.

Pressing **F2** with an element selected will display information about that particular element.

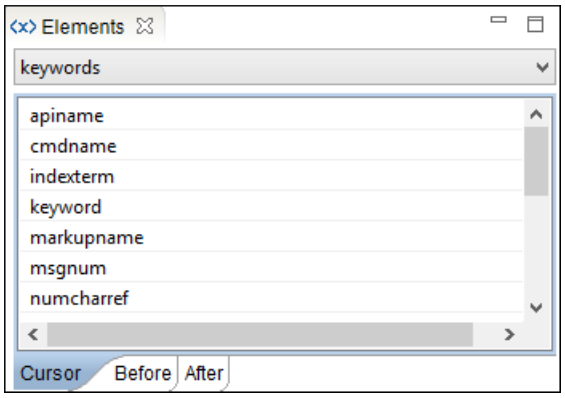


Figure 86: Elements View in Author Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

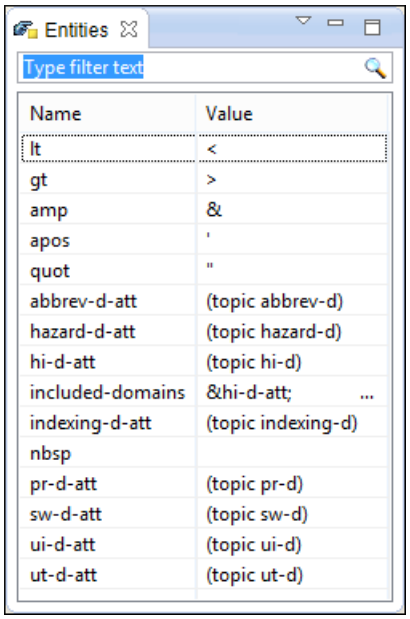


Figure 87: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Results View

The **Results** view displays the messages generated as a result of user actions such as validations, transformations, search operations, and others. Each message is a link to the location related to the event that triggered the message. Double-clicking a message opens the file containing the location and positions the cursor at the location offset. The **Results** view is automatically opened when certain actions generate result messages.

The actions that contribute messages to this view include:

- **Validation** actions
- **Transformation** actions
- **Check Spelling in Files** action
-
-
- **Search References** action
- SQL results

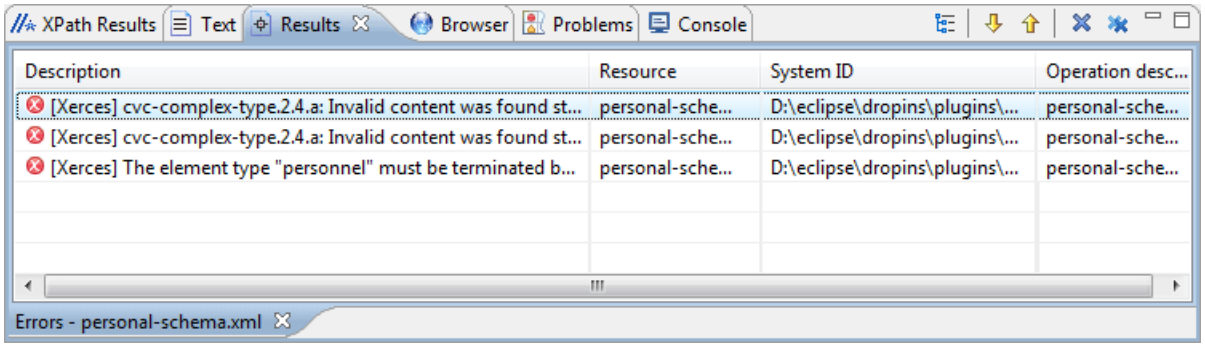


Figure 88: Results View

Results View Toolbar Actions

The view includes a toolbar with the following actions:

Grouping Mode toggle options

You can choose to group the result messages in a **Hierarchical** or **Flat** arrangement.

Next

Navigates to the message below the current selection.

Previous

Navigates to the message above the current selection.

Remove selected

Removes the current selection from the view. This can be helpful if you want to reduce the number of messages or remove those that have already been addressed or not relevant to your task.

Remove all

Removes all messages from the view.

Results View Contextual Menu Actions

The following actions are available when the contextual menu is invoked in this view:

Remove

Removes selected messages from the view.

Remove all

Removes all messages from the view.

Copy

Copies information associated with the selected messages. For example:

- The file path of the document that triggered the output message.
- Error severity (error, warning, info message, etc.)
- Name of validating processor.
- The line and column in the file that triggered the message.

Copy Description

Copies the description values for all selected items.

Show message

Opens a dialog box that displays the details of the message.

Save Results

Saves the complete list of messages in a file in text format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as XML

Saves the complete list of messages in a file in XML format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as HTML

Saves the complete list of messages in a file in HTML format. For each message, the included details are the same as the ones for the **Copy** action.

Expand All

Available when **Hierarchical** mode is selected. Expands all the nodes of the tree, which is useful when the messages are presented in a hierarchical mode.

Collapse All

Available when **Hierarchical** mode is selected. Collapses all the nodes of the tree, which is useful when the messages are presented in a hierarchical mode.

CSS Inspector View

The purpose of the **CSS Inspector** view is to display information about the styles applied to the currently selected element. You can use this view to examine the structure and layout of the CSS rules that match the element. The matching rules displayed in this view include a link to the line in the CSS file that defines the styles. With this tool you can see how the CSS rules were applied and the properties defined, and use the link to open the associated CSS for editing purposes.

Figure 89: CSS Inspector View

Figure 90: CSS Inspector View

Displaying the CSS Inspector View

You can open this view by selecting the **Inspect Styles** action from the contextual menu in **Author** mode, or selecting the **CSS Inspector** view in the **Window** > **Show View** menu. This action makes the view visible and also initializes it for the currently selected element.

Displaying Rules

All rules that apply to the current element are displayed in sections, which are listed in order of importance (from most specific to least specific). Rules that are overridden by other rules are crossed out. If you click the link in the top-right corner of a rule Oxygen XML Editor plugin opens the associated CSS file at the line number where the properties of the rule are defined.

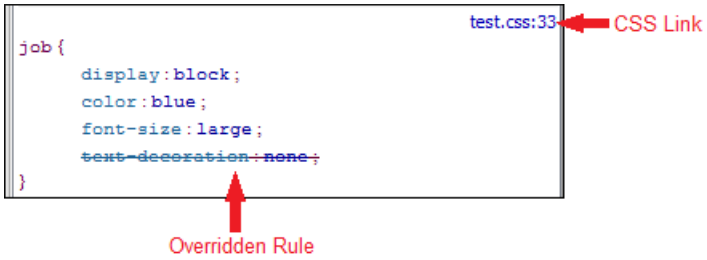


Figure 91: CSS Inspector View - Displaying Rules

The **CSS Inspector** view contains five tabs:

- **Element** - Displays the CSS rules matching the currently selected element in the **Author** page (ordered from most-specific to least-specific).
- **:before** - Displays the rules matching the `:before` pseudo-element.
- **:after** - Displays the rules matching the `:after` pseudo-element.
- **Computed** - Displays all the styling properties that apply to the current element, as a result of all the CSS rules matching the element.

- **Path** - Displays the path for the current element, and its attributes, allowing you to quickly see the attributes on all parent elements, and allows you to copy fragments from this view and paste it into the associated CSS to easily create new rules.

The information displayed in each of the five tabs is updated when you click other elements in the **Author** editing view. The first three tabs include the link to the associated CSS source, while the other two tabs simply display the style properties that match the current element.

Each of the tabbed panes include a contextual menu with the following actions:

- **Copy** - copies the current selection
- **Select all** - selects all information listed in the pane

Also, a **Show empty rules** action is available from a drop-down menu in the toolbar of the view. This action forces the view to show all the matching rules, even if they do not declare any CSS properties. By default, the empty rules are not displayed.

Displaying the Markup

You can control the amount of markup that is displayed in the **Author** mode with various levels of tag modes for both *block* and *in-line* elements.

The following dedicated tag modes are available from the **Tags Display Mode** drop-down menu (available on the toolbar):

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline* elements.

Full Tags

Displays full tag names without attributes for both *block* and *inline* elements.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Opens the **Author** preferences page where you can configure options in regards to *tags*, such as the default **Tags Display Mode**, **Tags Background Color**, **Tags Foreground Color**, **Tags Font**, and whether or not Oxygen XML Editor plugin will use a **Compact Tag Layout** for displaying the tags (this option tries to group consecutive block tags on the same line).

Note: The associated CSS information is used to determine whether a tag should be considered *inline* or *block*. If the current document does not have an associated CSS stylesheet, then the **Full Tags** mode will be used.

Displaying Referenced Content

The references to entities, XInclude, DITA conrefs, and constructs in other vocabularies with displayable referenced content are expanded by default in **Author** mode and the referenced content is displayed. You can control this behavior from the **Author** preferences page. The referenced resources are loaded and displayed inside the element or entity that references them, but the displayed content cannot be modified directly in current document.

When the referenced resource cannot be resolved, an error will be presented inside the element that refers them instead of the content.

If you want to make modifications to the referenced content, you must open the source where the referenced resource resides. The referenced resource can be opened quickly by clicking the link (marked with the icon) that is displayed before the referenced content or by using the **Edit Reference** action from the contextual menu (in this case, the cursor is placed at the precise location where the action was invoked). The referenced resource is resolved through the *XML Catalog* set in the **XML Catalog** preferences page.

The referenced content is refreshed as follows:

- Automatically, when it is modified and saved from Oxygen XML Editor plugin.
- On demand, by using the **Refresh references** action. This is useful when the referenced content is modified outside the Oxygen XML Editor plugin scope.

Related Information:

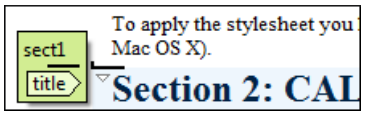
Configuring a References Resolver on page 1286

Visual Hints for the Cursor Position

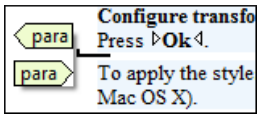
When the cursor is positioned inside a new context, a tooltip will be shown for a couple of seconds displaying the position of the cursor relative to the context of the current element.

Here are some of the common situations that can be encountered:

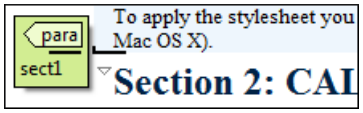
- **Before first *block*** - The cursor is positioned before the first *block* child of the current node.



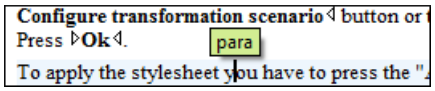
- **Between two *block elements*** - The cursor is positioned between two *block elements*.



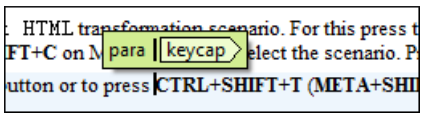
- **After last *block*** - The cursor is positioned after the last *block element* child of the current node.



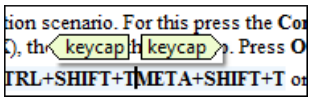
- **Inside a node** - The cursor is positioned inside a node.



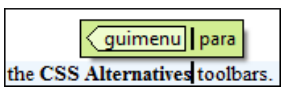
- **Before an *inline element*** - The cursor is positioned inside an element, before a child *inline element*.



- **Between two inline elements** - The cursor is positioned between two *inline elements*.



- **After an inline element** - The cursor is positioned inside an element, after an child *inline element*.



The nodes in these cases are displayed in the tooltip window using the element names.

To deactivate this feature, open the **Preferences** dialog box , go to **Author** > **Cursor Navigation**, and deselect the **Show cursor position tooltip** option. Even if this option is deselected, you can still display the position tooltip by pressing **Shift+F2**.

Note: The position information tooltip is not displayed if **Full Tags with Attributes** or **Full Tags** is selected in the **Tags display mode** drop-down menu.

Location Tooltip

When editing XML documents in a visual environment, you might find it difficult to position the cursor between certain tags that do not have a visual representation. To counterbalance this, Oxygen XML Editor plugin displays a transparent preview of the position information, called the **Location Tooltip**:

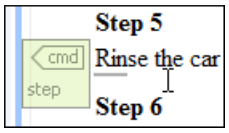


Figure 92: Location Tooltip

Oxygen XML Editor plugin displays a **Location Tooltip** when the following conditions are met:

- You are editing the document in one of the following tags display modes: **Inline Tags**, **Partial Tags**, **No Tags**.
- The mouse pointer is moved between *block elements*.

To activate or deactivate this feature, use the **Show location tooltip on mouse move** option in the **Cursor Navigation** preferences page.

Presenting Validation Errors in Author Mode

Oxygen XML Editor plugin can be configured to automatically validate documents while editing in the **Author** mode, and actions are also available to manually validate documents on-request.

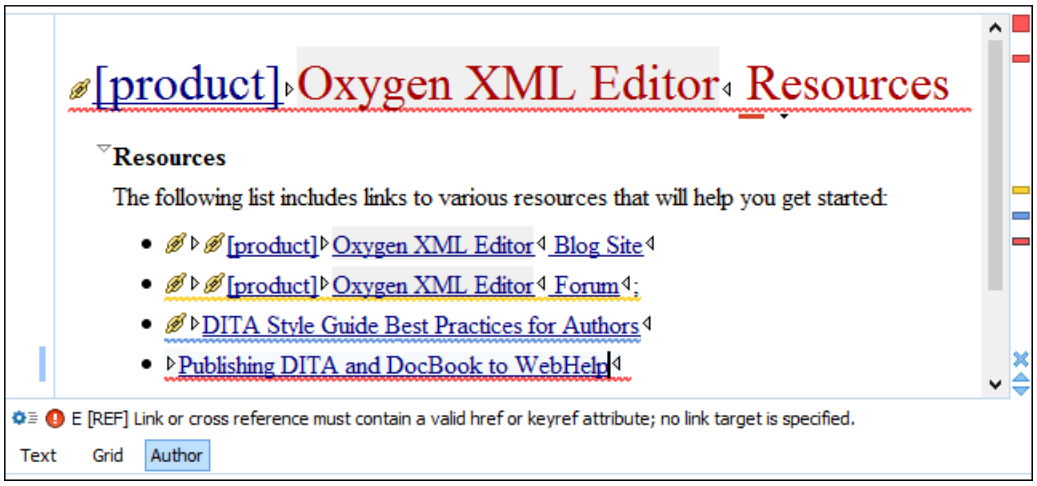


Figure 93: Presenting Validation Errors in Author Mode

Validation Marker Locations

In **Author** mode, validation issues are marked in the following locations:

- In the main editing pane, with the issue underlined in a color according to the type of issue.
- In the right-side vertical stripe, with a marker that is colored according to the type of issue.
- For attributes with detected issues, in the **Attributes** view, with the attribute and its value colored according to the type of issue.

Validation Marker Colors

The colors for each type of issue are as follows:

- **Validation Errors** [Red] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in red.
- **Validation Warnings** [Yellow] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in yellow.
- **Validation Info** [Blue] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in blue.

Validation Markers in the Right-Side Stripe

Also, the stripe on the right side of the editor panel is designed to display the issues found during the validation process and to help you locate them in the document. The stripe contains the following:

Upper Part of the Stripe

A success indicator square will turn green if the validation is successful or only info messages are found, red if validation errors are found, or yellow if only validation warnings are found. More details about the issues are displayed in a tool tip when you hover over indicator square. If there are numerous problems, only the first three are presented in the tool tip.

Middle Part of the Stripe

Errors are depicted with red markers, warnings with yellow markers, and info message with blue markers. If you want to limit the number of markers that are displayed, open the **Preferences** dialog box , go to **Editor** > **Document checking**, and specify the desired limit in the **Maximum number of validation highlights** option.

Clicking a marker will highlight the corresponding text area in the editor. The validation message is also displayed both in a tool tip (when hovering over the marker) and in the message area on the bottom of the application.

Bottom Part of the Stripe

Two navigation arrows ( ) allow you to jump to the next or previous issue. The same actions can be triggered from **Document** > **Automatic validation** > **Next error** (**Ctrl + Period (Command + Period on OS X)**) and **Document** > **Automatic validation** > **Previous error** (**Ctrl + Comma (Command + Comma on OS X)**).

Hovering Over Validation Issues

Hovering over a validation issue presents a tooltip message with more details about the problem and possible *quick fixes* (if available for that issue). Also, when hovering over an issue, pressing **F2** will change the focus to the tooltip where you can use **Tab** and **Shift + Tab** to navigate between quick fixes and **Space** to trigger them.

Details About Validation Issues

- Information about the issue is also displayed in the message area on the bottom of the editor panel (clicking the **Document checking options** button opens the **Document Checking** preferences page where you can configure some validation options.
- Status messages from every validation action are logged in the **Console** view (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).
- If you want to see all the validation messages grouped in the **Results** view, you should use the **Validate** action from the toolbar or **XML** menu. This action also collects the validation messages and displays them in the **Problems** view if the validated file is in the current workspace or in a custom **Errors** view if the validated file is outside the workspace.

Related Information:

Validating XML Documents Against a Schema on page 561

Presenting Schematron Validation Issues

Whitespace Handling in Author Mode

When you edit a document in **Author** mode, Oxygen XML Editor plugin must serialize the resulting document as XML. Oxygen XML Editor plugin serializes the document when you save it or switch to another editing mode. When the document is serialized, Oxygen XML Editor plugin formats and indents the XML document according to the current format and indent settings.

Minimizing Whitespace Differences Between Versions

When serializing a document to XML, **Author** mode will only format and indent those elements of the document that have been edited. Any element that has not been edited will be serialized exactly as it was loaded from disk. This is useful when your content is managed in a version control systems, as it avoids introducing insignificant whitespace differences between version, which in turn makes diff output easier to read.

Entering Whitespace in Author Mode

Oxygen XML Editor plugin controls the entry of whitespace characters in **Author** mode according the XML whitespace rules, which means it will not let you insert insignificant whitespace. This means that it will not let you insert extra line-breaks or spaces inside a typical paragraph element, for instance. (Any such whitespace would be normalized away when the document was serialized to XML, so Oxygen XML Editor plugin is saving you from any surprises when this happens.)

Of course, you will legitimately want to enter additional spaces and returns in some cases, such as code samples. Oxygen XML Editor plugin will allow this in elements that are configured as preserve space elements according to the XML whitespace rules. For all of its predefined document types, Oxygen XML Editor plugin is correctly configured to recognize preserve space elements and to allow you to enter additional spaces in them.

If you are using a predefined document type and you are unable to enter additional whitespace, make sure that you are using an element from that document type that is intended to be a preserve-space element.

If you are using a custom document type, make sure that it is configured correctly so that Oxygen XML Editor plugin recognizes that the current element is a preserve-space element.

Serialization Options for Author Mode

The **Author** preferences page (open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author**) includes a **Serialization** section that contains some options that control how the formatting and indenting is applied when a document is saved in **Author** mode or when switching from **Author** to **Text** mode. It also includes a **Compatibility with other tools** option that controls how line breaks are handled when a document is serialized to help obtain better compatibility with other applications.

Editing Content in Author Mode

The **Author** mode includes a large variety of user-friendly authoring features to help you work with XML content, including numerous toolbar, menu, and shortcut actions and some specialized content editing features.

Undo/Redo Actions

The typical undo and redo actions are available with shortcuts or in the **Edit** menu:

Undo (Ctrl + Z (Command + Z on OS X))

Reverses a maximum of 200 editing actions to return to the preceding state.

Note: Complex operations such as **Replace All** or **Indent selection** count as single undo events.

Redo (Ctrl + Y (Command + Shift + Z on OS X, Ctrl + Shift + Z on Linux/Unix))

Recreates a maximum of 100 editing actions that were undone by the **Undo** function.

Copy and Paste Actions

The typical copying and pasting actions are available with shortcuts or in the contextual menu (or the **Edit** menu):

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Select All (Ctrl + A (Command + A on OS X))

Selects the entire content of the current document.

Entering Text in Elements

By default, you can only enter text in elements that accept text content. If the element is declared as *empty* or *element only* in the associated schema, you are not allowed to insert text in it. Instead, a warning message is displayed.

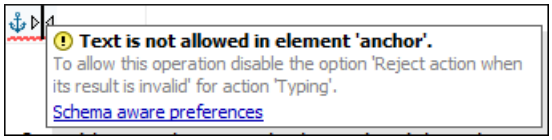


Figure 94: Editing in empty element warning

To allow text to be inserted in these instances, go to the **Schema-Aware** preferences page and deselect the **Reject action when its result is invalid** option in the **Typing** actions section.

Editing Text Content Without Modifying the XML Markup

You can use the options in the **Tags Display Mode** drop-down menu (available on the toolbar) to control how tags are displayed in **Author** mode. This can help you to clearly see where the current cursor position is within the tag structure so that you can avoid making unintended modifications to the XML markup. You can also switch to the **Grid** editing mode to modify text content without affecting the XML tags.

Related Information:

Editing XML Markup in Author Mode on page 449
Drag and Drop in Author Mode on page 457
Smart Paste Mechanism on page 457
Content Completion Assistant in Author Mode on page 459
Contextual Menu Actions in Author Mode on page 552

Editing XML Markup in Author Mode

Oxygen XML Editor plugin includes some useful actions that allow you to easily edit XML markup in **Author** mode. Most of these actions are available in the contextual menu and some of them have simple keyboard shortcuts.

Selecting XML Markup in Author Mode

Selecting XML tags in Oxygen XML Editor plugin is very simple with several methods for selecting entire elements:

- **Breadcrumb** - Click the element (XML tag) on the breadcrumb displayed at the top of the editing window.
- **Outline View** - Click the element name in the **Outline** view.
- **Full Tags Mode** - While editing in **Full Tags** mode, click the start or end tag of the element in the editor.
- **Mouse Selection** - While editing in **Full Tags** mode, click before the start tag of the element, drag the selection, and release the mouse button after the end tag.
- **Shift + Arrow Keys** - While editing in **Full Tags** mode, place the cursor before the start tag of the element, press and hold **Shift**, and use the arrow keys to make the selection (including the end tag).

Note: If the selection does not include the entire element (for example you do not include the end tag of the element), Oxygen XML Editor plugin will automatically close the appropriate tags when pasting the copied selection. This ensures that the pasted content will always result in well-formed XML.

Using the Breadcrumb in Author Mode

A *breadcrumb* on the top stripe indicates the path from document root to the current element. It can also be used as a helpful tool to insert and edit specific elements in the document structure.

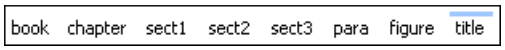


Figure 95: Breadcrumb in Author Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. The last element is also highlighted by a thin light blue bar for easier identification. Clicking an element from the *breadcrumb* selects the entire element in the editor area and each element provides a contextual menu with access to the following actions:

Edit Attributes

Opens the in-place attributes editor that allows you to easily edit the attributes of an element.

Edit Profiling Attributes

Allows you to select the profiling attributes that apply to a certain element.

Append child

Opens a content completion list that allows you to select an element to be inserted as a child of the selected element.

Insert before

Opens a content completion list that allows you to select an element to be inserted (as a sibling) before the selected element.

Insert after

Opens a content completion list that allows you to select an element to be inserted (as a sibling) after the selected element.

Cut

Removes the selected element and copies it to the clipboard, while preserving the styles of the content.

Copy

Copies the selected element to the clipboard, while preserving the styles of the copied content.

Paste

Pastes a well-formed element from the clipboard at currently selected position in the breadcrumb.

Paste before

Insert a well-formed element (from the clipboard) before the currently selected element.

Paste after

Insert a well-formed element (from the clipboard) after the currently selected element.

Paste as XML

Inserts clipboard content that is considered to be well-formed XML content, preserving its XML structure.

Delete

Deletes the currently selected element.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not commented, or removes the comment if it is commented.

Rename Element

Opens the **Rename** dialog box that allows you to rename the currently selected element and other elements with the same name.

Tip: The tag names displayed in the *breadcrumb* can be customized with an **Author** mode extension class that implements the *AuthorBreadCrumbCustomizer* API. See the Oxygen SDK for more details.

Move Nodes

You can move XML nodes in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Move Up (Alt + UpArrow)

Moves the current node or selected nodes in front of the previous node.

Move Down (Alt + DownArrow)

Moves the current node or selected nodes after the subsequent node.

Tip: The easiest way to move nodes is to use the **Alt + UpArrow** and **Alt + DownArrow** shortcut keys.

Promote/Demote List Item Nodes

You can easily promote or demote selected list item nodes within ordered lists or unordered lists by using the following keyboard shortcuts:

Promote (Shift + Tab)

Promotes an entirely selected list item node to be a sibling of its parent node (the list item is moved to the left). It also works for selections of multiple list item nodes as long as all the selected nodes are siblings (on the same hierarchical level).

Demote (Tab)

Demotes an entirely selected list item node (the list item is moved to the right). It also works for selections of multiple list item nodes as long as all the selected nodes are siblings (on the same hierarchical level).

Join or Split Elements

You can join or split elements in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Join Elements

Joins two adjacent *block elements* that have the same name. The action is available only when the cursor position is between the two adjacent *block elements*. Also, joining two *block elements* can be done by pressing the **Delete** or **Backspace** keys and the cursor is positioned between the boundaries of these two elements.

Tip: Specifically, the **Delete** or **Backspace** keys can be used to join *block elements* in the following situations:

- The cursor is located before the end position of the first element and **(Delete)** key is pressed.
- The cursor is located after the end position of the first element and **(Backspace)** key is pressed.
- The cursor is located before the start position of the second element and **(Delete)** key is pressed.
- The cursor is located after the start position of the second element and **(Backspace)** key is pressed.

If the element has no sibling or the sibling element has a different name, an **Unwrap** operation will be performed.

Split Element

Splits the content of the closest element that contains the position of the cursor. Thus, if the cursor is positioned at the beginning or at the end of the element, the newly created sibling will be empty.

Rename Elements

You can rename elements by using the following action in the **Refactoring** submenu of the contextual menu:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Surround Content with Tags (Wrap)

You can surround a selection of content with tags (*wrap* the content) by using the following action in the **Refactoring** submenu of the contextual menu:

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag to enclose a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Unwrap the Content of Elements

You can unwrap the content of an element by using the following action in the **Refactoring** submenu of the contextual menu:

Delete Element Tags

Deletes the tags of the closest element that contains the position of the cursor. This operation is also executed if the start or end tags of an element are deleted by pressing the **Delete** or **Backspace** keys.

Tip: Specifically, the **Delete** or **Backspace** keys can be used to unwrap the content of an element in the following situations:

- The cursor is located before the start position of the element and **(Delete)** key is pressed.
- The cursor is located after the start position of the element and **(Backspace)** key is pressed.
- The cursor is located before the end position of the element and **(Delete)** key is pressed.
- The cursor is located after the end position of the element and **(Backspace)** key is pressed.

If the element has no sibling or the sibling element has a different name, an **Unwrap** operation will be performed.

Remove Markup from Blocks of Content

You can remove the markup from the current element by highlighting the appropriate block of content and using the following action in the **Refactoring** submenu of the contextual menu:

Remove All Markup

Removes all the XML markup inside the selected block of content and keeps only the text content.

Tip: You can use the **(Delete)** or **(Backspace)** keys to remove markup, in which case the elements in the selected block will be unwrapped or joined with their sibling, or if the current element is empty, the element tags will be deleted.

Remove Text from Selected Markup

You can remove the text from elements by highlighting the appropriate block of content and using the following action in the **Refactoring** submenu of the contextual menu:

Remove Text

Removes the text content of the selected block of content and keeps the markup in tact with empty elements.

Other Refactoring Actions

You can also manage the structure of the markup by using the other specific XML refactoring actions that are available in the **Refactoring** submenu of the contextual menu:

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Related Information:

Editing Content in Author Mode on page 448
Displaying the Markup on page 211
Refactoring XML Documents on page 596
Selecting Content in Author Mode on page 458
Content Completion Assistant in Author Mode on page 459
Contextual Menu Actions in Author Mode on page 552

Editing Attributes in Author Mode

You can easily edit attributes in **Author** mode by using the **Attributes View** and Oxygen XML Editor plugin also allows you to edit attribute and element values in-place, directly in the **Author** mode, using an in-place attribute editor.

In-place Attributes Editor

Oxygen XML Editor plugin includes an in-place attributes editor in **Author** mode. To edit the attributes of an XML element in-place, do one of the following:

- Select an element or place the cursor inside it and then press the **Alt + Enter** keyboard shortcut.
- Double-click any named start tag when the document is edited in one of the following display modes.: **Full Tags with Attributes**, **Full Tags**, **Block Tags**, or **Inline Tags**.

This opens an in-place attributes editor that contains the same content as the **Attributes** view. By default, this editor presents the **Name** and **Value** fields, with the list of all the possible attributes collapsed.

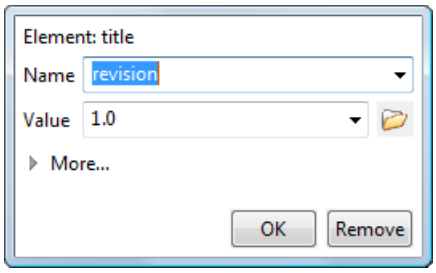


Figure 96: In-place Attributes Editor

Name Combo Box

Use this combo box to select an attribute. The drop-down list displays the list of possible attributes allowed by the schema of the document, as in the **Attributes** view.

Value Combo Box

Use this combo box to add, edit, or select the value of an attribute. If the selected attribute has predefined values in the schema, the drop-down list displays those possible values. You can use the **Browse** button to select a URL for the value of an attribute. You can also press **Ctrl + Space** to open a content completion window that offers a list of possible choices and allows you to select multiple values.

If you click **More** while in the collapsed version, it is expanded to the full version of the in-place attribute editor.

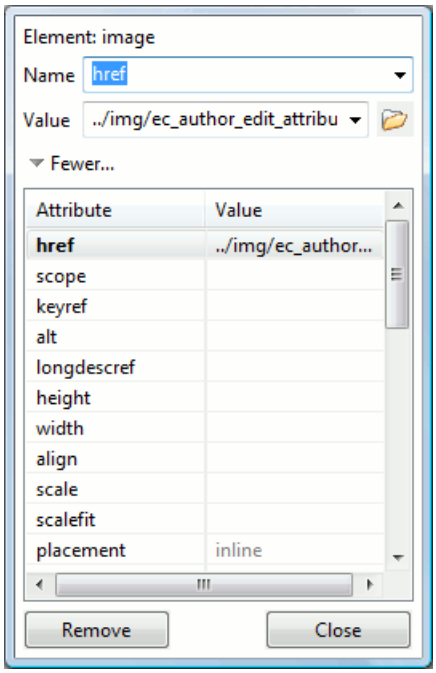


Figure 97: In-place Attributes Editor (Full Version)

The full version includes a table grid, similar to the **Atributes** view, that presents all the attributes for the selected element.

Note: If the cursor is located inside read-only content, the attribute names and values are faded and you cannot add, edit, or remove values.

Related Information:
Attributes View in Author Mode on page 202

Folding XML Elements in Author Mode

When working with a large document, the *folding* support in Oxygen XML Editor plugin can be used to collapse some element content leaving only the parts that you need to edit in focus. Expanding and collapsing works on individual elements. Expanding an element leaves the child elements unchanged.

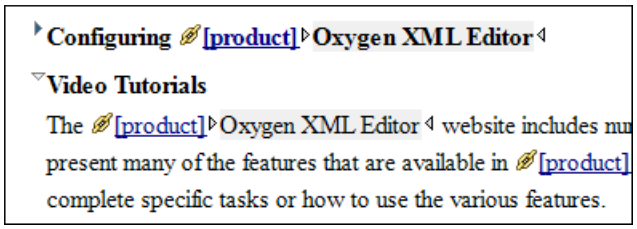


Figure 98: Folding of XML Elements in Author Mode

Folding Actions in Author Mode

Foldable elements are marked with a small triangle (/) on the left side of the editor panel. If you hover over that arrow, the entire content of the element is highlighted by a dotted border for quick identification of the *foldable* area. To toggle the fold, simply click the icon. Also, the following actions are available in the **Folding** sub-menu of the contextual menu:

Toggle Fold (or you can simply click on the / arrow)
Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))
Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))
Folds the child elements that are indented one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))
Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))
Unfolds all elements in the current document.

For more information about the *folding* support in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/eR9HfN_peAE

Related Information:
Folding Elements: -oxy-foldable on page 1338

Drag and Drop in Author Mode

The Oxygen XML Editor plugin **Author** mode includes support for dragging and dropping content in XML documents.

When editing content in **Author** mode, entire sections or chunks of data can be moved or copied by using the drag and drop feature. The following situations can be encountered:

- When both of the drag and drop sources are from the **Author** mode editor, a well-formed XML fragment is transferred. The section is balanced before dropping it by adding matching tags when needed.
- When the drag source is from the **Author** mode editor but the drop target is a text-based editor, only the text inside the selection is transferred as it is.

- The text dropped from another text editor or another application into the **Author** mode editor is inserted without changes.

Related Information:
Smart Paste Mechanism on page 457

Smart Paste Mechanism

The **Author** editing mode includes a *Smart Paste* feature that preserves certain style and structure information when copying content and pasting it into document types that support the feature. You can copy content from various sources, including web pages, external applications (such as Office-type applications), or other document types within Oxygen XML Editor plugin, and then paste it into DITA, TEI, DocBook, JATS, and XHTML documents. Oxygen XML Editor plugin preserves the original text styling (such as bold, italics, underline) and formatting (such as lists, tables, paragraphs) and considers various pasting solutions to keep the resulting document valid.

The styles and general layout of the pasted content are converted to the equivalent XML markup for the target document type while preserving certain style and structure information. For example, if you copy content that includes multiple paragraphs and then paste it in **Author** mode, the multiple paragraph structure is preserved. If you paste the content in a location where the resulting XML would not be valid, Oxygen XML Editor plugin will attempt to place it in a valid location, and may prompt you with one or more choices for where to place it.

Tip: When pasting text fragments formatted with the *Courier New* font, the *Smart Paste* mechanism will wrap it in an inline code element (for example, in DITA it would be wrapped in a `codeph` element).

Smart Paste Options

By default, the *Smart Paste* feature is enabled in Oxygen XML Editor plugin. There are several options in the **Schema Aware** preferences page that control the *Smart Paste* mechanism:

- **Smart paste and drag and drop** - This option determines whether or not Oxygen XML Editor plugin will try to find an appropriate insert position when the current location is not valid for the pasted content. This option is selected by default.
- **Reject action when its result is invalid** - If you select this option, Oxygen XML Editor plugin will not let you paste content into a position where it would be invalid. This option is deselected by default.
- **Convert external content on paste** - This option determines whether or not Oxygen XML Editor plugin will convert the styling and formatting of copied content from external sources when pasting it into a document type that supports the feature. This option is selected by default.
- **Convert even when pasting inside space-preserve elements** - If you select this option, the *Smart Paste* feature will also work when pasting external content into a *space-preserve* element (such as a `codeblock`). This option is deselected by default.

Smart Paste Supported Document Types

The *Smart Paste* feature is supported for the following document types (*frameworks*):

- DITA
- DocBook 4
- DocBook 5
- TEI
- XHTML
- JATS

For more information about the *Smart Paste* support, watch our video demonstration:

https://www.youtube.com/embed/bpiXZQwzBfA

Related Information:
Customizing Smart Paste Support on page 1271

Selecting Content in Author Mode

Oxygen XML Editor plugin includes a variety of keyboard shortcuts that allow you to easily select content in **Author** mode.

Selection Shortcuts in Author Mode

Ctrl + A (Meta + A on Mac OS X)

Selects all content in the document.

Shift + Left/Right Arrow Keys

Begins a continuous selection at the cursor position and extends it one character at a time in the direction that you press the arrow keys.

Shift + Up/Down Arrow Keys

Begins a continuous selection at the cursor position and extends it one line at a time in the direction that you press the arrow keys.

Ctrl + Shift + Left/Right Arrow Keys (Meta + Shift + Left/Right Arrow Keys on Mac OS X)

Begins a continuous selection at the cursor position and extends it one word at a time in the direction that you press the arrow keys.

Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the current line (on Mac OS X, it extends to the beginning of the document).

Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the current line (on Mac OS X, it extends to the end of the document).

Ctrl + Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the document.

Ctrl + Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the document.

Shift + PageUp

Begins a continuous selection at the cursor position and extends it up one screen page.

Shift + PageDown

Begins a continuous selection at the cursor position and extends it down one screen page.

Double-Click

Selects the word at the cursor position.

Triple-Click

Selects the node at the cursor position.

Right-Click > Select > Element

Selects the entire element at the current cursor position.

Right-Click > Select > Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Right-Click > Select > Parent

Selects the entire parent element at the current cursor position.

Content Completion Assistant in Author Mode

One of the most useful features in **Author** mode is the *Content Completion Assistant*. It offers a list of elements, attributes, attribute values, and other options that are valid in the current editing context.

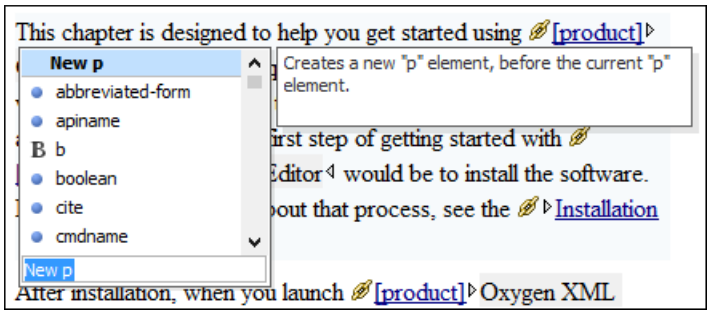


Figure 99: Content Completion Assistant in Author Mode

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

Using the Content Completion Assistant in Author Mode

To activate the feature in **Author** mode, use any of the following shortcut keys:

- **Enter**
- **Ctrl + Space (Command + Space on OS X)**
- **Alt + ForwardSlash (Command + Alt + ForwardSlash on OS X)**

You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. In same cases, the *Content Completion Assistant* displays a documentation window with information about the particular proposal and some of them have links to additional information (for example, DITA elements might have a link to the DITA Style Guide). You can use **Tab** and **Shift + Tab** to navigate to those links and **Space** to trigger them. You can also change the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Author** mode, simply press **Enter**.

Types of Proposals Listed in the Content Completion Assistant

The *Content Completion Assistant* offers the following types of proposed actions depending on the current context:

- Insert allowed elements for the current context schema and the list of proposals contains elements depending on the elements inserted both before and after the cursor position.
- Insert element values if such values are specified in the schema for the current context.
- Insert new undeclared elements by entering their name in the text field.
- Insert CDATA sections, comments, processing instructions.
- Insert code templates.
- If invoked on a selection that only contains an element start or end tag (remember that you can see all element tags while working in **Full Tags** mode), it will allow you to rename the element.
- If invoked on a selection of multiple elements or other content, it will allow you to surround the content with certain tags.
- If invoked on an empty list item that is the last element of the list, it will allow you to convert the list item to a paragraph.
- If the **Show all possible elements in the content completion list** option from the **Schema-Aware** preferences page is selected, the content completion pop-up window will present all the elements defined by the schema. When choosing an element from this section, the insertion will be performed using the schema-aware smart editing features.

  Note: By default, you are not allowed to insert element names that are not defined by the schema. This can be changed by deselecting the **Allow only insertion of valid elements and attributes** check box from the **Schema-Aware** preferences page.

Examples of How the Content Completion Assistant Works

To illustrate how the feature works, consider the following examples of invoking the *Content Completion Assistant* in certain contexts:

- If the cursor is positioned at the beginning or at the end of the element, the first item offered in the *Content Completion Assistant* is a **New <Element>** item. Selecting this item will insert an empty element.

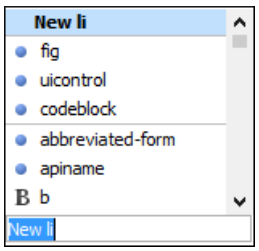


Figure 100: Example (New [Element Name])

- If the cursor is positioned somewhere inside the element, the first entry in the *Content Completion Assistant* is a **Split <Element>** item. In most cases, you can only split the closest *block element* to the cursor position, but if it is inside a list item, the list item will also be proposed for split. Selecting **Split <Element>** splits the content of the specified element around the cursor position.

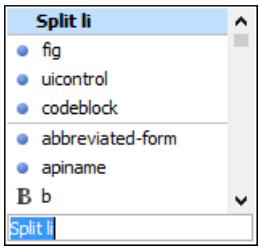


Figure 101: Example (Split [Element Name])

- If the cursor is positioned inside a *space-preserved element* (for example, a *codeblock*), the first choice in the *Content Completion Assistant* is **Enter**, which will insert a new line in the content of the element, followed by **New <Element>**.

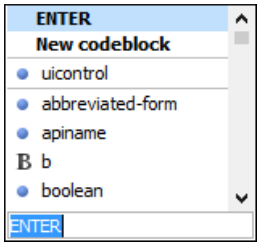


Figure 102: Example ('ENTER' New Line)

- If invoked on a selection that only contains an element start or end tag (remember that you can see all element tags while working in **Full Tags** mode), it will allow you to rename the element.

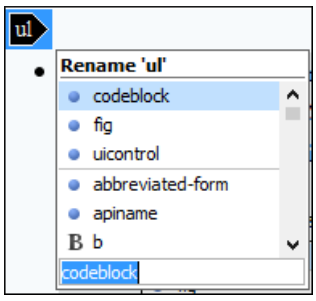


Figure 103: Example (Rename)

- If invoked on a selection of multiple elements or other content, it will allow you to surround the content with certain tags.

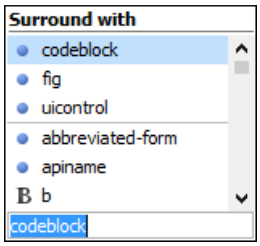


Figure 104: Example (Surround)

Related Information:

Customizing the Content Completion Assistant on page 1300

Set the Schema to be Used for Content Completion

The proposals that are presented in the *Content Completion Assistant* depend on the associated schemas. The DTD, XML Schema, Relax NG, or NVDL schema used to populate the *Content Completion Assistant* is specified in the following methods, in the order of their precedence:

- The schema specified explicitly in the document. In this case, Oxygen XML Editor plugin reads the beginning of the document and resolves the location of the DTD, XML Schema, Relax NG schema, or NVDL schema.
- The default schema declared in the **Schema** tab of the **Document Type** configuration dialog box for the particular document type.

Schema Annotations in Author Mode

A *schema annotation* is a documentation snippet associated with the definition of an element or attribute in a schema. If such a schema is associated with an XML document, the annotations are displayed in the *Content Completion Assistant*.

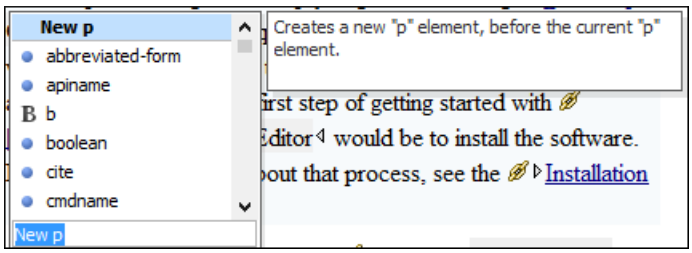


Figure 105: Schema Annotation in the Content Completion Assistant

The schema annotations support is available if the schema type is one of the following:

- XML Schema
- Relax NG
- NVDL schema
- DTD

This feature is enabled by default, but you can disable it by deselecting the **Show annotations in Content Completion Assistant** option in the **Annotations** preferences page.

Styling Annotations with HTML

You can use HTML format in the annotations you add in an XML Schema or Relax NG schema. This improves the visual appearance and readability of the documentation window displayed when editing XML documents validated against such a schema. An annotation is recognized and displayed as HTML if it contains at least one HTML element (such as `div`, `body`, `p`, `br`, `table`, `ul`, or `ol`).

The HTML rendering is controlled by the **Show annotations using HTML format, if possible** option in the **Annotations** preferences page. When this options is deselected, the annotations are converted and displayed as plain text and if the annotation contains one or more HTML tags (`p`, `br`, `ul`, `li`), they are rendered as an

HTML document loaded in a web browser. For example, p begins a new paragraph, `br` breaks the current line, `ul` encloses a list of items, and `li` encloses an item of the list.

Collecting Annotations from XML Schemas

In an XML Schema, the annotations are specified in an `<xs:annotation>` element like this:

```
<xs:annotation>
  <xs:documentation>
            Description of the element.
  </xs:documentation>
</xs:annotation>
```

If an element or attribute does not have a specific annotation, then Oxygen XML Editor plugin looks for an annotation in the type definition of that element or attribute.

Collecting Annotations from Relax NG Schemas

For Relax NG schema, element and attribute annotations are made using the `<documentation>` element from the `http://relaxng.org/ns/compatibility/annotations/1.0` namespace like this:

```
<define name="person" >
  <element name="person">
    <a:documentation xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0">
            Information about a person. </a:documentation>
      <ref name="name"/>
        <zeroOrMore>
      <ref name="email"/>
        </zeroOrMore>
  </element>
</define>
```

However, any element outside the Relax NG namespace (`http://relaxng.org/ns/structure/1.0`) is handled as annotation and the text content is displayed in the annotation window. To activate this behavior, select the **Use all Relax NG annotations as documentation** option in the **Annotations** preferences page.

Collecting Annotations from Relax NG Compact Syntax Schemas

For Relax NG Compact Syntax schema, annotations are made using comments like this:

```
##  Information about a person.
element person { name, email*}
```

Collecting Annotation from DTDs

For DTD, Oxygen XML Editor plugin defines a custom mechanism for annotations using comments enabled by the **Prefer DTD comments that start with "doc:" as annotations** option in the **Annotations** preferences page. The following is an example of a DTD annotation:

```
<!--doc:Description of the element. -->
```

Related Information:

Customizing the Rendering of Elements on page 1307
Annotations for XML Elements and Attributes in Content Completion Assistant on page 1309

Content Completion Helper Views

Information about the current element being edited is also available in various *dockable* views, such as the **Model** view, **Attributes** view, **Elements** view, and **Entities** view. By default, they are located on the right-hand side of the main editor window. These views, along with the powerful **Outline** view, provide spatial and insight information about the edited document and the current element. If any particular view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

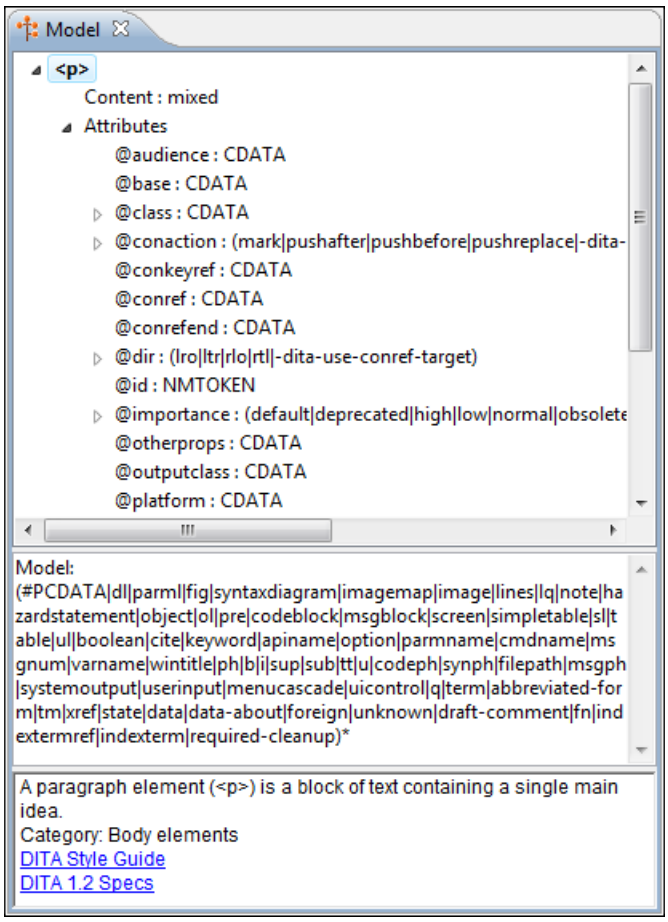


Figure 106: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

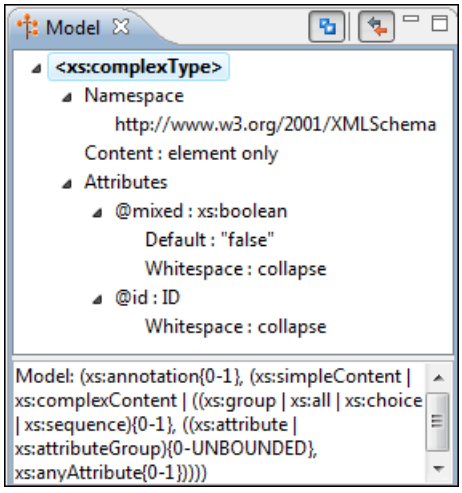


Figure 107: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

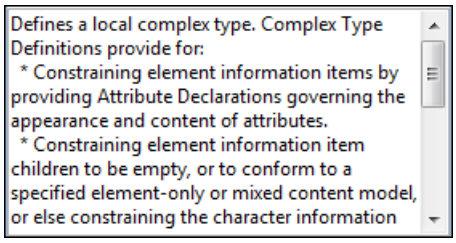


Figure 108: Annotation panel

Attributes View in Author Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use this view to edit or add attribute values. The attributes of an element are editable if any one of the following is true:

- The CSS stylesheet associated with the document does not specify a **false** value for the -oxy-editable property associated with the element.
- The element is entirely included in a deleted *Track Changes* marker.
- The element is part of a content fragment that is referenced in **Author** mode from another document.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.
- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

Note: If the cursor is located inside read-only content, the attribute names and values are faded and you cannot add, edit, or remove values.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

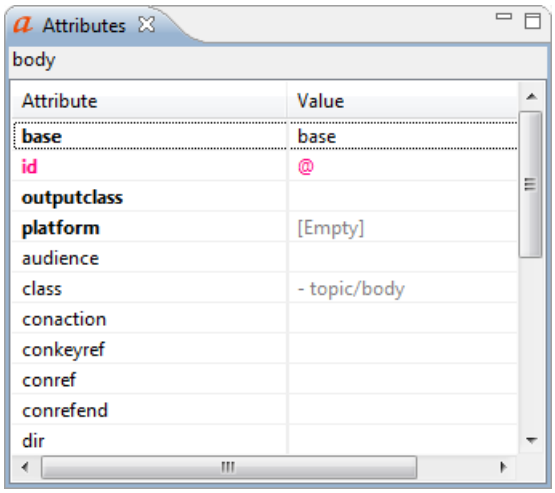


Figure 109: Attributes View

A drop-down list located in the upper part of the view allows you to select the current element or its ancestors.

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Author** mode:

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.
- If the clipboard only contains text, the value of the selected attribute is modified.

In-place Attributes Editor

Oxygen XML Editor plugin includes an in-place attributes editor in **Author** mode. To edit the attributes of an XML element in-place, do one of the following:

- Select an element or place the cursor inside it and then press the **Alt + Enter** keyboard shortcut.
- Double-click any named start tag when the document is edited in one of the following display modes.: **Full Tags with Attributes**, **Full Tags**, **Block Tags**, or **Inline Tags**.

This opens an in-place attributes editor that contains the same content as the **Attributes** view. By default, this editor presents the **Name** and **Value** fields, with the list of all the possible attributes collapsed.

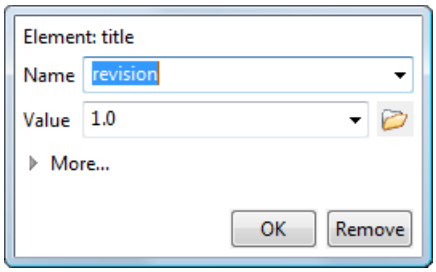


Figure 110: In-place Attributes Editor

Name Combo Box

Use this combo box to select an attribute. The drop-down list displays the list of possible attributes allowed by the schema of the document, as in the **Attributes** view.

Value Combo Box

Use this combo box to add, edit, or select the value of an attribute. If the selected attribute has predefined values in the schema, the drop-down list displays those possible values. You can use the **Browse** button to select a URL for the value of an attribute. You can also press **Ctrl + Space** to open a content completion window that offers a list of possible choices and allows you to select multiple values.

If you click **More** while in the collapsed version, it is expanded to the full version of the in-place attribute editor.

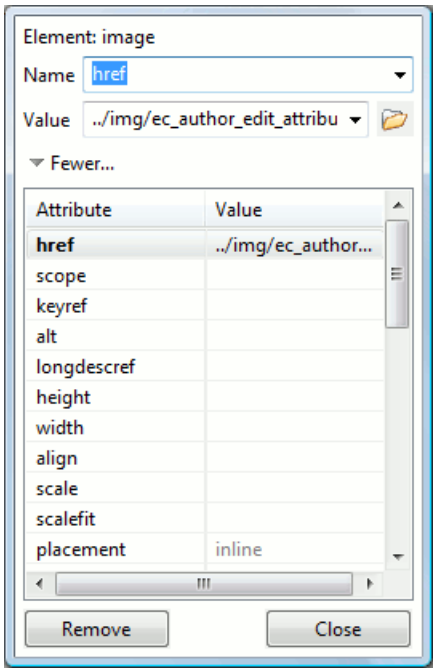


Figure 111: In-place Attributes Editor (Full Version)

The full version includes a table grid, similar to the **Atributes** view, that presents all the attributes for the selected element.

Elements View in Author Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the view features a combo box that contains the ordered ancestors of the current element. Selecting a new element in this combo box updates the list of the allowed elements. By default, only the elements that are allowed at the current cursor position are listed. However, if the **Show only items allowed at cursor position** option is not selected in the **View** preferences page, two additional tabs (**Before** and **After**) will be

displayed at the bottom of the view and they list elements that are allowed before or after the element at the current cursor position.

Double-clicking any of the listed elements inserts that element into the edited document and its position depends on the tab.

- **Cursor** tab - Double-clicking an element inserts it at the current cursor position.
- **Before** tab - Double-clicking an element inserts it before the element at the cursor position.
- **After** tab - Double-clicking an element inserts it after the element at the cursor position.

Pressing **F2** with an element selected will display information about that particular element.

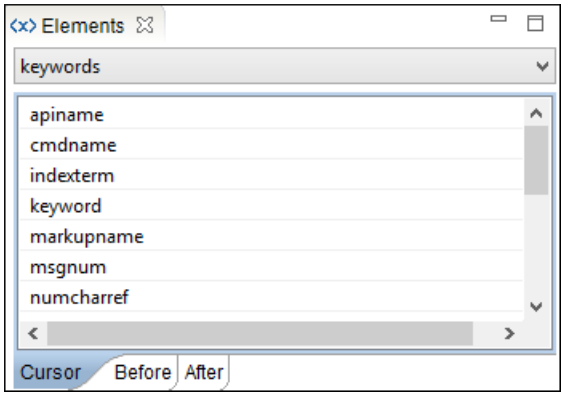


Figure 112: Elements View in Author Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

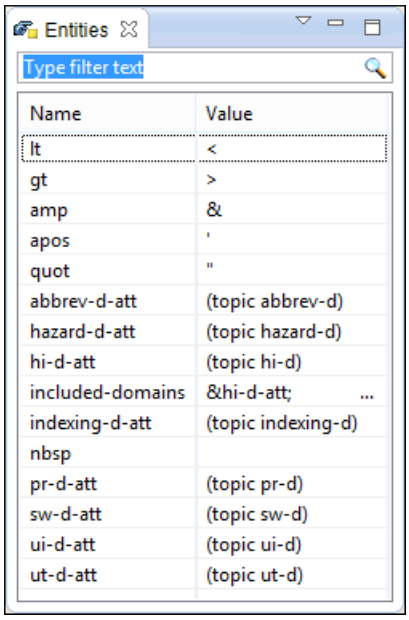


Figure 113: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Code Templates

Code templates are code fragments that can be inserted quickly at the current editing position . Oxygen XML Editor plugin includes a set of built-in code templates for CSS, Schematron, XSL, XQuery, and XML Schema document types. You can also define your own code templates for any type of file and share them with others.

To get a complete list of available code templates, press **Ctrl + Shift + Space** in **Text** mode. To enter the code template, select it from the list or type its code and press **Enter**. If a shortcut key has been assigned to the code template, you can also use the shortcut key to enter it. Code templates are displayed with a symbol in the content completion list.

When the *Content Completion Assistant* is invoked (**Ctrl + Space (Command + Space on OS X)** in **Text** mode or **Enter** in **Author** mode), it also presents a list of code templates specific to the type of the active editor.

For more information about code templates, watch our video demonstration:

https://www.youtube.com/embed/eNOMCJSzIu8

Reviewing Documents

Oxygen XML Editor plugin includes a variety of helpful review tools that improve your ability to collaborate with other members of your team, track changes, mark content for various reasons, add comments in your content, and to manage the review features.

Tracking Document Changes

The *Track Changes* feature is a way to keep track of the changes you make in a document. The *Track Changes* feature highlights changes that you make to the content in a document, as well as changes to attributes. Changes can be tracked for insertions and deletions. When the *Track Changes* feature is activated, insertions are rendered in **Author** mode with an underline while deletions are rendered with a strike through.

The *tracked changes* are also displayed in the **Review** view and you can also choose to present the changes in callouts by selecting the **Track Changes Deletions** and **Track Changes Insertions** options in the **Callouts** preferences page.

Adding Comments in Documents

You can associate a comment to a selected area of content. Comments can highlight virtually any content from your document, with the exception of *read-only* text. The difference between using comments and *change tracking* is that a comment can be associated to an area of text without modifying or deleting the text.

Comments are presented in callouts with persistent highlights and a colored background. The background color is assigned automatically by the application, but it can also be customized from the **Review** preferences page.

Highlighting Content

Oxygen XML Editor plugin includes a highlighting feature that allows you to create digital markers to emphasise important fragments of your documents. This is especially useful when you want to mark content that needs additional work or the attention of others.

Using the Review View

Oxygen XML Editor plugin includes a **Review** view that provides a simplified way of monitoring all the insertions, deletions, comments, and highlights in an XML document. This handy tool is especially useful for large teams that need to gather and manage all the edits from all team members who are working on the same project.

The **Review** view is also useful for managing *tracked changes* and comments in a single panel. In this view, the changes and comments are presented in a compact form, in the order they appear in the document, and they are synchronized with the changes and comments in the main editing area.

You can use this view to quickly navigate through changes, accept or reject them, or to view and manage comments or highlights. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

Printing Review Information

When you print a document from **Author** mode, whatever review information is shown in the main editing area will be included in the printed output. For example, *tracked changes* will be included and as long as the **Comments** option is selected in the **Callouts** preferences page, comment callouts will also be included (same with *tracked change* callouts if their corresponding options are selected in the **Callouts** preferences page.

Managing Tracked Changes

Oxygen XML Editor plugin includes a *Track Changes* feature that allows you to review changes that you or other authors have made and then accept or reject them. You can also manage the visualization mode of the tracked changes, add comments to changes, and mark them as being done. These actions are easily accessible from contextual menus, the toolbar, or the **Review** view.

The *Track Changes* feature is also able to keep track of changes you make to attributes in a document and the changes are presented in the **Review** view and **Attributes** view.

Types of Tracked Changes

The types of *tracked changes* include:

- Inserting, deleting content (text or elements)
- Drag and drop content (text or elements)
- Cutting or pasting content (text or elements)
- Inserting, deleting, and changing the structure of tables
- Inserting and editing lists and their content
- Inserting and deleting entities
- Inserting and deleting element tags
- Editing attributes
- Performing a **Split** operation
- Performing a **Surround with** operation
- Changes in referenced content (for example, XInclude fragments or DITA conrefs)

Important: If you copy content in **Author** mode that contains *tracked changes*, the changes will automatically be accepted prior to the content being copied to the clipboard. This filtering is performed only if the selection is not entirely inside a tracked change.

Activating the Change Tracking Feature

To activate the *Track Changes* feature for the current document, use any of the following methods:

- Click the **Track Changes** button on the toolbar.
- Select **Track Changes** from the **Review** submenu of the contextual menu in the main editing area in **Author** mode.
- Select **Track Changes** from the **Edit** > **Review** menu.

To activate the *Track Changes* feature globally for all documents that you open in Oxygen XML Editor plugin, change the **Initial State** option to **Always On** in the **Review** preferences page.

Rendering Tracked Changes in Author Mode

When *Track Changes* is enabled, your modifications are highlighted using a distinctive color. The colors can be customized from the **Review** preferences page, along with the name of the author and the initial state of the feature when you open a document. Insertions are rendered with an underline while deletions are rendered with a strike through.

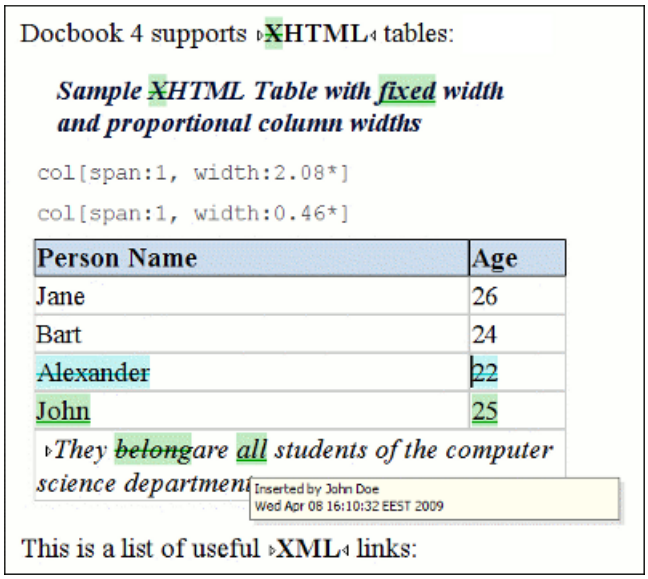


Figure 114: Change Tracking in Author Mode

When hovering over a change a tooltip displays information about the author and modification time.

Change Tracking Contextual Menu Actions

You can right-click any change in **Author** mode to access the following contextual menu actions:

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes,

all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Change Tracking Toolbar Actions

By default, the toolbar includes the following actions and options for reviewing or *tracking changes* (similar actions are also available in the **Edit** > **Review** menu and the **Review** submenu of the contextual menu):

Track Changes

Enables or disables the *Track Changes* support for the current document.

Accept Change(s) combo box

This combo box is both a button and a drop-down menu that includes the following actions (when you select an action from the drop-down menu, that action becomes the default action for the combo box button):

- **Accept Change(s) and Move to Next** - Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted.
- **Accept Change(s)** - Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection.
- **Accept All Changes** - Accepts all *Tracked Changes* in the current document.

Reject Change(s) combo box

This combo box is both a button and a drop-down menu that includes the following actions (when you select an action from the drop-down menu, that action becomes the default action for the combo box button):

- **Reject Change(s) and Move to Next** - Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected.
- **Reject Change(s)** - Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection.
- **Reject All Changes** - Rejects all *Tracked Changes* in the current document.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Track Changes Visualization Modes Drop-Down Menu

This drop-down menu includes specialized actions that allow you to switch between the following visualization modes:

- **View All Changes/Comments** - This mode is active by default. When you use this mode, all tracked changes are represented in the **Author** mode.
- **View only Changes/Comments by** - Only the tracked changes made by the author you select are presented.
- **View Final** - This mode offers a preview of the document as if all tracked changes (both inserted and deleted) were accepted.
- **View Original** - This mode offers a preview of the document as if all tracked changes (both inserted and deleted) were rejected. If you attempt to edit the document in this mode, the view mode will switch to **View All Changes/Comments**.

Note: If you use **View Final** mode and **View Original** mode, *callouts* are not displayed for comments or changes. To display callouts, use the **View All Changes/Comments** mode.

Highlight

Enables or disables the **Highlight** tool. Use the **Highlight** drop-down menu to select a new color.

Add Comment

Inserts a comment at the cursor position. The comment appears in a callout box and a tooltip (when hovering over the change).

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Manage Reviews

Opens the **Review** view.

Tracked Change Callouts

You can also choose to display insertion and deletion changes in *callouts* in **Author** mode. By default, tracked changes are not displayed in callouts, but you can change this behavior by selecting the **Track Changes Deletions** and **Track Changes Insertions** options in the **Callouts** preferences page. You can also choose to display the actual content of the deletion or insertion.

By displaying the changes in callouts, you then have access to even more actions, such as the ability to reply or mark them as being done. For more information, see Author Callouts on page 482.

Tracked Changes in the Review View

The **Review** view is also useful for managing tracked changes and comments. In this view, the edits are presented in a compact form, in the order they appear in the document and each edit is marked with a type-specific icon. You can use this view to quickly navigate through changes, accept or reject them, or to add and manage comments for the changes. You can also search for specific changes and it includes some filtering options (for example, you can filter it to only show certain types of changes or to only show changes for a particular author).

For more information, see Review View on page 486.

Tracked Changes XML Source Code

The changes are stored in the document source code as processing instructions and they do not interfere with validations or transformations. For each change, the author name and the modification time are preserved.

Example - Insertion Change: The following processing instruction is an example of how an *insertion* change is stored in a document:

```
<?oxy_insert_start author="John Doe" timestamp="20090408T164459+0300"?>all<?
oxy_insert_end?>
```

Example - Deletion Change: The following processing instruction is an example of how a *deletion* change is stored in a document:

```
<?oxy_delete author="John Doe" timestamp="20090508T164459+0300" content="belong"?>
```

For more information about the *Track Changes* support, watch our video demonstration:

https://www.youtube.com/embed/L_ESxRMfnek

Related Information:

Managing Comments on page 479
Author Callouts on page 482
Review View on page 486

Tracked Changes Behavior

The behavior of the *Track Changes* feature depends on the context, the type of change, and whether or not it is activated.

Inserting Content

If the *Track Changes* feature is disabled and you insert content, the following behavior is possible:

- Making an insertion in a **Delete** change results in the change being split in two and the content is inserted without being marked as change.
- Making an insertion in an **Insert** change results in the change being split in two and the content is inserted without being marked as change.
- Making an insertion in regular content results in a regular insertion.

If the *Track Changes* feature is enabled and you insert content, the following behavior is possible:

- Making an insertion in a **Delete** change results in the change being split in two and the current inserted content appears marked as an INSERT.
- Making an insertion in an **Insert** change results in the following:
  - If the original insertion was made by another user, the change is split in two and the current inserted content appears marked as an INSERT by the current author.
  - If the original **Insert** change was made by the same user, the change is just expanded to contain the inserted content. The creation time-stamp of the previous insert is preserved.
- If we insert in regular content, the current inserted content appears marked as an **Insert** change.

Surrounding Content

If the *Track Changes* feature is enabled and you surround content in a new XML element, the following behavior is possible:

- Making a surround in a **Delete** change results in nothing happening.
- Making a surround in an **Insert** change results in the following:
  - If the original insertion was made by another user, the change is split in two and the surround operation appears marked as being performed by the current author.
  - If the original **Insert** change was made by the same user, the existing change is just expanded to contain the surrounded content.
- Making a surround in regular content results in the operation being marked as a surround change.

Deleting Characters

If the *Track Changes* feature is disabled and you delete content character by character, the following behavior is possible:

- Deleting content in an existing **Delete** change results in nothing happening.
- Deleting content in an existing **Insert** change results in the content being deleted without being marked as a deletion and the INSERT change shrinks accordingly.
- Deleting in regular content results in a regular deletion.

If the *Track Changes* feature is enabled and you delete content character by character, the following behavior is possible:

- Deleting content in an existing **Delete** change results in the following:
  - If the same author created the **Delete** change, the previous change is marked as deleted by the current author.

    - If another author created the **Delete** change, nothing happens.
- Deleting content in an existing **Insert** change results in the following:
    - If the same author created the **Insert** change, the content is deleted and the **Insert** change shrinks accordingly.
    - If another author created the **Insert** change, the **Insert** change is split in two and the deleted content appears marked as a **Delete** change by the current author.
- Deleting in regular content results in the content being marked as a **Delete** change by the current author.

Deleting Selections of Content

If the *Track Changes* feature is disabled and you delete a selection of content, the following behavior is possible:

- If the selection contains an entire **Delete** change, the change disappears and the content is deleted.
- If the selection intersects with a **Delete** change (starts or ends in one), it results in nothing happening.
- If the selection contains an entire **Insert** change, the change disappears and the content is deleted.
- If the selection intersects with an **Insert** change (starts or ends in one), the **Insert** change is shrunk and the content is deleted.

If the *Track Changes* feature is enabled and you delete a selection of content, the following behavior is possible:

- If the selection contains an entire **Delete** change, the change is considered as rejected and then marked as deleted by the current author, along with the other selected content.
- If the selection intersects a **Delete** change (starts or ends in one), the change is considered as rejected and marked as deleted by the current author, along with the other selected content.
- If the selection contains an entire **Insert** change, the following is possible:
    - If the **Insert** is made by the same author, the change disappears and the content is deleted.
    - If the **Insert** is made by another author, the change is considered as accepted and then marked as deleted by the current author, along with the other selected content.
- If the selection intersects an **Insert** change (starts or ends in one), the **Insert** change shrinks and the part of the **Insert** change that intersects with the selection is deleted.

Deleting Tags

Assuming you are using any of the *Tag Display Modes* other than **No Tags** and the *Track Changes* feature is disabled, the following behavior is possible:

- If you delete a start or end tag, both the start and end tag will be removed, while any content that was inside the element is preserved.

Assuming you are using any of the *Tag Display Modes* other than **No Tags** and the *Track Changes* feature is enabled, the following behavior is possible:

- If you delete a start tag of an *inline element*, both the start and end tag are marked as a **Delete** change by the current author, while any content that was inside the element is preserved.

Copying Content

If the *Track Changes* feature is disabled and you copy content, the following behavior is possible:

- If the copied area contains **Insert** or **Delete** changes (or attribute edits), these are also copied to the clipboard.

If the *Track Changes* feature is enabled and you copy content, the following behavior is possible:

- If the copied area contains **Insert** or **Delete** changes (or attribute edits), these are all accepted in the content of the clipboard (the changes will no longer be in the clipboard).

Pasting Content

If the *Track Changes* feature is disabled and you paste content, the following behavior is possible:

- If the clipboard content contains **Insert** or **Delete** changes (or attribute edits), they will be preserved on paste.

If the *Track Changes* feature is enabled and you paste content, the following behavior is possible:

- If the clipboard content contains **Insert** or **Delete** changes (or attribute edits), all the changes are accepted and then the paste operation proceeds according to the insertion rules.

Tracked Changes Limitations

There are some inherent limitations to the *Change Tracking* feature. These limitations include the following:

- **Limitations to rejected changes** - Recording changes has limitations and there is no guarantee that rejecting all changes will return the document exactly to its original state.
- **Limitations to hierarchical changes** - Recorded changes are not hierarchical, a change cannot contain other changes inside. For example, if you delete an insertion made by another user, then reject the deletion, the information about the author who made the previous insertion is not preserved.
- **Limitations to using certain actions** - Some actions cannot be implemented with the *Track Changes* feature enabled. For example, some of the table-related actions (**Delete Row(s)**, **Delete Column(s)**, **Join Cells**, **Split Cell**) ignore the *Track Changes* feature when executing the action.

Tracked Changes XML Markup

Depending on the type of edits, the following markup appears in the document source code when you activate the *Track Changes* feature:

Edit Type	Processing Instruction Start Marker	Processing Instruction End Marker	Attributes
Insertion	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`
Split	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`, `type="split"`
Surround	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`, `type="surround"`
Deletion	`<?oxy_delete?>`	_	`author`, `timestamp`, `content`
Comment	`<?oxy_comment_start?>`	`<?oxy_comment_end?>`	`author`, `timestamp`, `comment`, `mid`
Attribute Change	`<?oxy_attributes?>`	_	`id`, `type`, `oldValue`, `author`, `timestamp`

If a comment intersects another, the `mid` attribute is used to correctly identify start and end processing instruction markers.

Managing Comments

You can add comments to any selected area of content within XML documents, with the exception of *read-only* content. The difference between using comments and *tracked changes* is that a comment is associated to a selection without modifying or deleting the content.

By default, when you annotate your XML documents, the comments are displayed in the **Author** mode as *callouts* (balloons) and they are rendered with a unique name and background for each user. If comments are not currently displayed in callouts, select the **Comments** option in the **Callouts** preferences page. Comments are also displayed in the **Review** view.

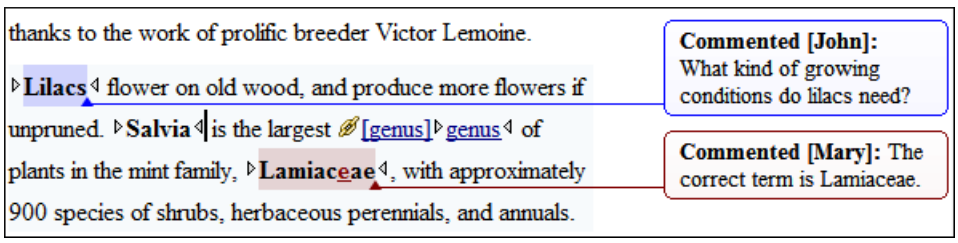


Figure 115: Comments in Author Mode

Managing Comments in the Main Editor

You can insert and manage comments directly in the main editing area in **Author** mode.

Add Comment

To insert a comment at the cursor position or on a specific selection of content, select the **Add Comment** action from the toolbar (or in the **Review** submenu of the contextual menu).

Tip: When adding or editing a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

Show/Edit Comments

To edit an existing comment that you have added in the main editing area in **Author** mode, select the **Show/Edit Comments** action from the toolbar (or in the **Review** submenu of the contextual menu). The action opens a dialog box that allows you to see and edit your comment at the cursor position. Note that you cannot edit a comment that was added by another user, so in that case, the dialog box just displays the comment without the possibility of editing it.

Remove Comments

To remove a comment at the cursor position or multiple comments in a selection, select **Remove Comment(s)** from the toolbar (or in the **Review** submenu of the contextual menu).

Copy/Paste

If you copy content that includes comments, they will be preserved when you paste it.

Managing Comments in Callouts

As long as the **Comments** option is selected in the **Callouts** preferences page, comments are also displayed in callouts. By displaying the comments in callouts, you then have access to even more actions, such as the ability to reply or mark them as being done. When you right-click a specific comment in its callout, the contextual menu includes the following actions.

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Tip: When adding, editing, or replying to a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

Managing Comments in the Review View

The **Review** view is also useful for managing comments. In this view, comments are presented in a compact form, in the order they appear in the document, along with tracked changes. You can also use this view to search for specific comments and it includes some filtering options (for example, you can filter it to only show comments for a particular author). When you right-click a specific comment in the **Review** view, the contextual menu includes the following actions.

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Show only reviews by '<author name>'

Filters the comments to only show comments for the particular author.

Remove all Comments

Removes all comments from the document.

Comments XML Source Code

The comments are stored in the document source code as processing instructions that contain information about the author name and the comment time:

```
<?oxy_comment_start author="John Doe" timestamp="20090508T164459+0300"
 comment="Do not change this content"?>
    Important content
<?oxy_comment_end?>
```

Replies to comments are stored in the document source code as a comment (with information about the author name and time), but with a `parentID` attribute and its value is the same as the `id` value of the parent comment.

```
<?oxy_comment_start author="Tom" timestamp="20160217T102630+0200"
comment="We should not forget about recycling the oil and oil filter!"
parentID="vws_x4l_1v" mid="4"?>
```

Related Information:

Author Callouts on page 482

Review View on page 486

Managing Highlights

Use the **Highlight** tool to mark fragments in your document using various colors. This is especially useful when you want to mark sections that needs additional editing or to draw the attention of others to particular content.

Using the Highlight Tool

You can find the **Highlight** action on the main toolbar, in the **Edit** > **Review** menu, or in the **Review** submenu of the contextual menu of a document. You can also choose the color to use for the highlight or choose to **Stop highlighting** from the same menus.

To highlight content, follow these steps:

1. Click the **Highlight** icon on the toolbar.

   Step Result: The highlighting mode is on and the cursor changes to a dedicated symbol.
2. Click the small arrow next to the **Highlight** icon and select the color that you want to use for the highlighting.
3. Select the content you want to highlight. To mark multiple parts of a document, press and hold **Ctrl (Meta on Mac OS)** and select the parts you want to highlight.
4. To exit the highlighting mode, press **Esc**, click the **Highlight** icon, or start editing the document.

To remove highlighting from a document, follow these steps:

1. Either select the text you want to remove highlighting from using your cursor, or press **Ctrl + A (Command + A on OS X)** if you want to select all of the text.
2. Click the small arrow next to the **Highlight** icon and select **No color (erase)**, or right-click the highlighted content and select **Remove highlight(s)**.
3. To exit the highlighting mode, press **Esc**, click the **Highlight** icon, or start editing the document.

Note: Oxygen XML Editor plugin preserves the highlighting of a document between working sessions. Also, if you copy content that includes highlights, the highlighting will be preserved when you paste it.

Review View

The **Review** view is also useful for managing highlights. In this view, the highlights are presented in a compact form, in the order they appear in the document, along with *tracked changes* and comments. The following actions are available in the contextual menu of each highlight in the **Review** view:

Change Color
: Allows you to change the color of an existing highlight by selecting the new color from this menu.

Remove Highlight
: Removes the selected highlight.

Remove Highlights with the Same Color
: Removes the selected highlight and all others that have the same color.

Remove All Highlights
: Removes all highlights from the document.

Highlights XML Source Code

The highlights are stored in the document source code as processing instructions that contain information about the color:

```
<?oxy_custom_start type="oxy_content_highlight" color="0,128,255"?>
  The highlights are stored<?oxy_custom_end?>
```

For more information about using the **Highlight** tool, watch our video demonstration:

https://www.youtube.com/embed/RMFyuMfisZY

Related Information:

Review View on page 486

Author Callouts

Oxygen XML Editor plugin uses *callouts* to present comments and *tracked change* modifications that you or other members of your team have added to the document.

Displaying Callouts in Author Mode

The callouts are displayed in the right side of the editing area in **Author** mode. They are decorated with a colored border and also have a colored background. The background color is assigned automatically by the application depending on the user who is editing the document and the type of change, but it can also be customized from the **Review** preferences page. This preferences page allows you to configure the colors for tracked change insertions or deletions, and for comments.

You can also choose to use the same color for all changes of that particular type of change, regardless of who makes the change. To do this, select the **Fixed** option for the particular type of change and choose a color from the color box. If the **Automatic** option is selected, Oxygen XML Editor plugin automatically assigns a color based upon the **Colors for automatic assignment** list.

The horizontal line that connects the callouts to their corresponding text fragments has the same color as the border. If this horizontal line is not visible, select the **Show all connecting lines** option in the **Callouts** preferences page. If you hover over a callout, it is highlighted and a tooltip is displayed that contains additional information.

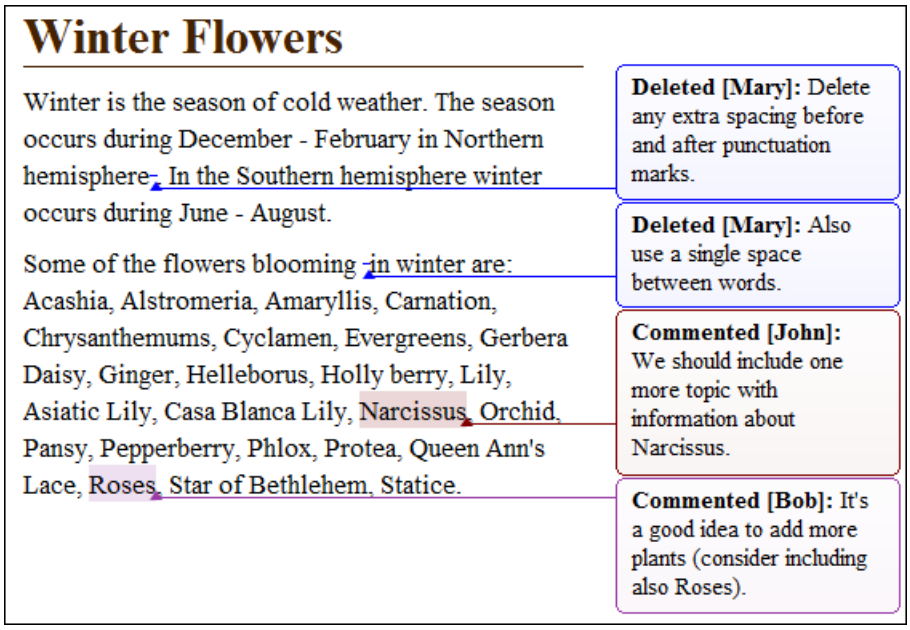


Figure 116: Multiple Author Callouts

Note: Oxygen XML Editor plugin displays callouts only if **View All Changes/Comments** or **View Only Changes/Comments by** is selected in the **Track Changes Visualization Modes** drop-down menu. Oxygen XML Editor plugin does not display callouts in **View Final** and **View Original** modes.

In some cases, the text you are editing can span into the callouts area. For example, this situation can appear for callouts associated with wide images or *space-preserved elements* that contain long fragments (such as a DITA *codeblock* element or `programlisting` in DocBook). To help you view the text under the covered area, Oxygen XML Editor plugin applies transparency to these callouts. When the cursor is located under a callout, the transparency is enhanced, allowing you to both edit the covered content and access the contextual menu of the editing area.

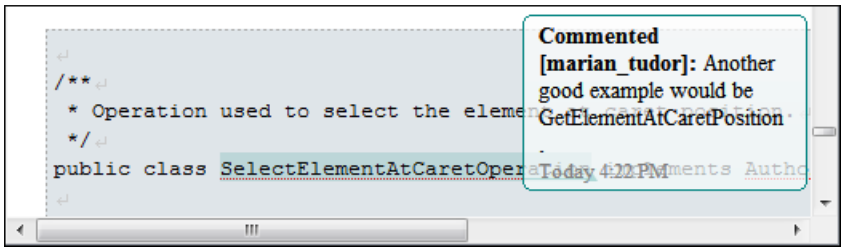


Figure 117: Transparent Callout

Adjusting Callout Width

To display more of the content in all the callouts in the current document, you can adjust the width by dragging the left side of any of the callouts. This will adjust the width for all comments in the current document. When you end the current editing session, the width of all callouts will revert back to the default value, which is the value of the **Initial Width** option in the **Callouts** preferences page.

You can also adjust the maximum number of lines to be shown in the callouts using the **Text Lines Count Limit** option. Note that this does not limit the number of lines in the actual comment. It only limits the number of lines shown without opening or editing it.

Type of Callouts in Oxygen XML Editor plugin

Oxygen XML Editor plugin uses callouts to display comments and *Tracked Changes* that you associate with fragments of the document you are editing. You can choose which types of edits will be shown in callouts by configuring the options in the **Callouts** preferences page. You can choose to enable the following types of review callouts:

- **Comment Callouts** - As long as the **Comments** option is selected in the **Callouts** preferences page, comments are displayed in callouts. A comment callout contains the name of the author who inserts the callout and the comment itself. You can also select the **Show review time** option to include timestamp information in the comment callouts.

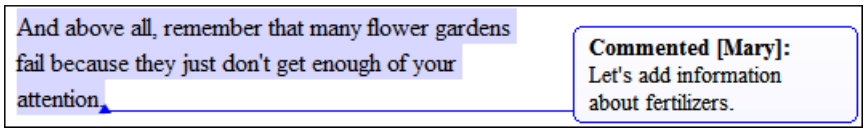


Figure 118: Comment Callouts

There are several types of comments that can be added in **Author** mode:

- *Author Review Comments* - Comments that you associate with specific content. To insert this type of comment, select the content and use the **Add Comment** action that is available on the toolbar (or in the **Review** submenu of the contextual menu).
- *Comments Added to Tracked Changes* - Comments that you add to an already existing *tracked change* insertion or deletion. To insert this type of comment, right-click the change in the main editor or its callout and select **Comment Change**.
- *Replies to Comments* - You can use this type of comment to create discussion threads. To insert this type of comment, right-click the change in the its callout and select **Reply**. A single callout is presented for a root comment or change and its replies. The replies are displayed with an indentation in the callouts and those that are on the same level are sorted depending on the timestamp.

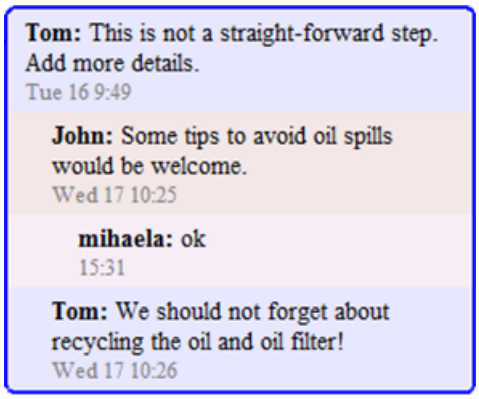


Figure 119: Callout for a Comment with Replies

Tip: When adding, editing, or replying to a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

- **Tracked Change Deletion Callouts** - As long as the **Track Changes Deletions** option is selected in the **Callouts** preferences page, deletions that are made while the *Track Changes* feature is enabled are displayed in callouts. A deletion callout contains the type of callout (**Deleted**) and the name of the author that made the deletion. You can also select the **Show deleted content in callout** option to display the actual deleted content in the callout. Additionally, you can select the **Show review time** option to include timestamp information in the deletion callouts.

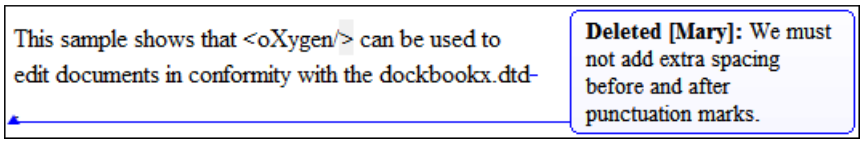


Figure 120: Deletion Callouts

- **Tracked Change Insertion Callouts** - As long as the **Track Changes Insertions** option is selected in the **Callouts** preferences page, insertions that are done while the *Track Changes* feature is enabled are displayed in callouts. An insertion callout contains the type of callout (**Inserted**) and the name of the author that inserted the content. You can also select the **Show inserted content in callout** option to display the actual deleted content in the callout. Additionally, you can select the **Show review time** option to include timestamp information in the deletion callouts.

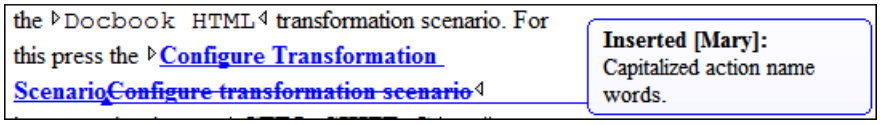


Figure 121: Insertion Callouts

Callout Contextual Menu Actions

Some useful actions are available when the contextual menu is invoked on a callout. The actions depend on the type of callout.

Insertion or Deletion Callout Actions

The following actions are available in the contextual menu of an insertion or deletion callout:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Accept Change

Accepts the tracked change, removes the callout, and moves to the next change. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change

Rejects the tracked change, removes the callout, and moves to the next change. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Comment Callout Actions

The following options are available in the contextual menu of a comment callout:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Printing Callouts

When you print a document from **Author** mode, all callouts that you or other authors have added to the document are printed. For a preview of the document and its callouts, go to **File** > **Print Preview**.

Review View

The **Review** view is also useful for managing the information in callouts. In this view, changes and comments are presented in a compact form, in the order they appear in the document, and they are synchronized with the changes in the callouts. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

For more information, see Review View on page 486.

To watch our video demonstration about the Callouts support, see our video demonstration:

https://www.youtube.com/embed/kCCWyFqBaUM

Related Information:

Managing Tracked Changes on page 473
Managing Comments on page 479
Review View on page 486

Review View

The **Review** view is an independent panel, available both for built-in and custom XML document *frameworks*. It is designed to offer an enhanced way of monitoring all the changes that you make to a document. This means you can view and manage highlights, comments, and *tracked changes* using a single view.

The **Review** view is useful when you are working with documents that contain large number of edits. The edits are presented in a compact form, in the order they appear in the document. Each type of edit is marked with a specific icon. This view and the editing area are synchronized. When you select an edit listed in the **Review** view, its corresponding fragment of text is highlighted in the editing area and the reverse is also true. For example, when you place the cursor inside an area of text marked as inserted, its corresponding edit is selected in the list.

You can use this view to quickly navigate through changes and it includes some useful hover actions and contextual menu actions to help you manage changes, comments, and highlights. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

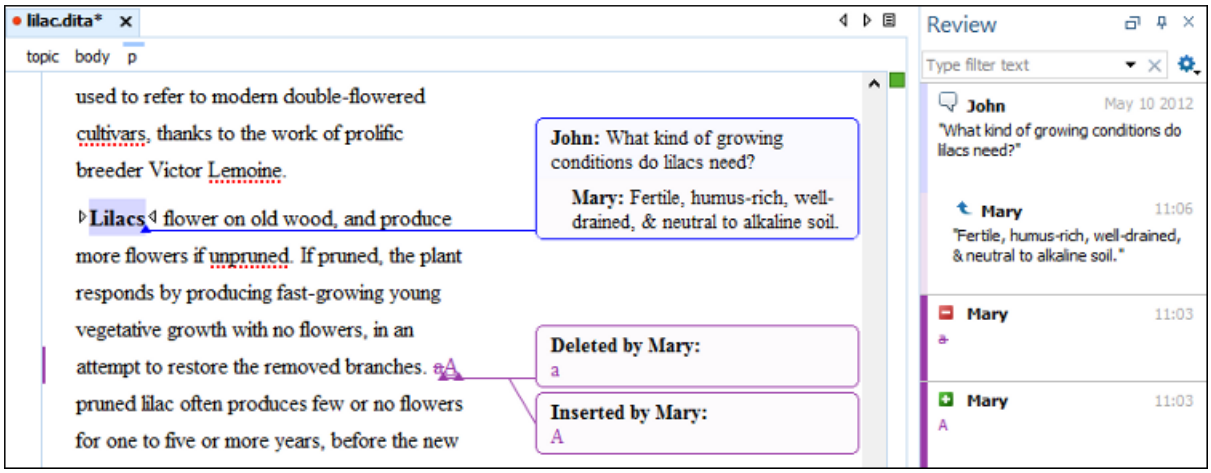


Figure 122: Review View

Activating the Review View

To activate the **Review** view, do one of the following:

- Click the **Manage reviews** button on the toolbar.

- Right-click anywhere in a document and select **Review** > **Manage reviews**.
- Open it from the **Window** > **Show View** menu.

Review View Settings

The upper part of the view contains a filtering area that allows you to search for specific edits. Use the small arrow symbol from the right side of the search field to display the search history.

The **Settings** menu includes the following options:

- **Show highlights** - Controls whether or not the **Review** view displays the highlighting in your document.
- **Show comments** - Controls whether or not the **Review** view displays the comments in the document you are editing.
- **Show track changes** - Controls whether or not the **Review** view displays the inserted and deleted content in your document.
- **Show review time** - Displays the time when the edits from the **Review** view were made.
- **Configure review options** - Opens the **Review** preferences page where you can configure various options for review information.

Hover Actions in the Review View

You can use this view to easily manage changes, highlights, and comments that have been added by you or other users. The following actions are available when you hover over the changes in the **Review** view:

Remove

Available for highlights and comments presented in the **Review** view and it removes the particular highlight or comment from your document and moves to the next change.

Accept

Available for inserted and deleted content presented in the **Review** view and it accepts the particular change in your document and moves to the next change.

Reject

Available for inserted and deleted content presented in the **Review** view and it rejects the particular change in your document and moves to the next change.

Contextual Menu Actions in the Review View

Depending on the type of an edit, the following additional actions are available in the contextual menu of the **Review** view:

Reply

Opens the **Reply** dialog box where you can add a reply to comment or change. The replies are displayed with an indentation in this view.

Mark as Done

This toggles the comment or change as being done and grays it out. You can mark a whole discussion thread as being done by selecting the action on the first (parent) comment in the thread.

Show Comment

Available for comments added by other users and you can use this option to view it in a **Show comment** dialog box.

Edit Comment

Available for comments you have added and you can use this action to edit a comment.

Remove Comment

Use this action to remove the selected comment.

Show only Reviews by '<author name>'

Use this action to filter the edits to only show them for a certain author.

Remove All Comments

Use this action to remove all the comments that appear in the edited document.

Change Color

Available for highlights and it opens a palette that allows you to choose a new color for the highlighted content.

Remove Highlight

Use this action to remove the selected highlight.

Remove Highlights with the Same Color

Use this action to remove all the highlights with the same color from the entire document.

Remove All Highlights

Use this action to remove all the highlights in your document.

Accept Change

Accepts the selected change and moves to the next change.

Reject change

Rejects the selected change and moves to the next change.

Comment change

Available for insertions or deletions and you can use this option to add a comment for the particular change.

Accept all changes

Accepts all the changes in the current document.

Reject all changes

Rejects all the changes in the current document.

For more information about the **Review** view, watch our video demonstration:

https://www.youtube.com/embed/W22jkbwlh60

Related Information:

Managing Tracked Changes on page 473
Managing Comments on page 479
Managing Highlights on page 481
Author Callouts on page 482

Profiling and Conditional Text

Profiling text is a way to mark blocks of text meant to appear in some renditions of the document but not in others. Conditional text differs from one variant of the document to another, while unconditional text appear in all document versions. For example, you can mark a section of a document that is to be included in a manual to be designated for *expert* users and another section for *novice* users, while unmarked sections are included in all renditions.

Profiling Attributes and Condition Sets

Oxygen XML Editor plugin allows you to define values for the profiling attributes and they can be easily managed to filter content in the published output. You can switch between profile sets to see how the edited content looks like before publishing. You can also conditionally profile parts of a document so that certain parts are displayed when certain profiling conditions are set. You can even customize the colors and styling of how the profiling is displayed in **Author** mode.

You can use profiling and conditional text to help you create documentation for multiple output scenarios, including:

- Multiple outputs for a series of similar products.
- Multiple outputs for various releases of a product.
- Multiple outputs for various audiences.

This feature helps to reduce the effort for updating and translating your content and provides an easy way to customize the output for various audiences.

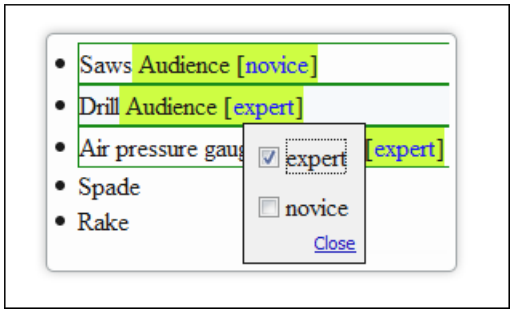


Figure 123: Example: Profiling Content

Oxygen XML Editor plugin includes a preconfigured set of profiling attribute values for some of the most popular document types. These attributes can be redefined to match your specific needs in the **Profiling/Conditional Text** preferences page. You can also define your own profiling attributes and condition sets for each document type (*framework*).

For information about creating and editing profiling attributes, see Creating and Editing Profiling Attributes on page 490 .

For information about creating and editing condition sets, see Creating and Editing Profiling Condition Sets on page 494 .

Related Information:

Customizing Elements that Wrap Profiled Content on page 1275

Creating and Editing Profiling Attributes

Oxygen XML Editor plugin includes support for defining your own profiling attributes, or modifying existing ones, for each particular document type (*framework*). You can then apply the profiling attributes to content in **Author** mode to see how the profiling will affect the output.

Create Profiling Attributes

To create custom profiling attributes for a specific document type, follow these steps:

1. Make sure the attribute is already defined in the document DTD or schema before continuing with the procedure.
2. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text** .
3. In the **Profiling Attributes** section, press the **New** button.

   Step Result: The **Profiling Attribute** configuration dialog box is opened.

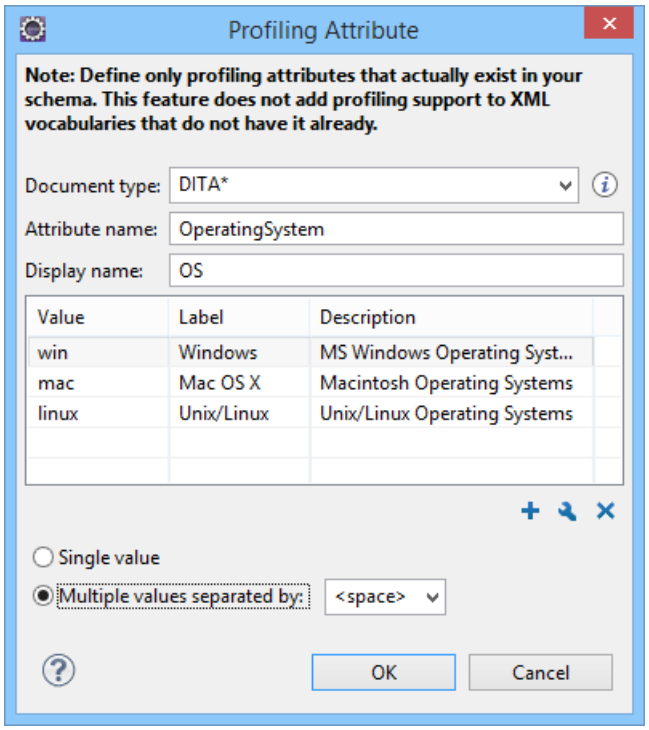


Figure 124: Profiling Attribute Dialog Box

4. Configure your profiling attributes as desired. The following options are available in this dialog box:

Document type

Select the document type (*framework*) for which you have defined profiling attributes.

Tip: You can use the * or ? wildcards in this combo box. For example, `DITA*` would match any document type that starts with *"DITA"*. You can also specify multiple document types by using commas to separate them.

Attribute name

The name of the new profiling attribute.

Display name

This optional field is used for descriptive rendering in profiling dialog boxes.

Attribute Values Table

This table displays the values for the profiling attribute and allows you to configure them by using the following buttons at the bottom of the table:

New

Opens a dialog box that allows you to insert a new value. The fields that can be configured in this dialog box correspond to the columns in the table and are as follows:

- **Value** - The attribute value.
- **Label** - You can specify a label for the attribute value that will be rendered as its name in various components in **Author** mode (**Edit Profiling Attributes** dialog box, **Condition Set** dialog box, **Profiling** tab in the **Edit Properties** dialog box, **DITA Maps Manager**). If the **Label** is not specified, the **Value** will be used as its rendered name.
- **Description** - A description for the attribute value that will be displayed in this table.

Edit

Use this button or double-click an attribute value to modify it.

Delete

Removes the selected attributed value.

Single value

Select this option if you want the attribute to only accept a single value.

Multiple values separated by

Select this option if you want the attribute to accept multiple values, and you can choose the type of delimiter to use. You can choose between *space*, *comma*, and *semicolon*, or you can enter a custom delimiter in the text field. A custom delimiter must be supported by the specified document type. For example, the DITA document type only accepts spaces as delimiters for attribute values.

5. Click **OK** to confirm your selections and close the **Profiling Attributes** configuration dialog box.
6. Click **Apply** to save the profiling attribute.

Editing Existing Profiling Attributes

To modify an existing profiling attribute or its values, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Attributes** section, press the **Edit** button to modify an existing profiling attribute (you can also use **Delete** button to remove a profiling attribute or the **Up** and **Down** buttons to change their priority).

   Step Result: If you use the **Edit** button, the **Profiling Attributes** configuration dialog box is opened:
3. Modify your profiling attribute as desired.
4. To add or modify attribute values, use the **New**, **Edit**, or **Delete** buttons under the attribute values table.
5. Click **OK** to confirm your selections and close the **Profiling Attributes** configuration dialog box.
6. Click **Apply** to save your modifications.

Adding or Editing Profiling Attribute Values

There are several ways to add values to existing profiling attributes.

- Use the procedure in the Editing Existing Profiling Attributes section to edit an existing attribute and use the **Profiling Attribute** configuration dialog box to add, edit, or delete values for existing profiling attributes.
- You can add values directly to the existing profiling attributes in a document using the In-Place Attributes Editor in **Author** mode, the **Attributes** view, or in the source code in **Text** mode. However, this just adds them to the document and does not change the conditional text configuration. If you invoke the **Edit Profiling Attributes** action (from the contextual menu in **Author** mode) on the new value, the **Profiling Values Conflict** dialog box will appear and it includes an **Add these values to the configuration** action that will automatically add the new value to the particular profiling attribute. It also includes an **Edit the configuration** action that opens the **Profiling / Conditional Text** preferences page where you can edit the profiling configuration.

  Note: If the **Allow contributing extra profiling attribute values** option is not selected in the **Profiling / Conditional Text** preferences page, the **Profiling Values Conflict** dialog box will never appear, so this second method will not be possible.

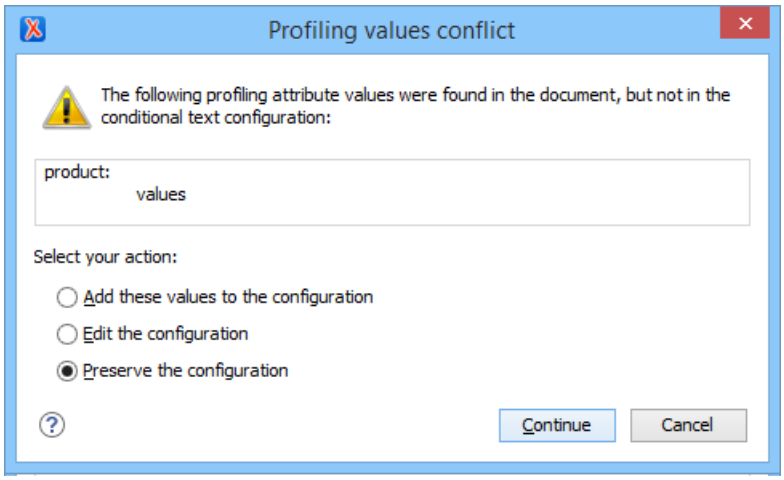


Figure 125: Profiling Values Conflict Dialog Box

Related Information:

Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Applying Profiling Attributes

Profiling attributes are applied on element nodes. You can apply profiling attributes on a text fragment (it will automatically be wrapped into a phrase-type element), on a single element, or on multiple elements in the same time. If there is no selection in your document, the profiling attributes are applied on the element at the cursor position.

To apply a profiling attribute to content in **Author** mode, follow these steps:

1. To apply a profiling attribute to content in **Author** mode, highlight the content and select **Edit Profiling Attributes** from the contextual menu. To profile an entire element, position the cursor inside the element, right-click, and select **Edit Profiling Attributes** (you can also right-click the element in the *breadcrumb* or **Outline** view).

   Step Result: The **Edit Profiling Attributes** dialog box is displayed and shows all the profiling attributes and their values, as defined for the particular document type (*framework*). If you have a large list of profiling attributes, you can use the text filter field to search for attributes or values, and you can expand or collapse attributes by using the **Expand All** / **Collapse All** buttons to the right of the text filter or the arrow button to the left of the profiling attribute name.

   The attributes and values that appear in the dialog box are determined as follows:

   - If you have defined profiling attribute values for the DITA document type in the **Profiling/Conditional Text** preferences page, those values are displayed in the dialog box.
   - Otherwise, a generic default set of profiling attributes and values are available.

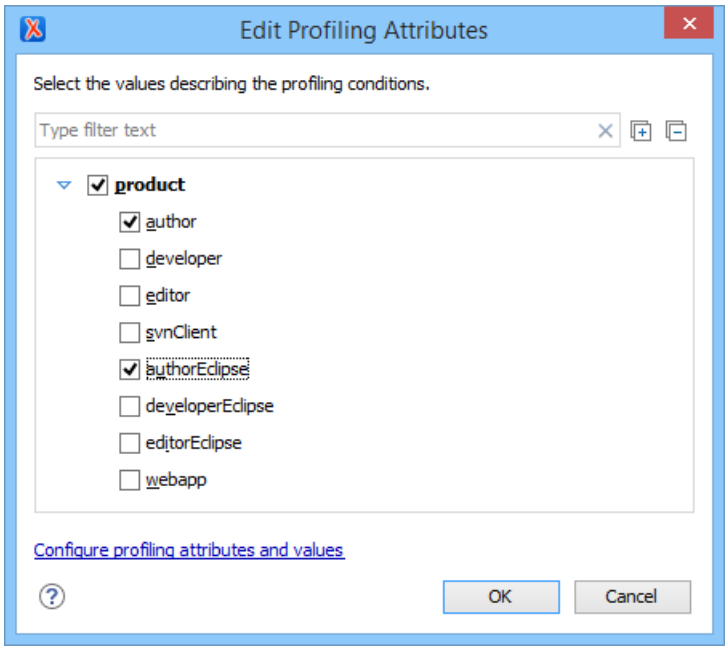


Figure 126: Edit Profiling Attributes Dialog Box

2. In the **Edit Profiling Attributes** dialog box, select the checkboxes that correspond to the attribute values you want to apply on the *document fragment*.
3. Click **OK** to finish the profiling configuration.

   Result: The attribute names and values selected in the **Edit Profiling Attributes** dialog box are set on the elements contained in the profiled fragment. If you only select a fragment of content (rather than the entire element), this fragment is wrapped in phrase-type elements in which the profiling attributes are set.

   If the **Show Profiling Attributes** option (available in the **Profiling / Conditional Text** toolbar menu) is selected, a green border is painted around profiled text in the **Author** mode and all profiling attributes set on the current element are listed at the end of the highlighted block. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

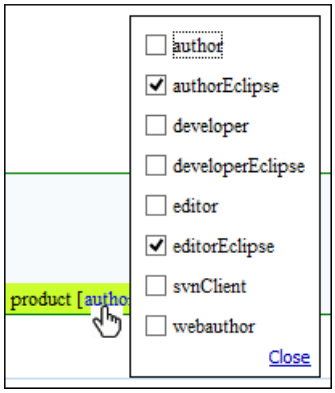


Figure 127: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Creating and Editing Profiling Condition Sets

Multiple profiling attributes can be aggregated into a profiling condition set that allows you to apply more complex filters on the document content. A *Profiling Condition Set* is a very powerful and convenient tool that can be used to preview the content that goes into the published output. For example, an installation manual available in both Windows and Linux variants can be profiled to highlight only the Linux procedures for more advanced users.

Create Profiling Condition Sets

To create a new profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, press the **New** button.

   Step Result: The **Condition Set** configuration dialog box is opened.

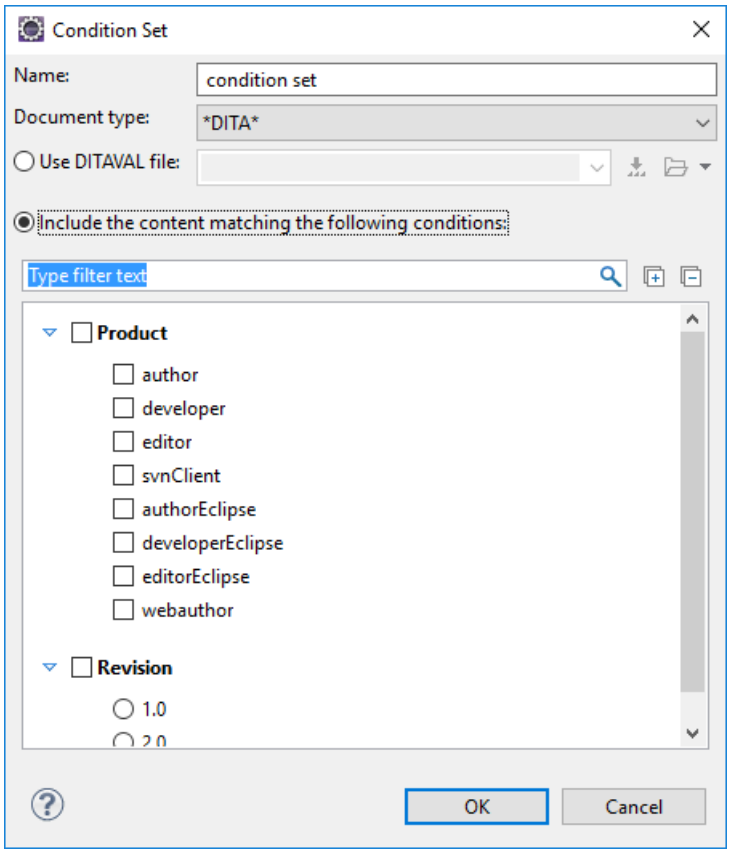


Figure 128: Condition Set Dialog Box

3. Configure your condition set as desired. The following options are available in this dialog box:

   Name

   The name of the new condition set.

   Document type

   Select the document type (*framework*) for which you have defined profiling attributes.

   Use DITAVAL file

   For DITA projects, select this option if you want the *Profiling Condition Set* to reference a DITAVAL file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Include the content matching the following conditions

You can select this option to define the combination of attribute values for your condition set by selecting the appropriate checkboxes for the values you want to be included in this particular condition set. If you have defined a lot of profiling attributes, you can use the **filter** text field to search for specific conditions.

4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save the condition set. All saved profiling condition sets are available in the **Profiling / Conditional Text** toolbar drop-down menu.

Editing Existing Profiling Condition Sets

To modify an existing profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, press the **Edit** button to modify an existing condition set (you can also use **Delete** button to remove a condition set or the **Up** and **Down** buttons to change their priority).

Step Result: If you use the **Edit** button, the **Condition Set** configuration dialog box is opened:

3. Modify your condition set as desired.
4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save your modifications.

Related Information:

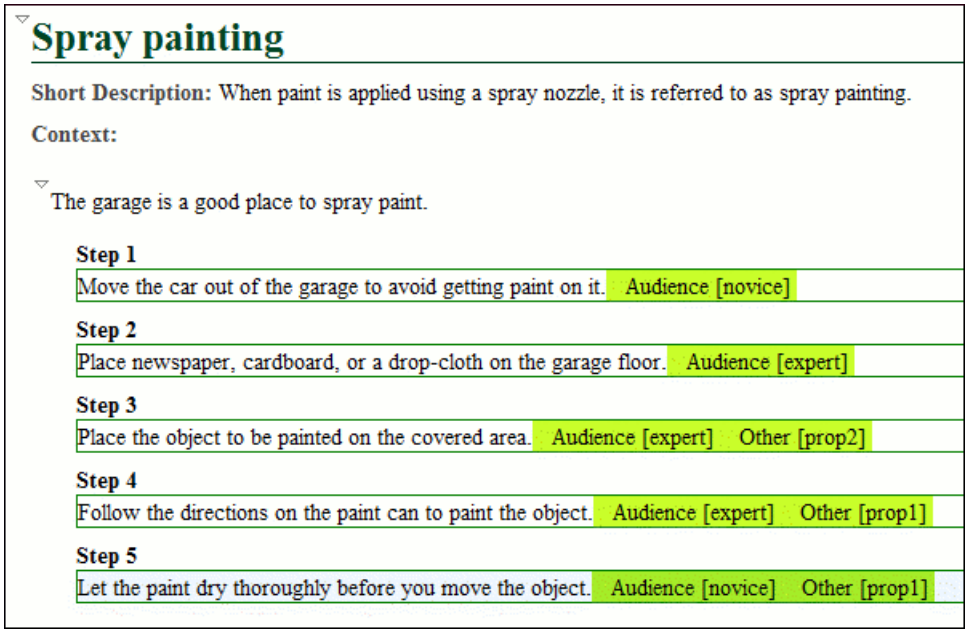
Applying Profiling Condition Sets on page 495
Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Showing and Filtering Profiled Content in Author Mode on page 497

Applying Profiling Condition Sets

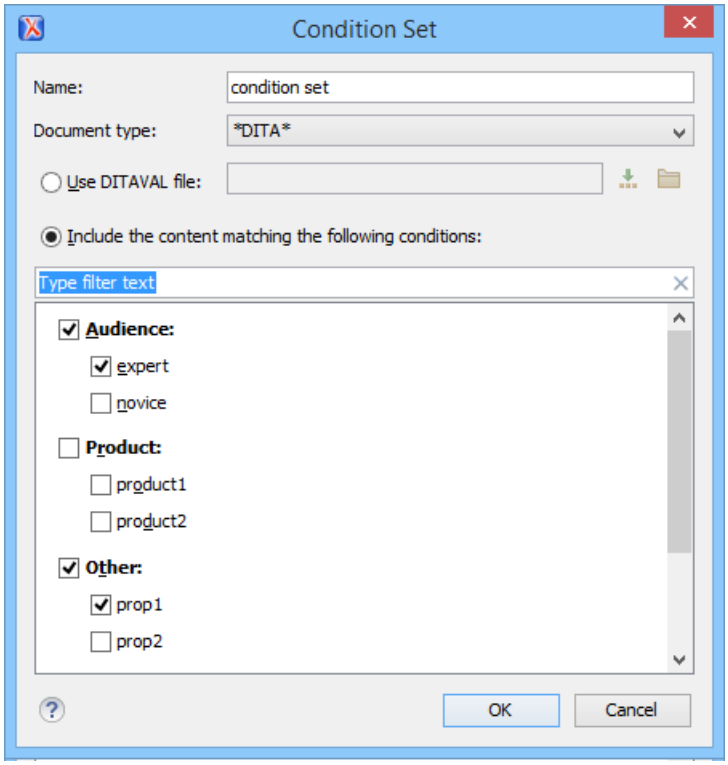
All defined Profiling Condition Sets are available as shortcuts in the **Profiling / Conditional Text** toolbar menu. Select a menu entry to apply the condition set. The filtered content is then grayed-out in the **Author** mode, **Outline** view, and **DITA Maps Manager** view (for DITA documents). An element is filtered-out when one of its attributes is part of the condition set and its value does not match any of the value covered by the condition set.

EXAMPLE:

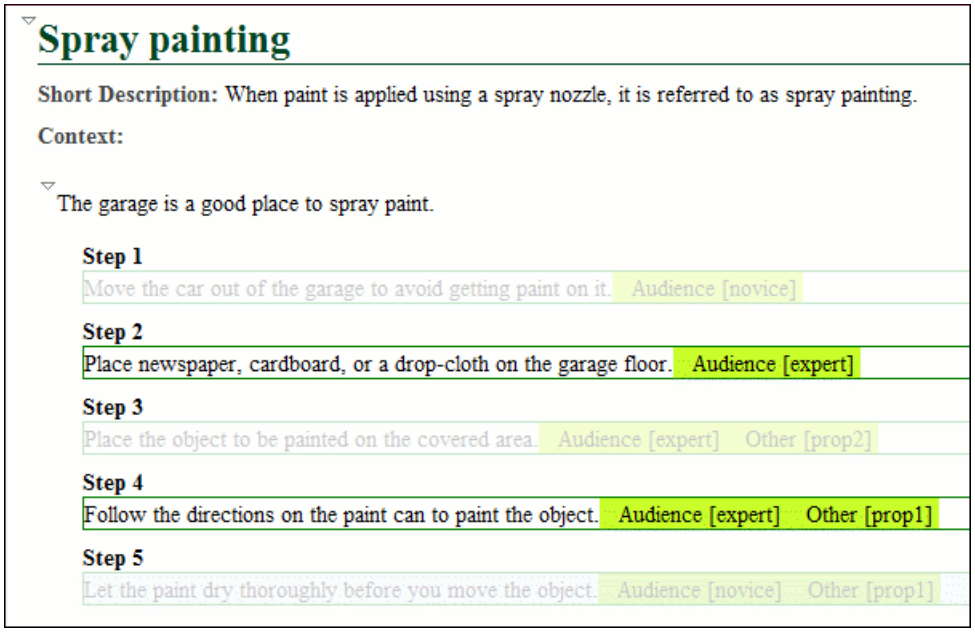
Suppose that you have the following document:



If you apply the following condition set, it means that you want to filter out the content to only include content written for an expert audience and content that has the *Other* attribute value of *prop1*.



This is how the document looks after you apply the condition set:



Related Information:

Creating and Editing Profiling Condition Sets on page 494
Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Showing and Filtering Profiled Content in Author Mode on page 497

Showing and Filtering Profiled Content in Author Mode

You can visualize the effects of profiled content in **Author** mode by using the options in the **Profiling/Conditional Text** drop-down menu that is located on toolbar. This drop-down menu includes the following filtering options:

Show Profiling Colors and Styles

Select this option to show colors and styles for profiled content in **Author** mode. You can configure the colors and styles or specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Colors and Styles** preferences page.

Show Profiling Attributes

Select this option to display the values of the profiling attributes at the end of profiled content in **Author** mode. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Attributes Rendering** preferences page.

Show Excluded Content

Controls whether the content filtered out by a particular condition set is hidden or grayed-out in **Author** mode and the **Outline** view. When this option is selected and a condition set is selected in this drop-down menu, the filtered content is grayed-out. If this option is not selected and a condition set is selected in this drop-down menu, the filtered content is hidden. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** preferences page.

Choose Condition Set (Available if more than 15 condition sets are defined)

This option is available if you have more than 15 conditions sets defined. It opens a dialog box that makes it easier to find and select condition sets that are not displayed in this drop-down menu.

List of Defined Condition Sets

Up to 15 defined condition sets are listed and you can toggle each one of them on to filter the content in **Author** mode to only show content that will appear in the output for that particular condition set. If there are more than 15 defined condition sets, the rest of them can be accessed in the **More** submenu or by using the **Choose Condition Set** option to access a dialog box that presents all of them.

Profiling Settings

Opens the **Profiling/Conditional Text** preferences page where you can add and edit profiling attributes and condition sets.

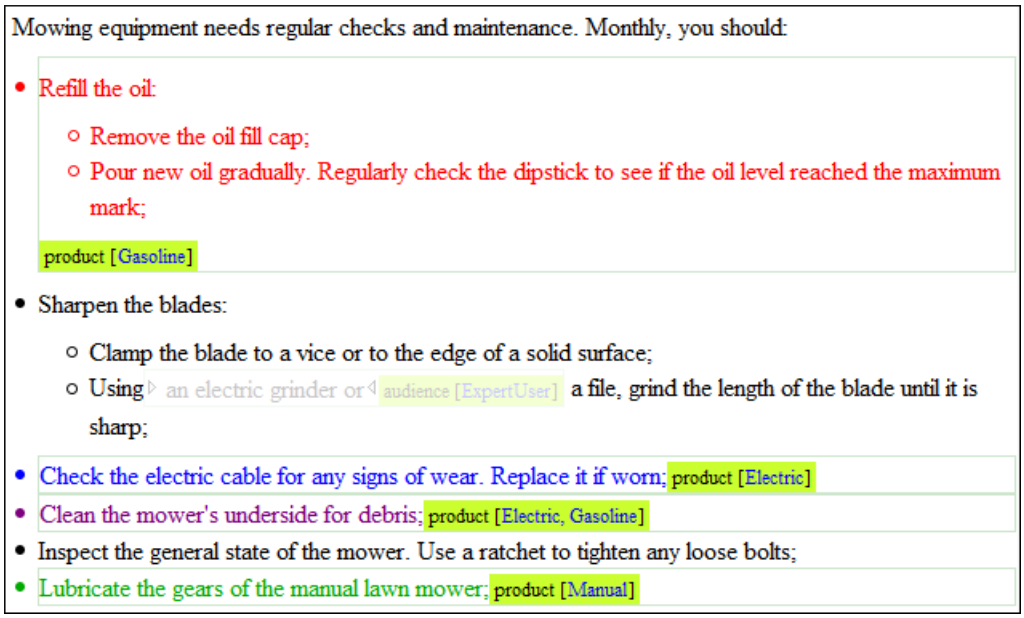


Figure 129: Example: Filtering Profiled Content in Author Mode

If the **Show Profiling Attributes** option is selected, a green border is painted around profiled text in the **Author** mode. Also, all profiling attributes set on the current element are listed at the end of the highlighted block and in

its tooltip message. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

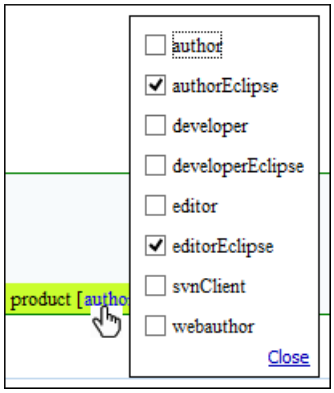


Figure 130: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495

Customizing Colors and Styles for Rendering Profiling in Author Mode

By applying profiling colors and styles, you can mark profiled content in **Author** mode so that you can instantly spot differences between multiple variants of the output. This allows you to preview the content that will go into the published output. The excluded text is grayed-out or hidden in **Author** mode, allowing you to easily recognize the differences.

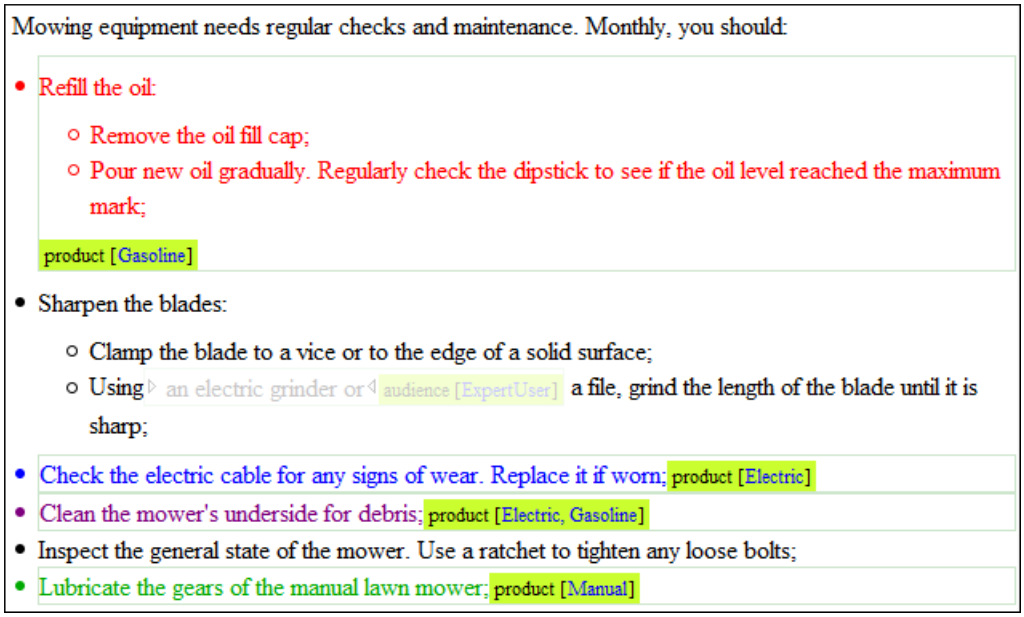


Figure 131: Example: Profiling Colors and Styles

Choosing the right style for a specific profiling attribute is a matter of personal taste, but be aware of the following:

- If the same block of text is profiled with two or more profiling attributes, their associated styles combine. Depending on the styling, this might result in an excessively styled content that may prove difficult to read or work with.
- It is recommended that you only profile the differences. There is no need to profile common content, since excessive profiling can visually pollute the document.

- A mnemonic associated with a style will help you instantly spot differences in the types of content.

Styling Profiling Attribute Values

To set colors and styles for profiling attribute values, follow these steps:

1. Select the **Show Profiling Colors and Styles** option from the **Profiling / Conditional Text** toolbar drop-down menu.
2. Select **Profiling Settings** from the **Profiling / Conditional Text** toolbar drop-down menu. This is a shortcut to the **Profiling/Conditional Text** preferences page.
3. Go to the **Colors and Styles** preferences page to configure the colors and styling for the profiling attributes.
4. Go to the **Attributes Rendering** preferences page to configure how you want the profiling attributes to appear in Oxygen XML Editor plugin.

Result: The styling is now applied in the **Author** editing mode and the **Outline** view. Also, to help you more easily identify the profiling you want to apply in the current context, the styling is applied in the **Edit Profiling Attributes** dialog box and in the inline form control pop up that allows you to quickly set the profiling attributes.

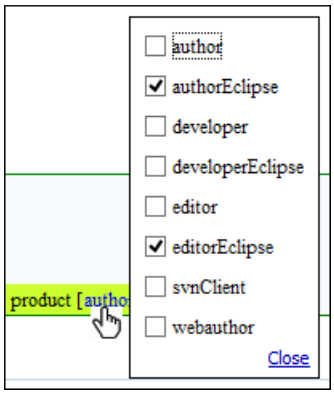


Figure 132: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Adding Tables in Author Mode

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in various *frameworks* (DITA, DocBook, TEI, and XHTML). This opens the **Insert Table** dialog box. Each *framework* has a different set of options that are available in this dialog box for configuring the properties of the tables. In all cases, Oxygen XML Editor plugin includes some general editing actions for configuring tables in **Author** mode.

This section explains those general actions and the various configuration options and layouts for tables that are inserted in the most commonly used document types.

Editing Tables in Author Mode

Oxygen XML Editor plugin provides support for editing data in a tabular form. A variety of features and operations are available for editing tables in **Author** mode and they include the following:

Adjusting Column Width

To adjust the width of a column or table, drag the border of the column or table. The changes you make to a table are committed into the source document. You can also manage table width and column width specifications from the source document, and some types of tables include a **colspecs** section that appears above the table

in **Author** mode that allows you to easily configure some column specifications (such as column width). These column width specifications are supported in fixed, dynamic, and proportional dimensions. The predefined DITA, DocBook, and XHTML *frameworks* support this feature. The layout of the tables for these document types takes into account the table width and the column width specifications particular to them.

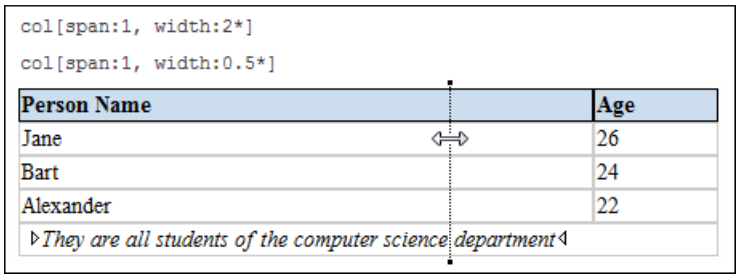


Figure 133: Resizing a Table Column in Author Mode

Selecting Columns and Rows

To select a row or a column of a table, place the mouse cursor above the column or in front of the row you want to select, then click. When hovering the mouse cursor in front of rows or above column headers, the cursor changes to for row selection and to for column selection and that specific row or column is highlighted.

You can use the **Ctrl** and **Shift** keys to select multiple rows.

Selecting Cells

To select a cell in a table, press and hold the **Ctrl** key and click anywhere inside the cell. You can also use the **Ctrl** and **Shift** keys to select multiple cells or to deselect cells from a selection. Alternatively, you can click the left corner of a cell (right corner if you are editing a RTL document) to select it. The cursor changes to when you hover over the corner of the cell.

You can also select multiple rectangular blocks of cells by using your mouse to select a cell and drag it to expand the selection.

Drag and Drop

You can use the drag and drop action to edit the content of a table. You can select a column and drag it to another location in the table you are editing. When you drag a column and hover the cursor over a valid drop position, Oxygen XML Editor plugin decorates the target location with bold rectangles. The same drag and drop action is also available for entire rows or columns by hovering the mouse cursor in front of rows or above column headers, then selecting the row or column and dragging them to the desired location.

Copy/Cut and Paste

In Oxygen XML Editor plugin, you can copy/cut entire rows or columns of the table you are editing and paste the copied columns or rows inside the same table or inside other tables. You can also use the copy or cut actions for tables located in other documents. If you paste a row or column into non-table content, Oxygen XML Editor plugin introduces a new table that contains the fragments of the copied row or column content.

For copied columns, the fragments are introduced starting with the header of the column. Also, if the copied column is from a *CALS* table, Oxygen XML Editor plugin preserves column width information. This information is then used when you paste the column into another *CALS* table.

For copied cells, when pasting them into another cell without a selection (the cursor is just placed in the new cell), the copied cells are pasted while preserving their initial order and spacing. If pasting them into a selection of cells, first the content of the selected cells is deleted, then the copied cells are pasted with their initial order and spacing preserved and if there are more cells in the selection than in the copied content, the pasting will repeat the copied cells until the end of the selection.

Deleting Content

To delete the content of a cell, select the cell and press the **Delete** or **Backspace** key on your keyboard. If you press **Delete** or **Backspace** again, the selected table structure will also be removed.

To delete an entire row or column, place the cursor inside the row or column (or select it) and use the **Delete Row(s)** or **Delete Column(s)** actions from the toolbar or contextual menu. This will delete both the content and the table structure for the current row or column.

To delete a selection of multiple rows or columns, select them and use the **Delete Row(s)** or **Delete Column(s)** actions from the toolbar or contextual menu. This will delete both the content and the table structure for all rows or columns that exist in the current selection.

Navigating Cells

Along with the normal mouse navigation, you can also navigate between cells by using the arrow keys on your keyboard. By default, when using the arrow keys to navigate between table cells, the cursor jumps from one cell to another. However, if the **Quick navigation in tables** option is not selected in the **Cursor Navigation** preferences page, using the arrow keys to navigate between table cells will cause the cursor to navigate between XML nodes, rather than jumping from cell to cell.

Related Information:

Adding Tables in DocBook on page 501
Adding Tables in DITA Topics on page 509
Adding Tables in XHTML Documents on page 519

Adding Tables in DocBook

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a DocBook document.

DocBook supports two types of tables:

- **CALS** table model - This is used for more advanced functionality.
- **HTML** table model - This is used for inserting a formal (captioned) HTML table.

Inserting a CALS Table Model in DocBook

To insert a *CALS* table model in DocBook documents, select the **Insert Table** action on the toolbar or from the contextual menu. The **Insert Table** dialog box appears. Select **CALS** for the table **Model**. This model allows you to configure a few more properties than the *HTML* model.

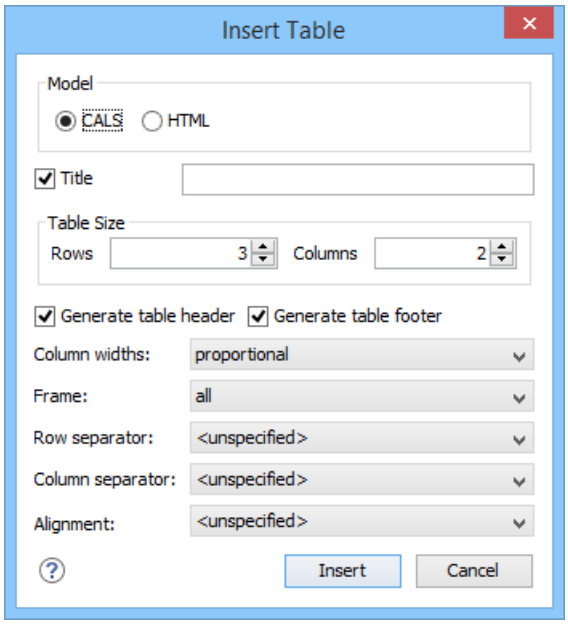


Figure 134: Insert Table Dialog Box - CALS Model

The dialog box allows you to configure the following options when you select the **CALS** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `colwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `colwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `colwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `colwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width (`colwidth` attribute). Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the **colspecs** (column specifications) section above the table or in **Text** mode. The following units are allowed: `pt` (points), `cm` (centimeters), `mm` (millimeters), `pi` (picas), `in` (inches).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook CALS table specifications.

Row separator

Specifies whether or not to include row separators (`rowsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Column separator

Specifies whether or not to include column separators (`colsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for DocBook documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a CALS table is inserted into your document at the current cursor position.

When you insert a CALS table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

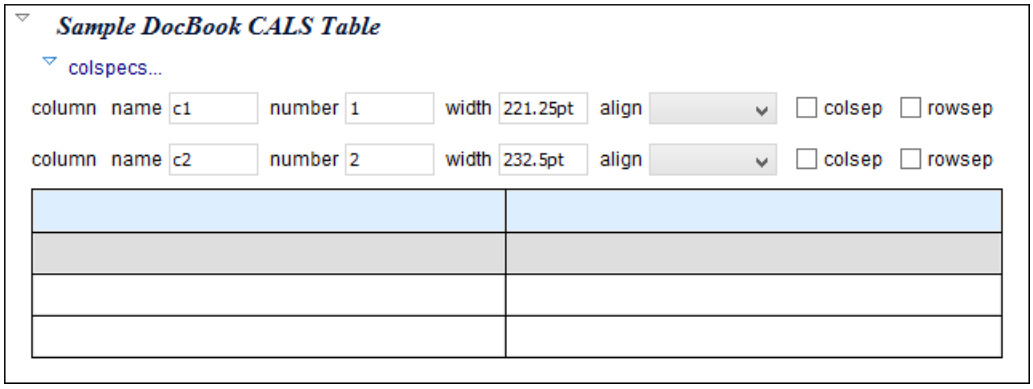


Figure 135: CALS Table in DocBook

Inserting an HTML Table Model

To insert an *HTML* table model in DocBook documents, select the **Insert Table** action on the toolbar or from the contextual menu. The **Insert Table** dialog box appears. Select **HTML** for the table **Model**.

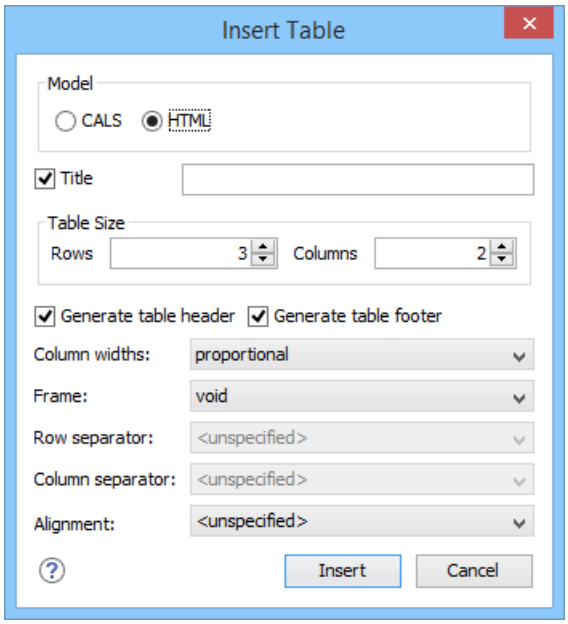


Figure 136: Insert Table Dialog Box - Simple Model

The dialog box allows you to configure the following options when you select the **HTML** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`width` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `width` attribute (in a `col` element) with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `width="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `width` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `width` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the section above the table or in **Text** mode. In addition to the standard pixel, percentage, and relative values, this attribute also allows the special form “0*” (zero asterisk), which means that the width of the each column in the group should be the minimum width necessary to hold the contents.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook HTML table specifications.

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for DocBook documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, an HTML style of table is inserted into your document at the current cursor position.

When you insert an HTML table, you see a section above the table that allows you to easily configure some properties without opening the **Table Properties** dialog box. Although this section appears as part of the **Author** mode, it will not appear in your output. It is just there to make it easier to adjust how the columns of your table are formatted.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**).

You can also use the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or contextual menu to modify many of the properties of the table.

Also, remember that underneath the visual representation, both table models are really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

DocBook Table Layouts

The DocBook *framework* supports the following two table model layouts:

- *CALS* table model
- *HTML* table model

CALS Table Model Layout

The **CALS** table model allows for more flexibility and table customization than other models. When choosing a **CALS** table model from the **Insert Table** dialog box, you have access to more configurable properties. The layout of a **CALS** table includes a **colspecs** section that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`colwidth` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

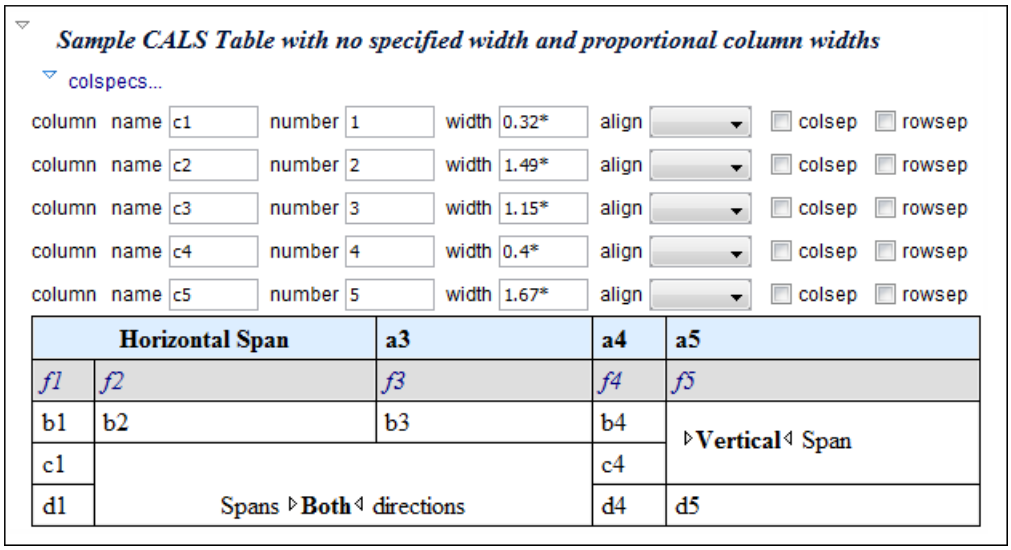


Figure 137: CALS Table in DocBook

HTML Table Model Layout

Choosing an **HTML** table model from the **Insert Table** dialog box in a DocBook document inserts a formal (captioned) HTML table. The layout of an *HTML* table includes a section above the table that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`width` attribute) or the text alignment (`align` attribute). Although these properties appear as part of the **Author** mode, they will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

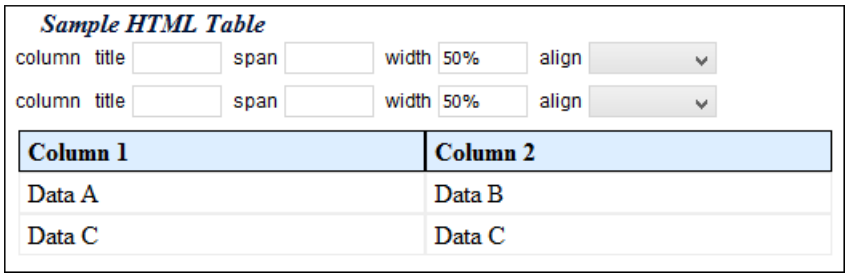


Figure 138: HTML Table in DocBook

Pasting Tables in DocBook

Tables that are pasted into a DocBook file are automatically converted to the *CALS* model. If you want to overwrite this behavior and instruct Oxygen XML Editor plugin to convert them to *HTML* tables, set the `docbook.html.table` parameter to 1. You can find this parameter in the following stylesheet:

- *`[OXYGEN_INSTALL_DIR]`*`/frameworks/docbook/resources/xhtml2db5Driver.xsl` for DocBook 5
- *`[OXYGEN_INSTALL_DIR]`*`/frameworks/docbook/resources/xhtml2db4Driver.xsl` for DocBook 4

Table Validation in DocBook

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations. The types of errors that may be reported for DocBook table layout problems include:

CALS Tables

- A row has fewer cells than the number of columns detected from the table `cols` attribute.
- A row has more cells than the number of columns detected from the table `cols` attribute.
- A cell has a vertical span greater than the available rows count.
- The number of `colspecs` is different than the number of columns detected from the table `cols` attribute.

- The number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- The value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- The `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

HTML Tables

- A row has fewer cells than the number of table columns.
- The value of the `colspan`, `rowspan`, or `span` attributes are not numeric.
- A cell has a vertical span greater than the available rows count.

Editing Table Properties in DocBook

You can edit the structure of an existing table using the table buttons on the toolbar (or from the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**).

You can use the **Table Properties (Ctrl + T (Command + T on OS X))** action to modify many of the properties of the table. You can also adjust some of the properties in the specification section above the table.

The **Table properties** dialog box allows you to set specific properties to the table elements. The options that are available depend on the context and location within the table in which the action was invoked.

Note: Some properties allow the following special values, depending on the context and the current properties or values:

- **<not set>** - Use this value if you want to remove a property.
- **<preserve>** - If you select multiple elements that have the same property set to different values, you can choose this value to keep the values that are already set. In some cases it can also be used to keep the current non-standard value for a particular property.

Edit Table Properties for a CALS Table Model

For a **CALS** table model, the **Table properties** dialog box includes four tabs of options:

- **Table** tab - The options in this tab apply to the entire table.
- **Row** tab - The options in this tab apply to the current row or selection of multiple rows. A message at the bottom of the tab tells you how many rows will be affected.
- **Column** tab - The options in this tab apply to the current column or selection of multiple columns. A message at the bottom of the tab tells you how many columns will be affected.
- **Cell** tab - The options in this tab apply to the current cell or selection of multiple cells. A message at the bottom of the tab tells you how many cells will be affected.

The options in four tabs include a **Preview** pane that shows a representation of the modification.

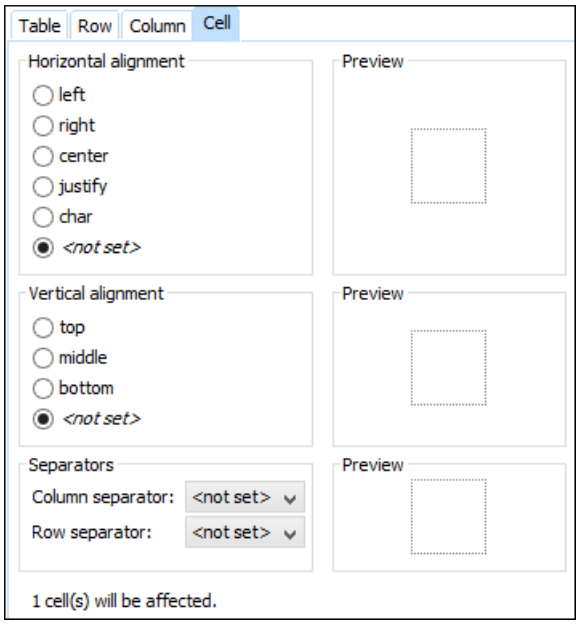


Figure 139: Table Properties Dialog Box with Cell Tab Selected (DocBook CALS Table Model)

The options in the four tabs include the following:

Horizontal alignment (Available in the Table, Column, and Cell tabs)

Specifies the horizontal alignment of text within the current table/column/cell or selection of multiple columns/cells (`align` attribute). The allowed values are as follows:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Vertical alignment (Available in the Row and Cell tabs)

Specifies the vertical alignment of text within the current row/cell or selection of multiple rows/cells (`valign` attribute). The allowed values are as follows:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.

Column separator (Available in the Table, Column, and Cell tabs)

Specifies whether or not to include column separators (borders/grid lines) in the form of the `colsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Row separator (Available in all four tabs)

Specifies whether or not to include row separators (borders/grid lines) in the form of the `rowsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook CALS table specifications.

Row type (Available in the Row tab only)

Allows you change the row to a header, body, or footer type of row (within a `thead`, `tbody`, or `tfoot` attribute).

Edit Table Properties for an HTML Table Model

For an **HTML** table model, the **Table properties** dialog box includes four tabs of options (**Table**, **Row**, **Column**, and **Cell**) and the options include a **Preview** pane that shows a representation of the modification.

The options in the four tabs include the following:

Frame (Available only in the Table tab)

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook HTML table specifications.

Row type (Available in the Row tab only)

Allows you change the row to a header, body, or footer type of row (within a `thead`, `tbody`, or `tfoot` attribute).

Horizontal alignment (Available in the Row, Column, and Cell tabs)

Specifies the horizontal alignment for the text in the current row/column/cell or selection of multiple rows/columns/cells (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Vertical alignment (Available in the Row, Column, and Cell tabs)

Specifies the vertical alignment for the text in the current row/column/cell or selection of multiple rows/columns/cells (`valign` attribute). The allowed values are:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.
- **baseline** - Sets the row so that all the table data share the same baseline. This often has the same effect as the `bottom` value. However, if the fonts are different sizes, the `baseline` value often makes the table look better.

Related Information:

Editing Tables in Author Mode on page 499

Adding Tables in DITA Topics

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a DITA topic. By default, DITA supports four types of tables:

- DITA *Simple* table model - This is the most commonly used model for basic tables.
- CALS table model (OASIS Exchange Table Model) - This is used for more advanced functionality.
- DITA *Choice* table model - This is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding.
- DITA *Properties* table model - This is used in DITA Reference documents to describe a property (for example, its type, value, and description).

If you are using a specialized DITA vocabulary, it may contain specialized versions of these table models.

Since DITA is a structured format, you can only insert a table in places in the structure of a topic where tables are allowed. The Oxygen XML Editor plugin toolbar provides support for entering and editing tables. It also helps to indicate where you are allowed to insert a table or its components by disabling the appropriate buttons.

Inserting a Simple Table Model

To insert a **Simple** DITA table, select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

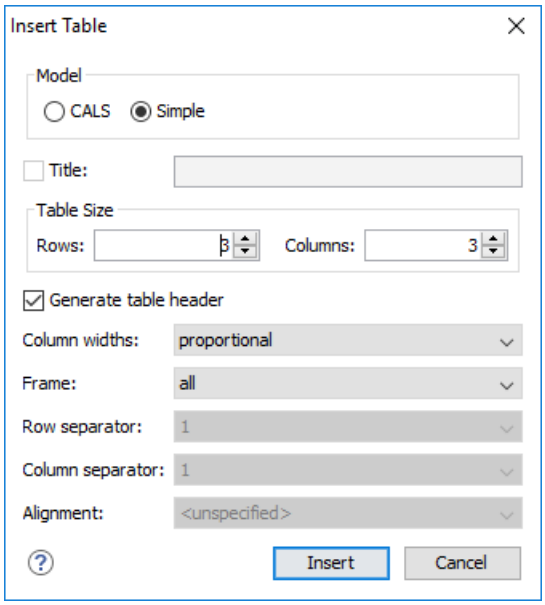


Figure 140: Insert Table Dialog Box - Simple Model

The dialog box allows you to configure the following options when you select the **Simple** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a simple table is inserted into your document at the current cursor position.

Inserting a CALS Table Model (OASIS Exchange Table)

To insert an OASIS Exchange Table (**CALS**), select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **CALS** for the table **Model**. This model allows you to configure more properties than the *Simple* model.

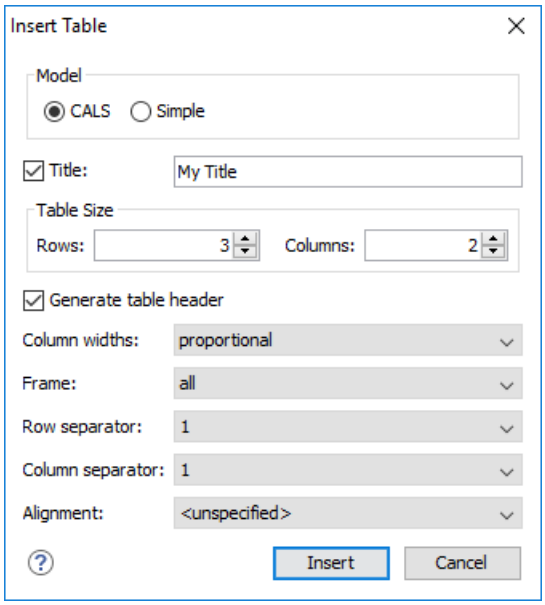


Figure 141: Insert Table Dialog Box - CALS Model

The dialog box allows you to configure the following options when you select the **CALS** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `colwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `colwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `colwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `colwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width (`colwidth` attribute). Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the **colspecs** (column specifications) section above the table or in **Text** mode. The following units are allowed: `pt` (points), `cm` (centimeters), `mm` (millimeters), `pi` (picas), `in` (inches).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row separator

Specifies whether or not to include row separators (`rowsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Column separator

Specifies whether or not to include column separators (`colsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a CALS table is inserted into your document at the current cursor position.

When you insert a CALS table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

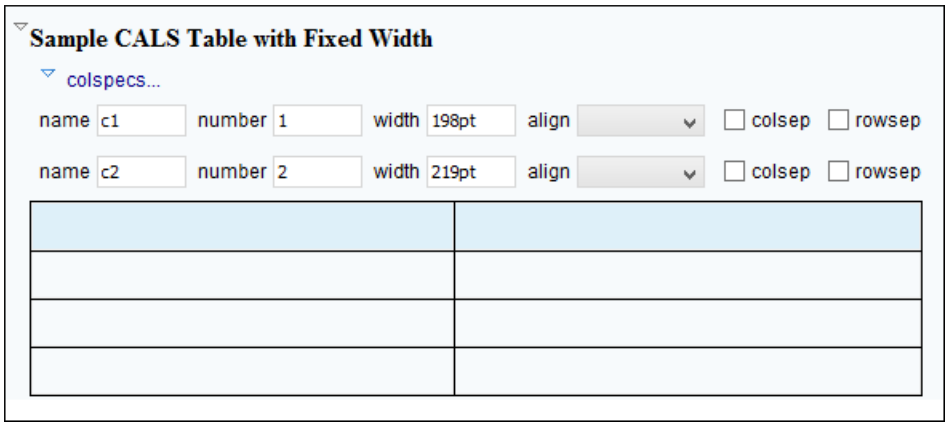


Figure 142: CALS Table in DITA

Inserting a Choice Table Model

To insert a **Choice** table within a `step` element in a DITA Task document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **choicetable** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

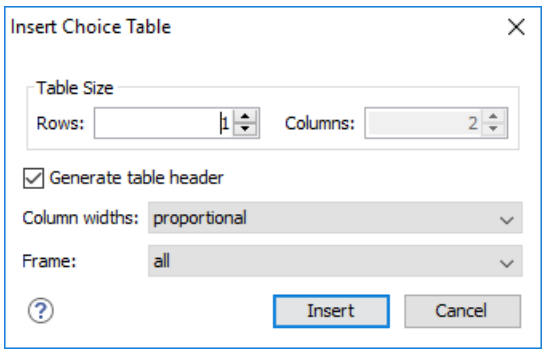


Figure 143: Insert Table Dialog Box - Choice Model

The dialog box allows you to configure the following options when you insert a *Choice* table model within a DITA Task:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in

Author mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Choice* table is inserted into your DITA Task document at the current cursor position (within a `step` element).

Inserting a Properties Table Model

To insert a **Properties** table within a `refbody` element in a DITA Reference document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **properties(wizard)** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Properties** for the table **Model**.

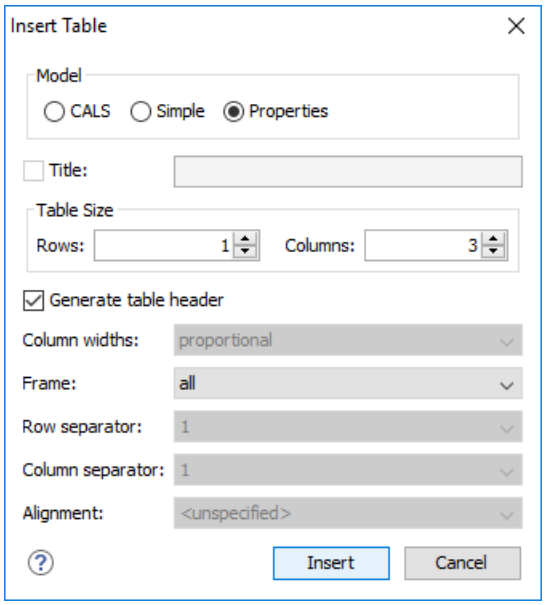


Figure 144: Insert Table Dialog Box - Properties Model

The dialog box allows you to configure the following options when you insert a *Properties* table model within a DITA Reference:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Properties* table is inserted into your DITA Reference document at the current cursor position (within a `refbody` element).

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). See the DITA documentation for a full explanation of these attributes.

You can also use the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or contextual menu (or **DITA** menu) to modify many of the properties of the table.

Also, remember that underneath the visual representation, both table models are really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

Related Information:

Editing Tables in Author Mode on page 499

DITA Table Layouts

Depending on the context, DITA accepts the following table layouts:

- *CALS* table model
- *Simple* table model
- *Choice* table model
- *Properties* table model

CALS Table Model Layout

The **CALS** table model allows for more flexibility and table customization than other models. When choosing a **CALS** table model from the **Insert Table** dialog box, you have access to more configurable properties. The layout of a **CALS** table includes a **colspecs** section that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`colwidth` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

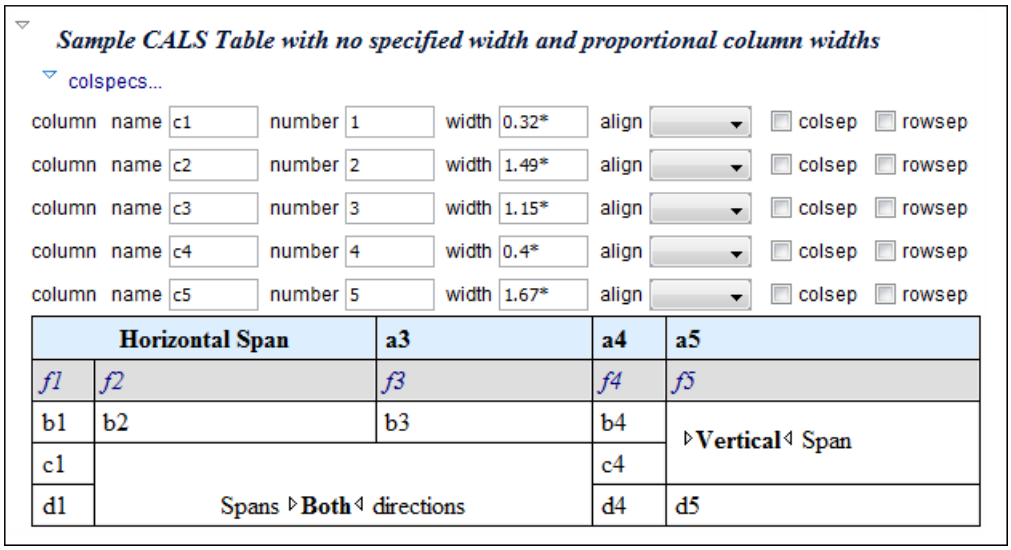


Figure 145: CALS Table in DITA

Simple Table Model Layout

When choosing a **Simple** table model from the **Insert Table** dialog box, you only have access to configure a few properties. For example, you can choose the number of rows and columns, specify values for frames, and choose from a few types of properties for the column width. The layout of this type of table is very simple, as the name suggests.

Header 1	Header 2
Column 1	Column 2

Figure 146: DITA Simple Table

Choice Table Model Layout

A **Choice** table model is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding. The `choicetable` element is a useful device for documenting options within a single step of a task. You can insert *Choice* tables in DITA Task documents either by selecting **choicetable** from the *Content Completion Assistant* (within a `step` element) or by using the **Insert Table** action on the toolbar or from the contextual menu). The options and layout of a *Choice* table is similar to the *Simple* table model.

Option	Description
Opt A	
Opt B	
Opt C	

Figure 147: DITA Choice Table

Properties Table Model Layout

A **Properties** table model is used within a `refbody` element in a DITA Reference document to describe a property (for example, its type, value, and description). You can insert *Properties* tables in DITA Reference documents either by selecting **properties(wizard)** from the *Content Completion Assistant* (within a `refbody` element) or by using the **Insert Table** action on the toolbar (or from the contextual menu) and selecting **Properties** for the **Model**. The layout of a *Properties* table is very simple. It allows for a maximum of 3 columns (typically for property type, value, and description) and the only options available are for whether or not you want a header row and for specifying frames (borders).

Property Type	Property Value	Property Description
A	B	C

Figure 148: DITA Properties Table

Table Validation in DITA

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations.

When you validate a *DITA map* with the **Validate and Check for Completeness** action, if the **Report table layout problems** option is selected in the **DITA Map Completeness Check** dialog box, table layout problems will be reported in the validation results. The types of errors that may be reported for DITA table layout problems include:

CALS Tables

- A row has fewer cells than the number of columns detected from the table `cols` attribute.
- A row has more cells than the number of columns detected from the table `cols` attribute.
- A cell has a vertical span greater than the available rows count.
- The number of `colspecs` is different than the number of columns detected from the table `cols` attribute.
- The number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- The value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- The `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

Simple or Choice Tables

- A row has fewer cells than the number of table columns.

Editing Table Properties in DITA

To customize the look of a table in DITA, place the cursor anywhere in a table and invoke the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or the **Table** submenu of the contextual menu (or **DITA** menu). This opens the **Table properties** dialog box.

The **Table properties** dialog box allows you to set specific properties to the table elements. The options that are available depend on the context and location within the table in which the action was invoked.

Note: Some properties allow the following special values, depending on the context and the current properties or values:

- **<not set>** - Use this value if you want to remove a property.
- **<preserve>** - If you select multiple elements that have the same property set to different values, you can choose this value to keep the values that are already set. In some cases it can also be used to keep the current non-standard value for a particular property.

Edit Table Properties for a CALS Table Model

For a **CALS** table model, the **Table properties** dialog box includes four tabs of options:

- **Table** tab - The options in this tab apply to the entire table.
- **Row** tab - The options in this tab apply to the current row or selection of multiple rows. A message at the bottom of the tab tells you how many rows will be affected.
- **Column** tab - The options in this tab apply to the current column or selection of multiple columns. A message at the bottom of the tab tells you how many columns will be affected.
- **Cell** tab - The options in this tab apply to the current cell or selection of multiple cells. A message at the bottom of the tab tells you how many cells will be affected.

The options in four tabs include a **Preview** pane that shows a representation of the modification.

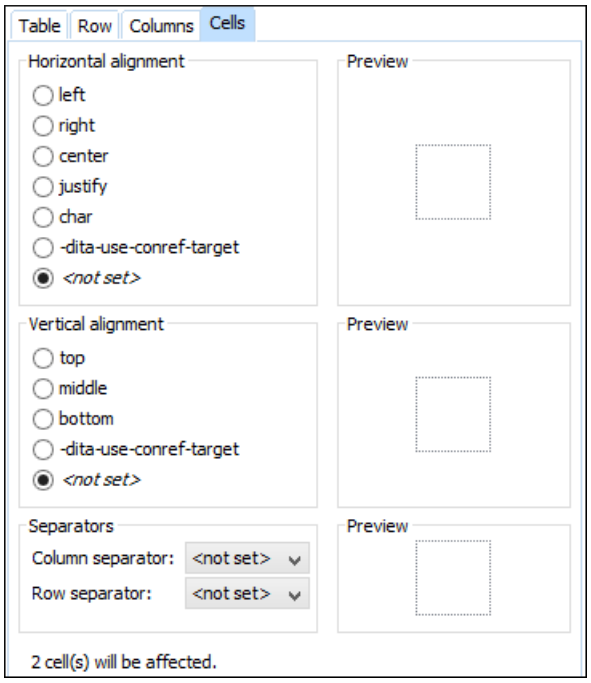


Figure 149: Table Properties Dialog Box with Cell Tab Selected (DITA CALS Table Model)

The options in the four tabs include the following:

Horizontal alignment (Available in the Table, Column, and Cell tabs)

Specifies the horizontal alignment of text within the current table/column/cell or selection of multiple columns/cells (`align` attribute). The allowed values are as follows:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Vertical alignment (Available in the Row and Cell tabs)

Specifies the vertical alignment of text within the current row/cell or selection of multiple rows/cells (`valign` attribute). The allowed values are as follows:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Column separator (Available in the Table, Column, and Cell tabs)

Specifies whether or not to include column separators (borders/grid lines) in the form of the `colsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Row separator (Available in all four tabs)

Specifies whether or not to include row separators (borders/grid lines) in the form of the `rowsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Frame (Available only in the Table tab)

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Edit Table Properties for a Simple, Choice, or Properties Table Model

For a *Simple*, *Choice*, *Properties* table model, the **Table properties** dialog box only allows you to edit a few options.

Table tab

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row tab (not available for *Properties* tables)

Row type

Allows you change the row to a body or header type of row.

Related Information:

Adding Tables in DITA Topics on page 509
Editing Tables in Author Mode on page 499

Adding Tables in XHTML Documents

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in an XHTML document. This action opens the **Insert Table** dialog box.

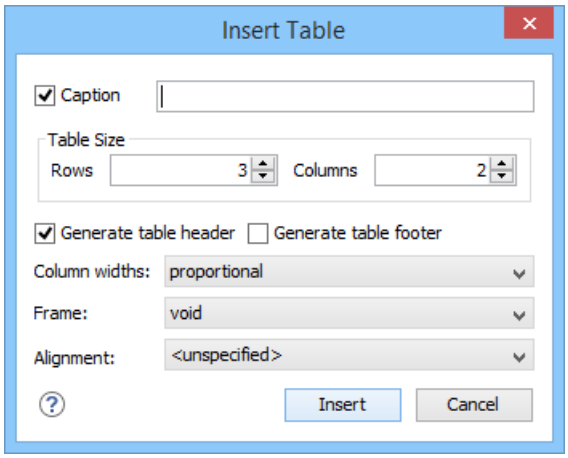


Figure 150: Insert Table Dialog Box in XHTML

The dialog box allows you to configure the following options:

Caption

If this checkbox is selected, you can specify a title (caption) for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`width` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `width` attribute (in a `col` element) with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `width="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `width` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `width` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the section above the table or in **Text** mode. In addition to the standard pixel, percentage, and relative values, this attribute also allows the special form “0*” (zero asterisk), which means that the width of the each column in the group should be the minimum width necessary to hold the contents.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in HTML specifications.

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.

- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for XHTML documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, an HTML style of table is inserted into your XHTML document at the current cursor position.

When you insert an HTML table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). Also, remember that underneath the visual representation, the table is really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

XHTML Table Layout

When you insert a table in an XHTML document, an HTML type of table is added. The layout of an *XHTML* table includes a **colspecs** section that allows you to easily configure some properties. For example, you can change the value of column widths (`width` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

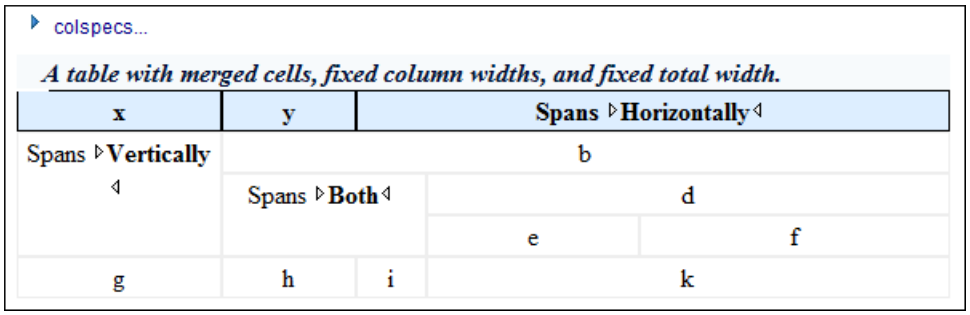


Figure 151: Table Layout in XHTML Documents

Table Validation in XHTML

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations. The types of errors that may be reported for XHTML table layout problems include:

HTML Tables

- A row has fewer cells than the number of table columns.
- The value of the `colspan`, `rowspan`, or `span` attributes are not numeric.
- A cell has a vertical span greater than the available rows count.

Adding Tables in TEI Documents

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a TEI document. This action opens the **Insert Table** dialog box.

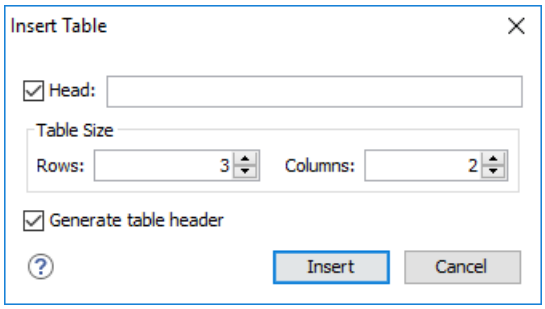


Figure 152: Insert Table Dialog Box in TEI

The dialog box allows you to configure the following options:

Head

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Note: The options in the **Insert Table** dialog box for TEI documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a simple table is inserted into your TEI document at the current cursor position.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). Also, remember that underneath the visual representation, the table is really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

Sorting Content in Tables and List Items

Oxygen XML Editor plugin offers support for sorting the content of tables and list items of ordered and unordered lists.

What do you want to do?

- Sort an entire table.
- Sort a selection of rows in a table.
- Sort a table that contains cells merged over multiple rows.
- Sort list items.

Sorting a Table

To sort rows in a table, select the entire table (or specific rows) and use the **Sort** action from the main toolbar or the contextual menu. This opens the **Sort** dialog box.

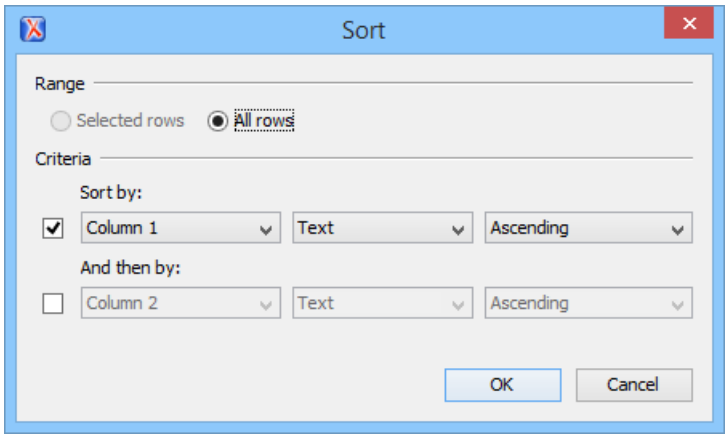


Figure 153: Sort Dialog Box

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire table or only a selection of its rows.

Note: When you invoke the sorting operation over an entire table, the **Selected rows** option is disabled.

The **Criteria** section specifies the sorting criteria (a maximum of three sorting criteria are available), defined by the following:

- A name, which is collected from the column heading.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

The sort criteria is automatically set to the column where the cursor is located at the time when the sorting operation is invoked.

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Sorting a Selection of Rows

To sort a selection of rows in a table, select the rows that you want to sort and either right-click the selection and choose **Sort**, or click **Sort** on the main toolbar. This opens the **Sort** dialog box.

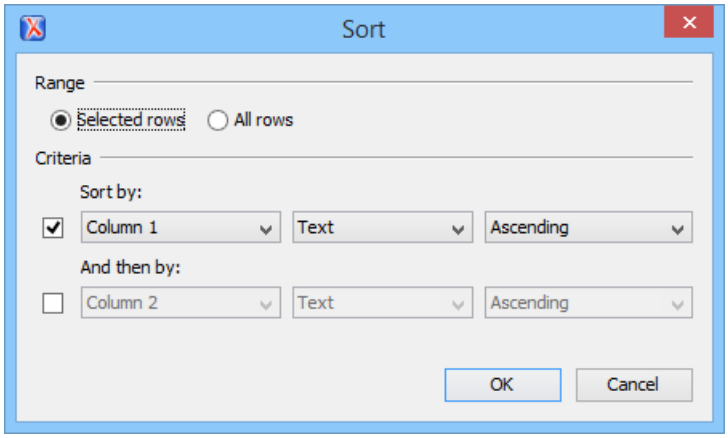


Figure 154: Sort Selected Rows

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire table or only a selection of its rows.

The **Sort** dialog box also allows you to apply the sorting operation to the entire table, using the **All rows** option.

The **Criteria** section specifies the sorting criteria (a maximum of three sorting criteria are available), defined by the following:

- A name, which is collected from the column heading.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

The sort criteria is automatically set to the column where the cursor is located at the time when the sorting operation is invoked.

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Sort Using Multiple Criteria

You can also sort an entire table or a selection of its rows based on multiple sorting criteria. To do so, select the rest of boxes in the **Criteria** section of the **Sort** dialog box, configure the applicable items, and click **OK** to complete the sorting operation.

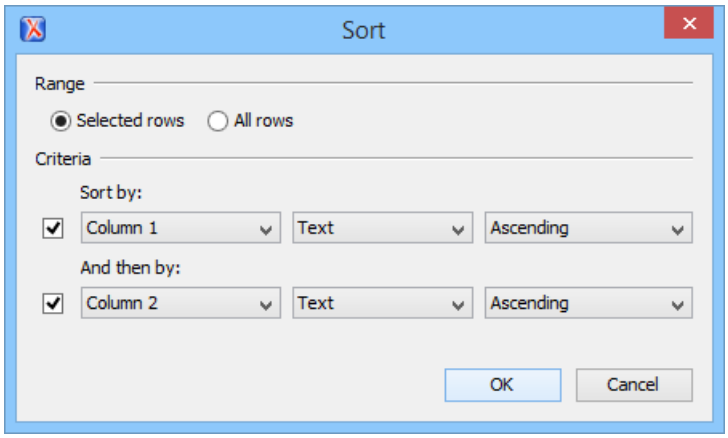


Figure 155: Sorting Based on Multiple Criteria

Sorting a Table that Contains Merged Cells

If a table contains cells that span over multiple rows, you can not perform the sorting operation over the entire table. Still, the sorting mechanism works over a selection of rows that do not contain *rowspans*.

Note: For this type of table, the **Sort** dialog box keeps the **All rows** option disabled even if you perform the sorting operation over a selection of rows.

Sorting List Items

A sorting operation can be performed on various types of lists and list items. Oxygen XML Editor plugin provides support for sorting the following types of lists:

- Ordered list (`ol`)
- Unordered list (`ul`)
- Parameter list (`parml`)

- Simple list (`sl`)
- Required conditions (`reqconds`)
- Supplies list (`supplyli`)
- Spare parts list (`sparesli`)
- Safety conditions (`safety`)
- Definitions list (`dl`)

The sorting mechanism works on an entire list or on a selection of list items. To sort items in a list, select the items or list and use the **Sort** action from the main toolbar or the contextual menu. This opens the **Sort** dialog box.

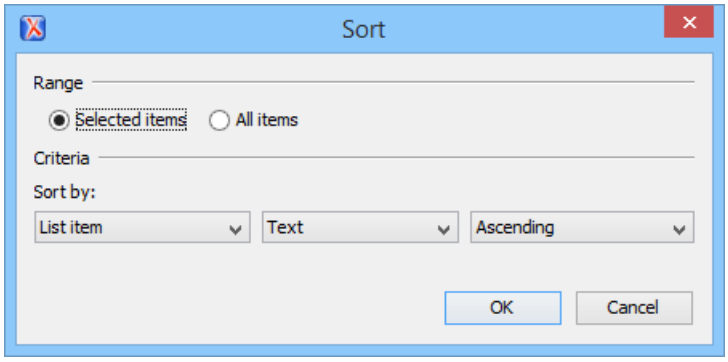


Figure 156: Sorting List Items

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire list or only a selection of its items.

Note: When you invoke the sorting operation over an entire list, the **Selected rows** option is disabled.

The **Criteria** section specifies the sorting criteria, defined by the following:

- The name of the type of item being sorted.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Inserting Images

To insert an image in a document while editing in **Author** mode, use one of the following methods:

- Click the **Insert Image** action from the toolbar. This opens a dialog box that allows you to choose the image file you want to insert and configure some properties. Oxygen XML Editor plugin tries to reference the image with a path that is relative to that of the document you are currently editing. For example, if you want to add the `file:/C:/project/xml/dir/img1.jpg` image into the `file:/C:/project/xml/doc1.xml` document, Oxygen XML Editor plugin inserts a reference to `dir/img1.jpg`. This is useful when multiple users work on a common project and they have it stored in multiple locations.

  Note: The **Insert Image** action is available for the following document types: DITA, DocBook, TEI, XHTML, JATS.

- Drag an image from other application and drop it in the **Author** editing mode. If it is an image file, it is inserted as a reference to the image file. For example, in a DITA topic the path of the image file is inserted as the value of the `href` attribute in an `image` element:

  ```
  <image href="../images/image_file.png"/>
  ```

  Tip: To replace an image, just drag and drop a new image over the existing one. Oxygen XML Editor plugin will automatically update the reference to the new image.
- Copy an image file from another document or another application (such as a system file browser or web browser) and paste it into your document. Oxygen XML Editor plugin will insert it as a reference to the image file the same as the drag/drop method.
- Select an image (or part of an image) from another application (such as an image editor), copy it, and paste it into your document. Oxygen XML Editor plugin will prompt you to save it. After saving the image, a reference to that file path is inserted at the paste position.

Related Information:

Image Map Editor on page 529
Image Rendering in **Author** Mode on page 526
Adding Video, Audio, and Embedded HTML Resources in DITA Topics on page 1511

Image Rendering in Author Mode

The **Author** mode and the output transformation process might render the images referenced in an XML document differently, since they use different rendering engines.

Table 3: Supported Image Formats

Image Type	Support	Additional Information
GIF	built-in	Animations not yet supported
JPG, JPEG	built-in	JPEG images with CMYK color profiles are properly rendered only if color profile is inside the image.
PNG	built-in	
SVG, SVGZ, WMF	built-in	Rendered using the open-source Apache Batik library that supports SVG 1.1.
BMP	built-in	
TIFF	built-in	Rendered using a part of the Java JAI Image library.
EPS	built-in	Renders the preview TIFF image inside the EPS.
AI	built-in	Renders the preview image inside the Adobe Illustrator file.
JPEG 2000, WBMP	plugin	Renders by installing the *Java Advanced Imaging (JAI) Image I/O Tools* plug-in.
PDF	plugin	Renders by installing the Apache PDF Box library.

When an image cannot be rendered, Oxygen XML Editor plugin **Author** mode displays a warning message that contains the reason why this is happening. Possible causes include the following:

- The image is too large. Select the **Show very large images** option.
- The image format is not supported by default. It is recommended to install the *Java Advanced Imaging(JAI) Image I/O Tools* plug-in.

Scaling Images

Image dimension and scaling attributes are taken into account when an image is rendered. The following rules apply:

- If you specify only the width attribute of an image, the height of the image is proportionally applied.

- If you specify only the height attribute of an image, the width of the image is proportionally applied.
- If you specify width and height attributes of an image, both of them control the rendered image.
- If you want to scale both the width and height of an image proportionally, use the `scale` attribute.

Note: As a Java application, Oxygen XML Editor plugin uses the *Java Advanced Imaging* API that provides a pluggable support for new image types. If you have an *ImageIO* library that supports additional image formats, just copy this library to the *[OXYGEN_INSTALL_DIR]*`/lib` directory.

Rendering CGM Images (Experimental Support)

Oxygen XML Editor plugin offers a few add-ons that provide experimental support for CGM 1.0 images. To allow the rendering of CGM images in **Author** mode, go to https://github.com/oxygenxml/oxygenxml.cgm.support.eclipse and follow the instructions.

Rendering PDF Images

Starting with Oxygen XML Editor plugin version 20.0, PDF images are rendered in **Author** mode and PDF output. For previous versions, they are not rendered by default. To add such support in previous versions, you need to add the *Apache PDFBox* library:

Manually Adding the ApachePDFBox Libraries

To manually add the *Apache PDFBox* library so that PDF images are rendered in **Author** mode, follow this procedure:

1. Go to http://pdfbox.apache.org/downloads.html and download the pre-built PDFBox standalone binary *JAR* files: **`pdfbox-2.0.3.jar`**, **`fontbox-2.0.3.jar`**, and **`xmpbox-2.0.3.jar`**. Alternatively, you can use the `1.8.12` version of these files, as they have been tested and work properly.

   Note: It is not recommended to use `pdfbox-app-2.0.3.jar` file instead of the three specified files because it contains additional classes that may cause conflicts elsewhere in Oxygen XML Editor plugin.
2. Create a subfolder called `pdfImageJars` in the *[OXYGEN_INSTALL_DIR]*`\lib` directory.
3. Copy the downloaded *JAR* libraries to that newly created subfolder.
4. Open `OXYGEN_PLUGIN_DIR/META-INF/MANIFEST.MF` and add a reference to the *JAR* libraries in the `Bundle-ClassPath` entry.
5. Restart Eclipse in clean mode (edit the shortcut you use to start Eclipse and add `-clean` as the first argument.)

Rendering PSD Images

Oxygen XML Editor plugin provides support for rendering PSD (Adobe Photoshop) images.

To allow the rendering of PSD images in **Author** mode, follow this procedure:

1. Download the following *JAR* files:
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-lang/3.1.0/common-lang-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-io/3.1.0/common-io-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-image/3.1.0/common-image-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-core/3.1.0/imageio-core-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-metadata/3.1.0/imageio-metadata-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-psd/3.1.0/imageio-psd-3.1.0.jar
2. Copy the downloaded *JAR* libraries to the *[OXYGEN_INSTALL_DIR]*`\lib` directory.
3. Open `OXYGEN_PLUGIN_DIR/META-INF/MANIFEST.MF` and add a reference to the *JAR* libraries in the `Bundle-ClassPath` entry.
4. Restart Eclipse in clean mode (edit the shortcut you use to start Eclipse and add `-clean` as the first argument.)

Rendering EPS and AI Images

Most EPS and AI image files include a preview picture of the content. Oxygen XML Editor plugin tries to render this preview picture. The following scenarios are possible:

- The EPS or AI image does not include the preview picture. Oxygen XML Editor plugin cannot render the image.
- The EPS image includes a TIFF preview picture.

  Note: Some newer versions of the TIFF picture preview are rendered in gray-scale.
- The AI image contains a JPEG preview picture. Oxygen XML Editor plugin renders the image correctly.

Rendering Special Images with Java Advanced Imaging (JAI) Plugin

Certain special image types can be rendered in Oxygen XML Editor plugin by using a Java Advanced Imaging (JAI) Image I/O Tools plugin.

How to Install JAI Image I/O Tools Plugin

To install this plug, follow this procedure:

1. Start Oxygen XML Editor plugin and open the **Help** > **About** dialog box. Click the **Installation Details** button, go to the **Configuration** tab, and look for the *java.runtime.name* and *java.home* properties. Keep their values for later use.
2. Download the JAI Image I/O kit corresponding to your operating system and Java distribution (found in the *java.runtime.name* property). A list of archived JAI distributions can be found at: http://www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-java-client-419417.html.

   Note: The JAI API is not the same thing as JAI Image I/O. Make sure you have installed the latter.
3. Run the installer. When the installation wizard displays the **Choose Destination Location** page, fill-in the **Destination Folder** field with the value of the *java.home* property. Continue with the installation procedure and follow the on-screen instructions.

OS X Workaround

There is no native implementation of the JAI Image I/O Tools plugin for OS X 10.5 and later. However, it has a Java implementation fallback that also works on OS X. Some of the image formats are not fully supported in this fallback mode, but at least the TIFF image format is known to be supported.

Use the following procedure for this OS X workaround:

1. Download a Linux (`tar.gz`) distribution of the JAI Image I/O Tools plugin. A list of archived JAI distributions can be found at: http://www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-java-client-419417.html.
2. In the *[OXYGEN_INSTALL_DIR]*`/lib` directory, create a directory named `endorsed` (*[OXYGEN_INSTALL_DIR]*`/lib/endorsed`).
3. Unpack the `tar.gz`. Copy the `clibwrapper_jiio.jar` and `jai_imageio.jar` files from its `lib` directory and paste them in the *[OXYGEN_INSTALL_DIR]*`/lib/endorsed` directory.
4. Restart the application and the JAI Image I/O support will be up and running.

Retina/HiDPI Images in Author Mode

Oxygen XML Editor plugin provides support for Retina and HiDPI images through simple naming conventions. The higher resolution images are stored in the same images folder as the normal resolution images and they are identified by a scaling factor that is included in the name of the image files. For instance, images with a Retina scaling factor of 2 will include *@2x* in the name (for example, `myImage@2x.png`).

You can reference an image to style an element in a CSS by using the `url` function in the `content` property, as in the following example:

```
listItem:before{
   content: url('../img/myImage.png');
}
```

This would place the image that is loaded from the `myImage.png` file just before the `listItem` element. However, if you are using a Retina display (on a Mac), the icon looks a bit blurry as it automatically gets scaled, or

if you are using an HiDPI display (on a Windows-based PC), the icon remains at the original size, thus it will look very small. To solve this rendering problem, you need to be able to reference both a *normal* DPI image and a *high* DPI image. However, referencing both of them from the CSS is not practical, as there is no standard way of doing this.

Starting with version 17, Oxygen XML Editor plugin interprets the argument of the `url` function as key rather than a fixed URL. Therefore, when running on a system with a Retina or HiDPI display, Oxygen XML Editor plugin will first try to find the image file that corresponds to the retina scaling factor. For instance, using the previous example, Oxygen XML Editor plugin would first try to find `myImage@2x.png`. If this file is not found, it defaults back to the *normal* resolution image file (`myImage.png`).

Oxygen XML Editor plugin also supports dark color themes. This means that the background of the editor area can be of a dark color and the foreground a lighter color. On a dark background, you may find it useful to invert the colors of images. Again, this can be done with simple naming conventions. If an image designed for a dark background is not found, the *normal* image is used.

Retina/HiDPI Naming Convention

Refer to the following table for examples of the Retina/HiDPI image naming convention that is used in Oxygen XML Editor plugin:

Color Theme	Referred Image File	Double Density Image File	Triple Density Image File
normal	../img/myImage.png	../img/myImage@2x.png	../img/myImage@3x.png
dark	../img/myImage_dark.png	../img/myImage_dark@2x.png	../img/myImage_dark@3x.png

Related Information:

Adding Retina/HiDPI Icons in a Framework on page 1257

Image Map Editor

Oxygen XML Editor plugin includes an **Image Map Editor** that allows you to create hyperlinks in specific areas of an image that will link to various destinations. For example, an image that is a map of the seven continents may have a specific hyperlink for each continent that links to a resource that has information about the particular continent. The main purpose of an **image map** is to provide an easy way of linking various parts of an image without having to divide the image into separate image files.

The support for image maps in Oxygen XML Editor plugin is available for images in DITA, DocBook, TEI, and XHTML document types (*frameworks*). To create an image map on an existing image and open the **Image Map Editor**, right-click the image and select **Image Map Editor**.

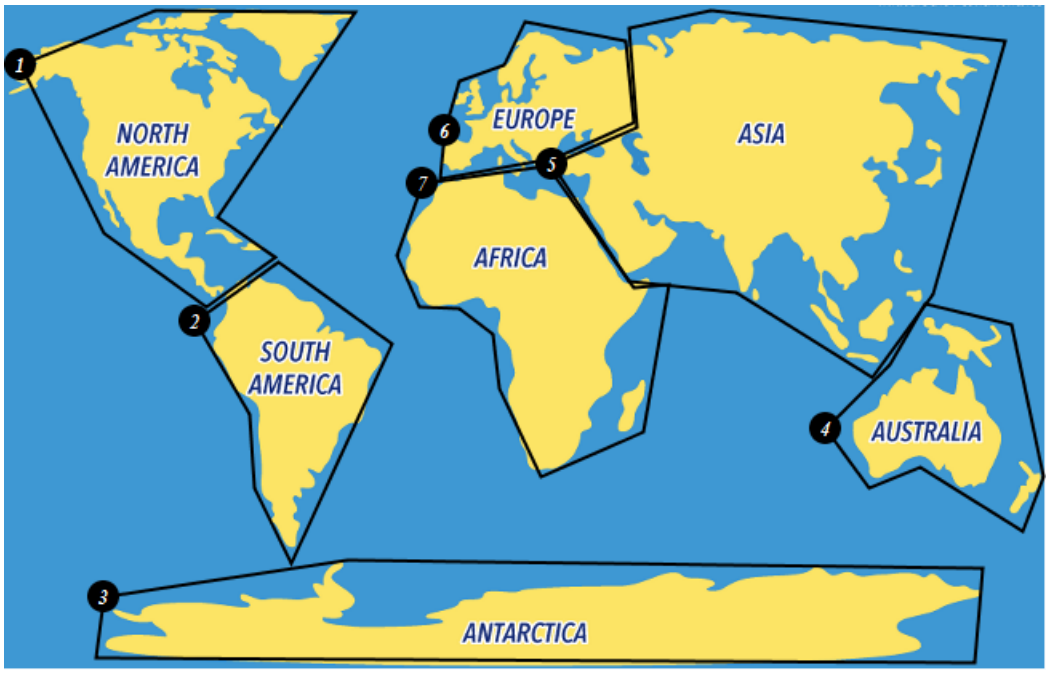


Figure 157: Image Map Rendered in Author Mode

Image Maps in DITA

Oxygen XML Editor plugin includes support for **image maps** in DITA documents through the use of the `imagemap` element. This feature provides an easy way to create hyperlinks in various areas within an image without having to divide the image into separate image files. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

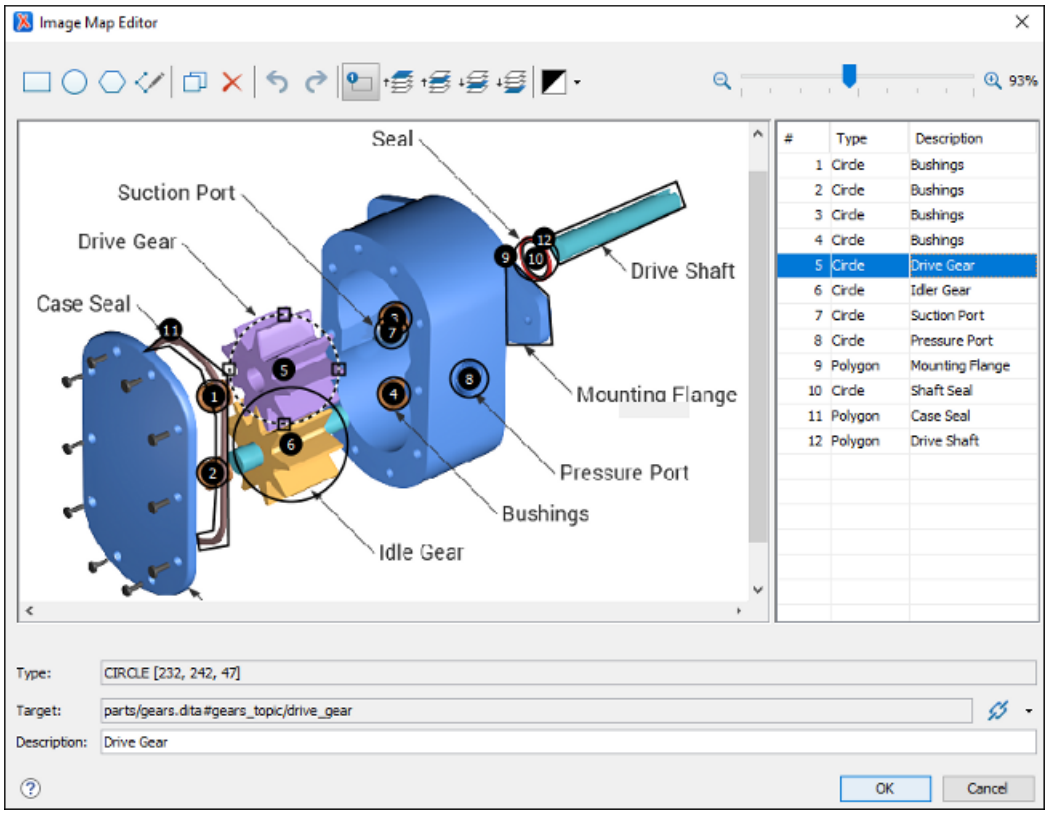


Figure 158: Image Map Editor in DITA

Image Map Editor Interface in DITA

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Use this button to draw a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Creates a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and description (if one has been added). If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

Target

Allows you to choose the target resource that you want the selected area (shape) to be linked to. Select a target by using the **Link** drop-down menu to the right of the text field. You can choose between the following types of links: **Cross Reference**, **File Reference**, or **Web Link**. All three types will open a dialog box that allows you to define the target resource. This linking process is similar to the normal process of inserting links in DITA by using the identical **Link** drop-down menu from the main toolbar.

When you click **OK** to finalize your changes in the **Image Map Editor**, an `xref` element will be inserted with either an `href` attribute or a `keyref` attribute. Additional attributes may also be inserted and their values depend on the target and the type of link. For details about the three types of links and their dialog boxes, see Inserting a Link in Oxygen XML Editor plugin on page 1564.

Description

You can enter an optional description for the selected area (shape) that will be displayed in the **Image Map Details** section in **Author** mode and as a tooltip message when the end user hovers over the hyperlink in the output.

How to Create an Image Map in DITA

To create an image map on an existing image in a DITA document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting one of the shape buttons (**New Rectangle**, **New Circle**, or **New Polygon**).
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
4. With the shape selected, use one of the linking options in the **Link** drop-down menu to select a target resource (or enter its path in the **Target** text field).
5. (Optional) Enter a **Description** for the selected area (shape).
6. If you want to add more hyperlinks to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image. If the image includes an `alt` element, its value will be displayed under the image. The following two buttons will also now be available under the image in **Author** mode:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

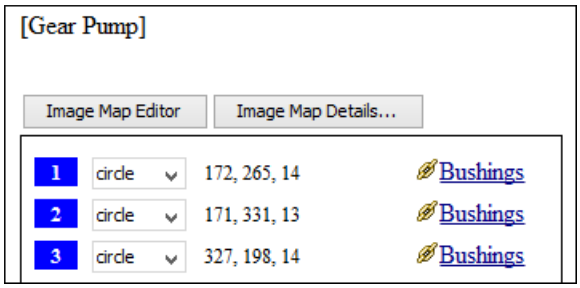


Figure 159: Image Map Details

How to Edit an Existing Image Map in DITA

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button below the image to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Related Information:

DITA 'imagemap' Element Specifications

Adding Images in DITA Topics on page 1509

Image Maps in DocBook

Oxygen XML Editor plugin includes support for **image maps** in DocBook documents through the use of the `areaspec` element. This feature provides an easy way to create hyperlinks in various parts of an image without having to divide the image into separate image files. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

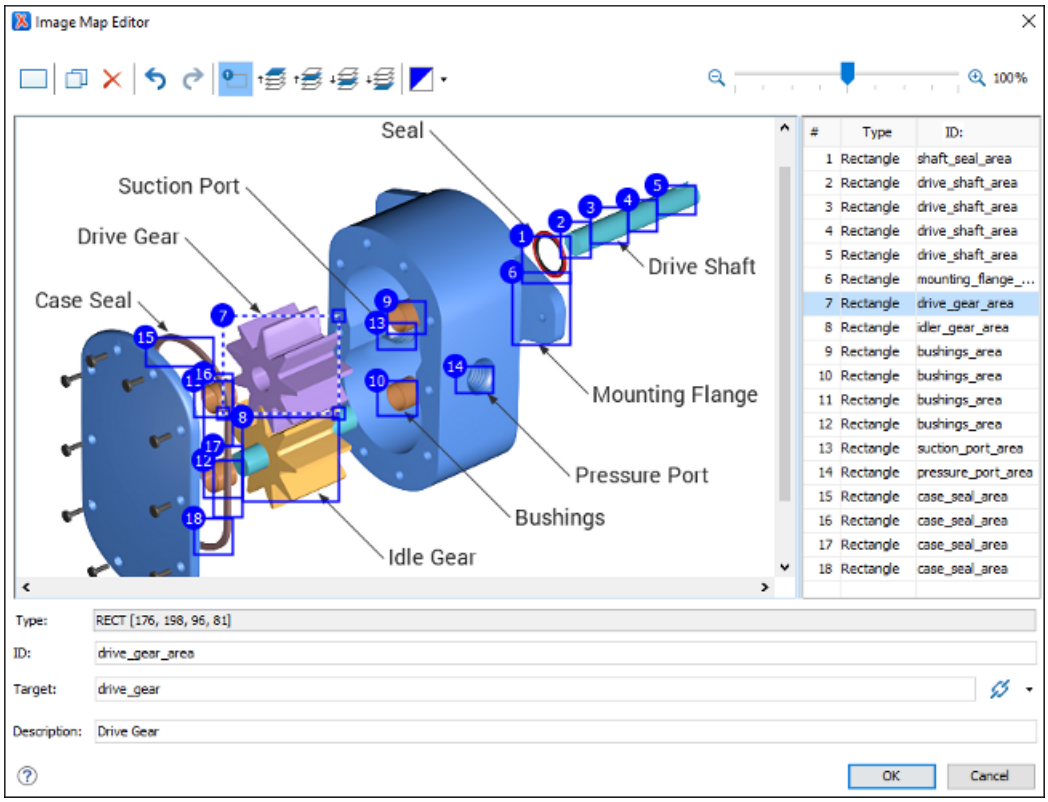


Figure 160: Image Map Editor in DocBook

Image Map Editor Interface in DocBook

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and ID. If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

ID

The identifier for the selected area. This will become the value of the `xml:id` attribute for the particular `area` element.

Target

Allows you to choose the target resource that you want the selected area to be linked to. You can enter the path to the target in the text field but the easiest way to select a target is to use the **Link** drop-down menu to the right of the text field. You can choose between the following types of links: **Cross Reference** or **Web Link**. Both types open a dialog box that allows you to select the target resource and it is inserted as the value of an `xlink:href` attribute.

Description

You can enter an optional description for the selected area that will be displayed in the **Image Map Details** section in **Author** mode and as a tooltip message when the end user hovers over the hyperlink in the output.

How to Create an Image Map in DocBook

To create an image map on an existing image in a DocBook document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting the **New Rectangle** button.
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the shapes or anywhere in the Image Pane to access various helpful contextual menu actions.
4. With the shape selected, enter an **ID** and use one of the linking options in the **Link** drop-down menu to select a target resource (or enter its path in the **Target** text field).
5. (Optional) Enter a **Description** for the selected area (shape).
6. If you want to add more hyperlinks to the image, select **New Rectangle** button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image. If the image includes an `alt` element, its value will be displayed above the image. The following two buttons will also now be available at the top of the image in **Author** mode:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map.

How to Edit an Existing Image Map in DocBook

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button above the image to expand a section that displays the details of the image map and allows you to change the coordinates and IDs of the hyperlinked areas.

Note: If you want to link a set of related `area` elements, you can use `areaset` elements. To add `areaset` elements, and `area` elements to the *areasets*, switch to **Text** mode and insert them manually.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Related Information:

DocBook 'areaspec' Element Specifications

Image Maps in TEI

Oxygen XML Editor plugin includes support for **image maps** in TEI documents through the use of the `facsimile` element. In TEI documents, this feature provides an easy way to create areas (using `zone` elements) in an image where the end user can hover or click to retrieve more information about that particular area of the image. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create the areas in the image.

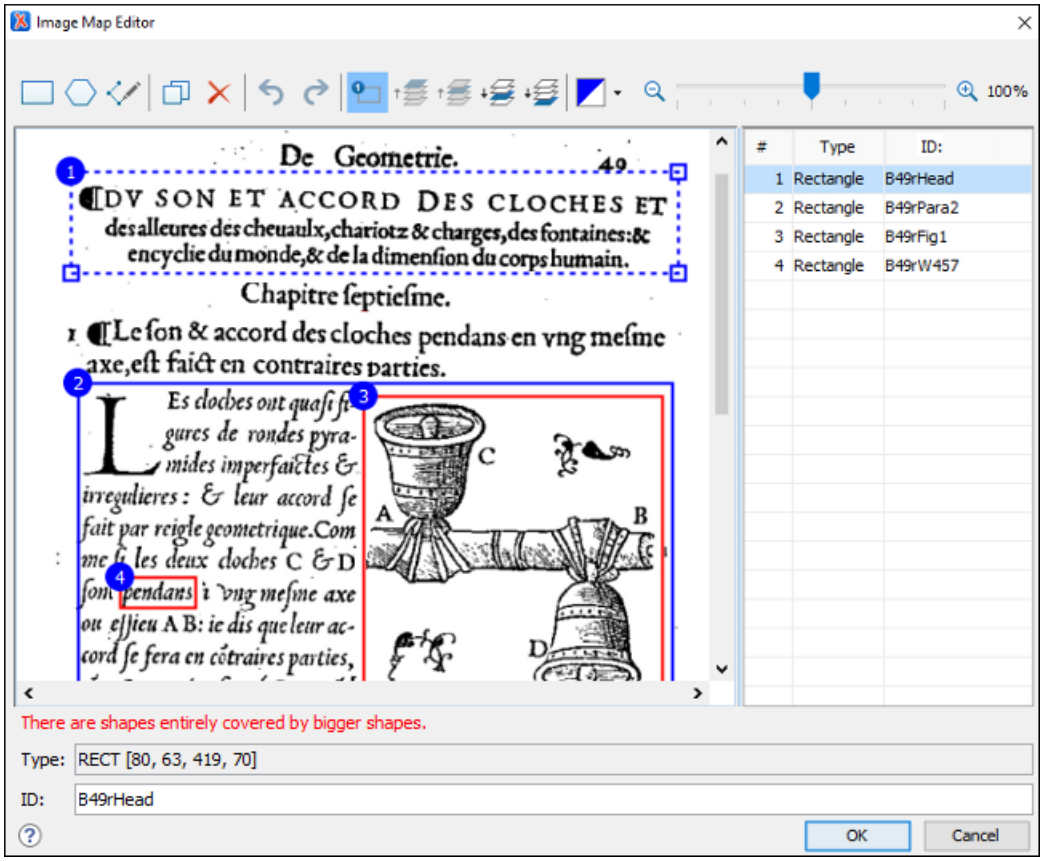


Figure 161: Image Map Editor in TEI

Image Map Editor Interface in TEI

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and ID. If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

ID

The identifier for the selected area. This will become the value of the `xml:id` attribute for the particular `zone` element. When you insert a new zone, a unique ID is automatically generated and displayed in this field. However, you can change this value if you want to.

How to Create an Image Map in TEI

To create an image map on an existing image in a TEI document, follow these steps:

1. The image (`graphic`) must be inside a `facsimile` element to support the **Image Map Editor** feature.
2. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
3. Add areas (zones) in the image by selecting one of the shape buttons (**New Rectangle** or **New Polygon**).
4. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
5. With the shape selected, enter an **ID**.
6. If you want to add more areas (zones) to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image and the following two buttons will now be available at the bottom of the image:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map.

How to Edit an Existing Image Map in TEI

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button below the image to expand a section that displays the details of the image map and allows you to change the coordinates and IDs of the hyperlinked areas.

Restriction: Currently, if `zone` elements contain additional content (such as text or comments) and you edit the image map, the **Image Map Editor** does not preserve the additional content. Therefore, if you do need to insert additional content inside the `zone` elements, you should do so after the image map has been created and finalized. Subsequent changes to the image map should then be done in **Text** mode.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Warning: PDF output is limited to rectangular shaped image map objects. Therefore, if your image contains circles or polygons, those objects will be redrawn as rectangles in the PDF output. Keep in mind that this might affect overlaps in the output.

Related Information:

TEI 'facsimile' Element Specifications

Image Maps in XHTML

Oxygen XML Editor plugin includes support for **image maps** in XHTML documents. This feature provides an easy way to create hyperlinks in various parts of an image without having to divide the image into separate image files. In HTML, an image (in the form of an `img` element) may be associated with an image map (in the form of a `map` element) by specifying a `usemap` attribute on the `img` element. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

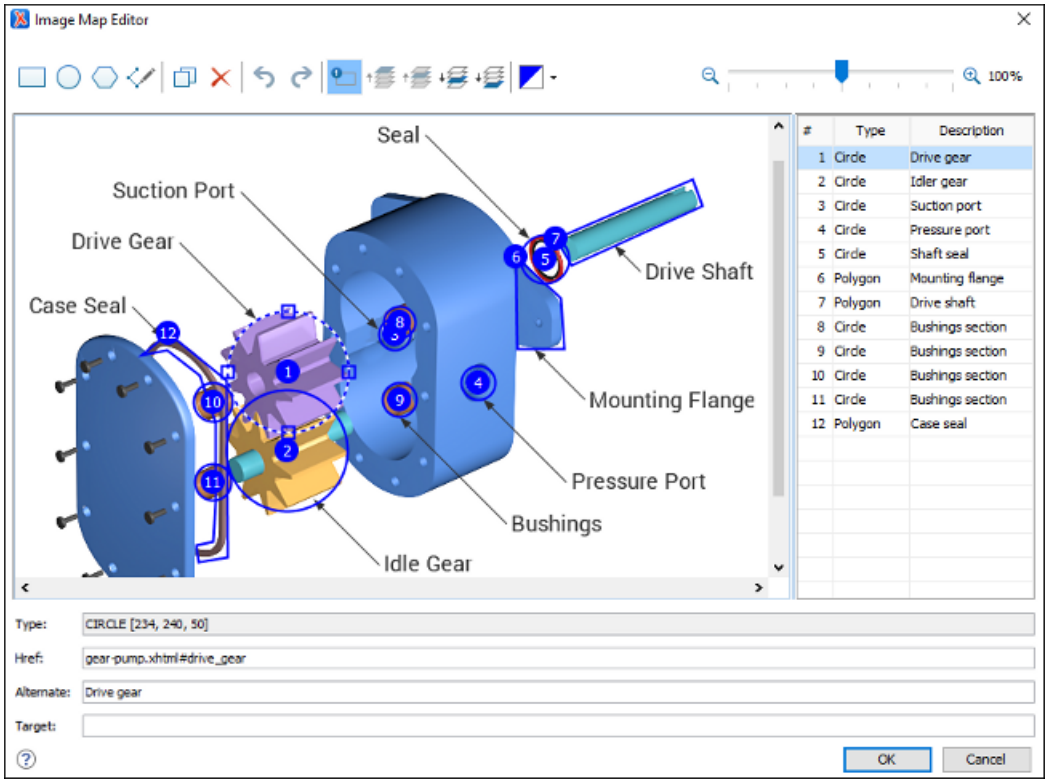


Figure 162: Image Map Editor in XHTML

Image Map Editor Interface in XHTML

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Use this button to draw a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Creates a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and description (value of the **Alternative** property). If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

Href

Specifies the hyperlink target for the selected area. This will become the value of the `href` attribute for the particular `area` element. The possible values are:

- **An Absolute URL** - A URL of another web site (for example, `http://www.example.com/index.htm`).
- **A Relative URL** - A link to a file within your web site (for example, `index.htm`).
- **An Element** - A link to the ID of an element within the page (for example, `#top`).
- **Other Protocols** - A specified path using other protocols (such as `https://`, `ftp://`, `mailto:`, `file:`).
- **A Script** - A link to a script (for example, `javascript:alert('Hello');`)

Alternate

The description for the selected area. The value is inserted in an `alt` attribute in the particular `area` element. This is a required attribute to present a text alternative for browsers that do not display images.

Target

Specifies where to open the linked resource. The allowed values are:

- **_blank** - Opens the linked resource in a new window or tab.
- **_self** - Opens the linked resource in the same frame as it was clicked.
- **_parent** - Opens the linked resource in the full body of the window.
- **framename** - Opens the linked resource in the named frame.

How to Create an Image Map in XHTML

To create an image map on an existing image in an XHTML document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting one of the shape buttons (**New Rectangle**, **New Circle**, or **New Polygon**).
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
4. With the shape selected, specify the hyperlink target in the **Href** field and enter a description for the selected area in the **Alternate** field.
5. (Optional) Specify where the hyperlink resource will be opened in the **Target** field.
6. If you want to add more hyperlinks to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image and its properties are displayed in a section below the image.

How to Edit an Existing Image Map in XHTML

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

In **Author** mode, the details of the image map are also displayed below the image and you can edit the description, href, shape, and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers**

button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Warning: PDF output is limited to rectangular shaped image map objects. Therefore, if your image contains circles or polygons, those objects will be redrawn as rectangles in the PDF output. Keep in mind that this might affect overlaps in the output.

Related Information:

HTML Image Map Specifications

Adding Video, Audio, and Embedded HTML Resources

You can insert references to media resources (such as videos, audio clips, or embedded HTML frames) in your DITA, DocBook, or XHTML topics. The media resources can be played directly in **Author** mode and in all HTML5-based outputs. There is a toolbar button ( ) that allows you to insert and configure a reference to the media resource. You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them).

Table 4: Supported Media Types

Media	Description	Type	Supported Size Properties
mp3	Moving Picture Experts Group Layer-3 Audio	audio	Width
wav	Windows Wave	audio	Width
pcm	Pulse Code Modulation	audio	Width
m4a	Moving Picture Experts Group Layer-4 Audio	audio	Width
aif	Audio Interchange Format	audio	Width
mp4	Moving Picture Experts Group Layer-4 Video	video	Width & Height
flv	Flash Video	video	Width & Height
m4v	Itunes Video File	video	Width & Height
avi	Audio Video Interleaved	video	Width & Height
embedded video (such as YouTube or Vimeo)	Embedded Iframe Code	iframe	Width & Height

Adding a Media Resource

To insert a media resource in a document, use the following procedure:

1. Place the cursor at the location where you want the media resource.
2. Select the **Insert Media Resource** action from the toolbar. A **Chose Media** dialog box appears.

   Note: You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them).
3. Select the URL for the media resource and click **Ok**.

Result in Author Mode: A reference to the specified media object is inserted and rendered in **Author** mode so that it can be played directly from there.

Attention: On Mac OS X, if you receive a **Blocked Plug-in** error message, you need to updated your *Flash Player* to the latest version.

Result in Output: In the publishing stage, the media object is converted to an HTML5 element so that it can be rendered properly and played in all HTML5-based outputs.

Embedding HTML Content in DITA Topics

The DITA Open Toolkit that comes bundled with Oxygen XML Editor plugin includes a pre-installed *plugin* that allows you to embed well-formed HTML content directly in a DITA topic.

For example, suppose you wanted to embed a YouTube video directly in a DITA topic.

The DITA topic would look like this:

```
....
<foreign outputclass="html-embed"><![CDATA[
                <iframe width="420" height="315"
                  src="https://www.youtube.com/embed/qepRkQxhTX"
                  frameborder="0" allowfullscreen="true">
                </iframe>
                ]]></foreign>
....
```

The converted HTML output would look like this:

```
...........
<iframe width="420" height="315" src="https://www.youtube.com/embed/qepRkQxhTX"
frameborder="0" allowfullscreen="true">
</iframe>
............
```

The *plugin* is also available on the *oxygenxml GitHub projects page*.

Related Information:

How to Add Video and Audio Objects in DITA WebHelp Output on page 1095

Editing MathML Notations

The **Author** editor includes a built-in editor for *MathML* notations. To start the *MathML* editor, double-click a *MathML* notation (for embedded notations, you can also select the **Edit Equation** action from its contextual menu).

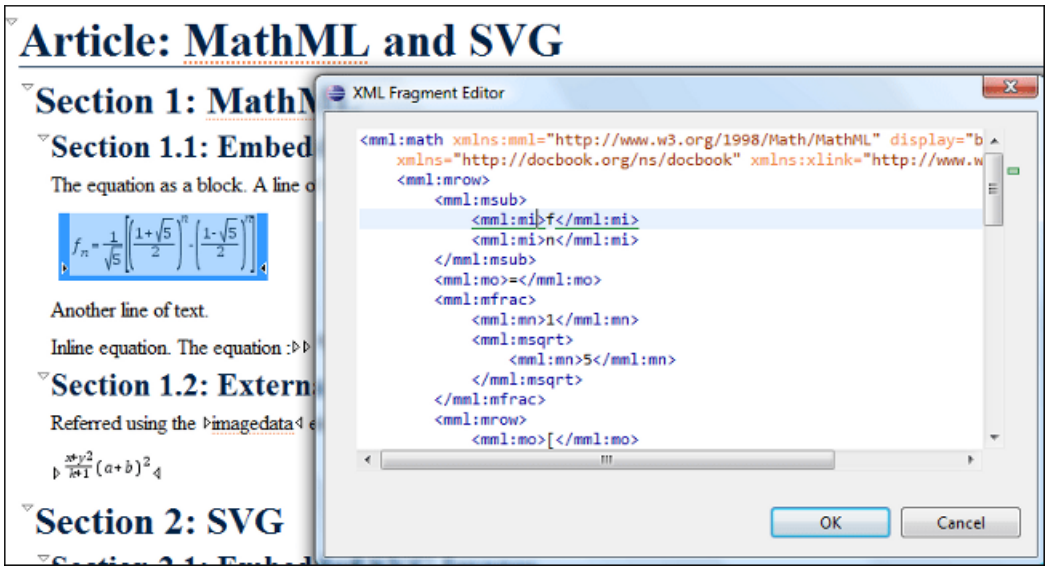


Figure 163: Default *MathML* Editor

Configure the MathFlow Editor

The *MathFlow* Components product can replace the default *MathML* editor with a specialized *MathML* editor. You have to purchase a *MathFlow* Component from Design Science and configure it in Oxygen XML Editor plugin with the following procedure:

1. Install *MathFlow* by using the *Universal* installer (for versions prior to 2.1, use the *MathFlow SDK*).
2. Set the path to the *MathFlow* install folder in the **MathML** preferences page.
3. Set the path to the *MathFlow* license file in the **MathML** preferences page.

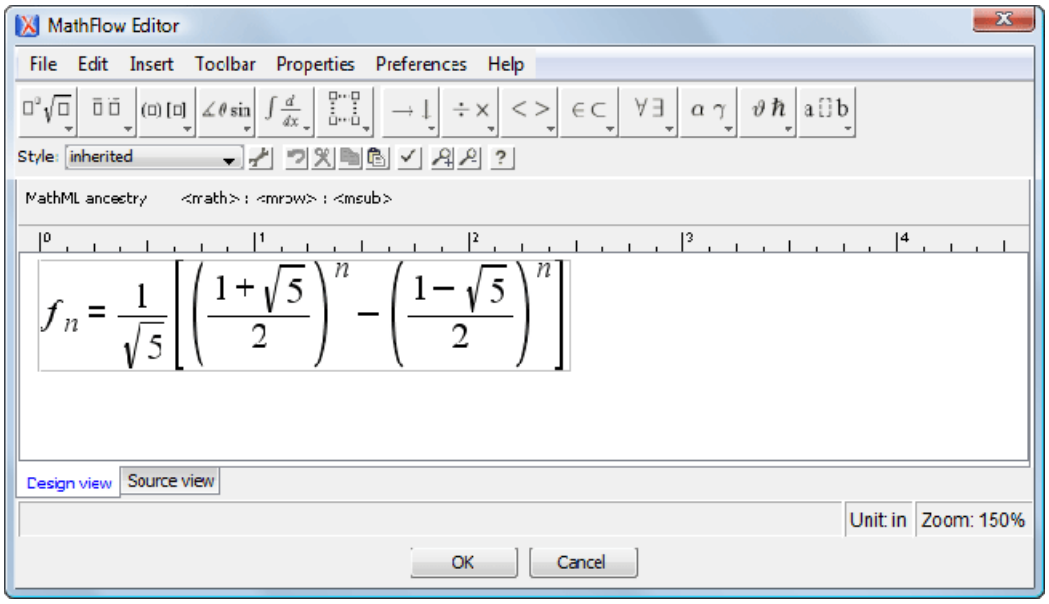


Figure 164: Default MathFlow Editor

MathML Equations in HTML Output

Currently, only **Firefox** can render **MathML** equations embedded in the **HTML** code. MathJax is a solution to properly view MathML equations embedded in **HTML** content in a variety of browsers.

If you have DocBook or DITA content that has embedded **MathML** equations and you want to properly view the equations in published HTML output types (WebHelp, CHM, EPUB, etc.), you need to add a reference to the MathJax script in the **head** element of all HTML files that have the equation embedded.

For example:

```
<script type="text/javascript"
  src="https://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS-MML_HTMLorMML">
</script>
```

For DITA documents, you can also use the following procedure:

1. Edit the DITA Map WebHelp transformation scenario and open the **Parameters** tab.
2. Set the following parameter to point to an XML resource file that contains your script, depending on your type of WebHelp system.
   - **WebHelp Responsive Systems** - Set the `webhelp.fragment.head` parameter to point to your resource file.
   - **WebHelp Classic Systems** - Set the `webhelp.head.script` parameter to point to your resource file.
3. Run the transformation scenario.

Result: The equation should now be properly rendered in other browsers, such as Edge, IE, or Chrome.

Refreshing the Content

On occasion you may need to reload the content of the document from the disk or reapply the CSS. This can be performed by using the **Reload** action.

To refresh the content of the referenced resources you can use the **Refresh references** action that is available in the current *framework* menu (for example, the **DITA** or **DocBook5** menu) . However, this action will not refresh the expanded external entities, for which you will need to use the **Reload** action.

Generating IDs for Elements in Author Mode

Oxygen XML Editor plugin allows you to manually assign or edit values of `id` attributes in **Author** mode by using the **Attributes View** or an in-place attribute editor. Oxygen XML Editor plugin also includes mechanisms to generate ID values for elements, either on-request or automatically, in DITA, DocBook, or TEI documents.

Generate IDs On-Request

You can generate ID values for specific elements on-request. To do so, select the element for which you want to generate an ID (or place the cursor inside the element) and select the **Generate IDs** action from the contextual menu or the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**). This action generates a unique ID for the current element. If you invoke the action on a block of selected content, the action will generate IDs for all top-level elements and elements that are listed in the **ID Options** dialog box. To open this dialog box, select **ID Options** from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**)

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Automatically Generate IDs

Oxygen XML Editor plugin includes an option to automatically add unique ID values to certain elements when they are created in **Author** mode. The **Auto generate IDs for elements** option can be found in the **ID Options** dialog box that is displayed when you select the **ID Options** action from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**). If this **Auto generate IDs for elements** option is selected, Oxygen XML Editor plugin automatically generates unique ID values for elements that are listed in this dialog box. You can use this dialog box to customize the format of the ID values and choose which elements will have their ID values automatically generated (for example, you can customize the list of elements to include those that you most often need to identify).

ID Options Dialog Box

To configure options for generating IDs, select **ID Options** from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**).

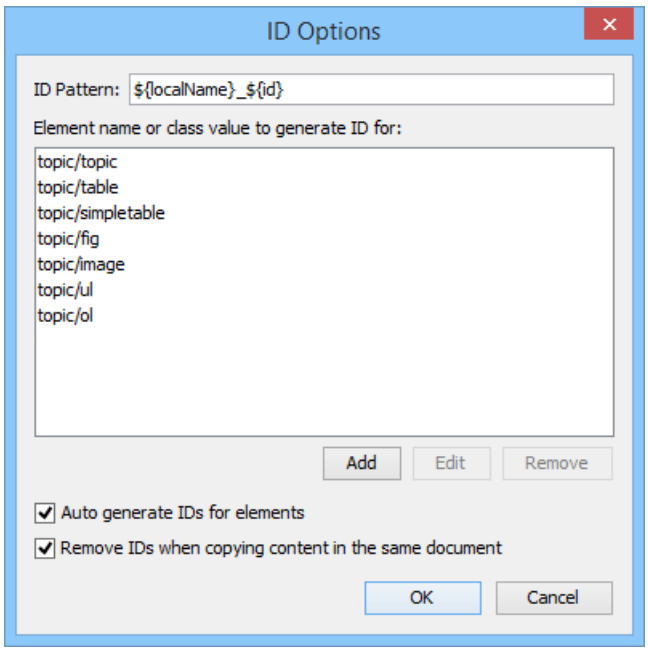


Figure 165: ID Options Dialog Box

The **ID Options** dialog box allows you to configure the following options in regards to generating ID values:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document (DITA or TEI)

When copying and pasting content in the same DITA or TEI document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Remove IDs when copying content (DocBook)

This option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs in DocBook documents. If this option is not selected, IDs are always retained when you copy or cut content and paste it in the same document or other documents. If this option is selected, IDs are never retained for copied content, but if you cut the content, they are preserved for the first paste action (and not retained for any subsequent paste actions).

Duplicating Elements with Existing IDs

If you duplicate elements with existing IDs (for example, through copy/paste or drag/drop actions), all IDs are removed at the resolution of the operation. However, you can use the options in the **ID Options** dialog box to change this behavior. The options in this dialog box affect duplicated elements with existing IDs in the following ways:

- Only the elements listed in this dialog box are affected by these options. Therefore, if you want to use these options to preserve IDs or generate new ones, you must first add the elements to be duplicated to the list in this dialog box.
- If the **Auto generate IDs for elements** option is selected and you duplicate elements with existing IDs, Oxygen XML Editor plugin assigns new, unique ID values to the duplicates.
- If the **Auto generate IDs for elements** option is not selected and you duplicate elements with existing IDs, the ID values are removed from the duplicates.
- For DITA and TEI, if the **Remove IDs when copying content in the same document** option is selected, the ID values are removed from elements that are duplicated in the same document. If it is not selected, the ID values are preserved when elements are duplicated in the same document. Selecting this option has no effect if the **Auto generate IDs for elements** option is selected and this option has no affect on elements that are duplicated in other documents.
- For DocBook, if the **Remove IDs when copying content** option is selected, the ID values are removed from any element that is duplicated. If it is not selected, the ID values are preserved when elements are duplicated. Selecting this option has no effect if the **Auto generate IDs for elements** option is selected.

Controlling the Default ID Generation Options

It is possible to configure the default ID generation options for DITA, DocBook, and TEI document types. In the `frameworks` folder for each of those document types, there is an XML configuration file called `idGenerationDefaultOptions.xml` that contains the default settings for generating IDs in each particular type of document. To configure the default settings, you can edit this file and save it back to the same directory.

The configuration file can be found in the `resources` folder within the particular *framework*. For example, the configuration file for the DITA *framework* is located in: *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/resources/idGenerationDefaultOptions.xml`.

Sharing Default ID Generation Options

If you want to share your configured default ID generation settings with other members of your team, follow these steps:

1. Configure the `idGenerationDefaultOptions.xml` file for your *framework* according to your needs.
2. Bundle a modified version of the entire *framework* folder (for example, *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/`). To do this:
   a. Open the **Preferences** dialog box and go to **Document Type Association**.
   b. Select your document type and click the **Extend** button.
   c. In the **Document type** configuration dialog box that is now displayed, select **External** for the **Storage** option. By default, this will save the extension in a new folder in the `frameworks` folder (for example, *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita-extension (1)`), but you can also use the **Browse** button to specify a specific name and folder.
   d. In this new extension folder, create a new folder called `resources` and add your modified `idGenerationDefaultOptions.xml` file to this new `resources` folder.
   e. Go back to the **Document Type Association** preferences page, select the extended *framework*, and click **Edit**.
   f. Go to the **Classpath** tab, add a reference to your new `resources` folder, and move this reference up (using the **Move Up** button) so that it is the first one that appears in the list.
   g. Click **OK** and exit out of the preferences page.
3. Distribute your newly extended folder to other team members by using one of the methods described in Sharing a Framework (Document Type) on page 1298.

Using Form Controls in Author Mode

You can use form controls in **Author** mode in a variety of ways to make it easier to capture, organize, and edit content. Oxygen XML Editor plugin includes built-in form controls that can be used by content authors in **Author** mode. The types of built-in form controls that you can use include the following:

- Audio - A media object that plays audio clips.
- Browser - A media object that renders HTML frames or interact with SVG documents
- Button - A graphical user interface object that performs a specific action.
- Button Group - A graphical user interface group of buttons (such as radio buttons) that perform specific actions.
- Checkbox - A graphical user interface box that you can click to select or deselect a value.
- Combo Box - A graphical user interface object that can be a drop-down menu or a combination of a drop-down menu and a single-line text field.
- Date Picker - A form control object that allows you to select a date in a specified format.
- HTML Content - A graphical user interface box that is used for rendering HTML content.
- Pop-up - A contextual menu that provides quick access to various actions.
- Text Area - A box that allows you to enter multiple lines of text.
- Text Field - A graphical user interface box that allows you to enter a single line of text.
- URL Chooser - A dialog box that allows you to select the location of local or remote resources.
- Video - A media object that plays videos.

You can also implement custom form controls for more specific needs.

The following image is an example of how form controls can be used by content authors in **Author** mode. It includes several button form controls, a combo box, and a text field. The icon is a button form control that is assigned a specific action that changes the layout to an editing mode. The **[+]** and **[-]** icons are also button form controls that are assigned specific actions to add or delete records from the document. The *Direct manager* row includes a combo box form control that is both a drop-down menu and an editable text field, while the *Homepage* row includes a simple editable text field form control.

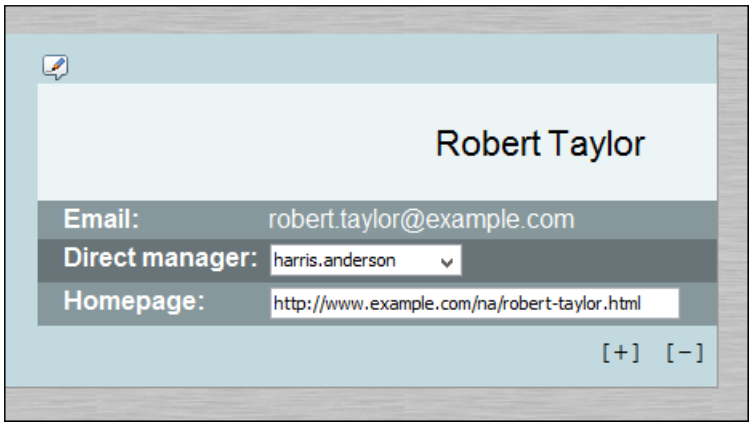


Figure 166: Example of Form Controls in Author Mode

You can use your imagination to envision the multitude of ways that you can use form controls to make the editing experience for content authors easier and more efficient. As a working example, a bundled *samples* project (located in the `samples` folder inside the Oxygen XML Editor plugin installation directory) contains a file called `personal.xml` that contains form controls. You can use this file, along with its corresponding `personal.css` file (form controls are defined in the CSS) to experiment with an example of how form controls can be implemented in **Author** mode.

Contextual Menu Actions in Author Mode

Oxygen XML Editor plugin includes powerful support for editing XML documents through actions included in the contextual menu. When editing XML documents in **Author** mode, the contextual menu includes *general* actions that are available for all of the recognized document types and *framework*-specific actions that are configured for each document type.

General Contextual Menu Actions in Author Mode

The *general* actions that are available in the contextual menu (some of them are also available in the submenus of the **Document** menu) for all document types include the following:

Quick Fix (Alt + 1 (Command + Alt + 1 on OS X))

Available when the contextual menu is invoked on an error where Oxygen XML Editor plugin can provide a *Quick Fix*.

Open Image

Available when the contextual menu is invoked on an image. This action allows you to open an image in a default system application associated with the current image type.

Track Changes Actions

Available when the *Track Changes* feature is enabled and the contextual menu is invoked on a change. The following options are available:

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes, all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Author Callout Actions

Available when the contextual menu is invoked on a *callout*. If the corresponding options in the **Show review callouts** section are selected in the **Callouts** preferences page, the callouts are displayed in **Author** mode for comments, tracked insertion changes, or tracked deletion changes.

Insertion or Deletion Callout Actions

The following actions are available in the contextual menu when invoked on an *insertion* or *deletion* callout box:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes, all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Comment Callout Actions

The following actions are available in the contextual menu when invoked on a *comment* callout box:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Edit Attributes

Displays an in-place attributes editor that allows you to manage the attributes of an element.

Edit Profiling Attributes

Allows you to change the profiling attributes defined on all selected elements.

Insert submenu

This submenu includes insert actions that are specific to each *framework*, along with the following general action:

Insert Entity

Allows you to insert a predefined entity or character entity. Surrogate character entities (range #x10000 to #x10FFFF) are also accepted. Character entities can be entered in one of the following forms:

- *#<decimal value>* - e. g. #65
- *&#<decimal value>;* - e. g. &#65
- *#x<hexadecimal value>* - e. g. #x41
- *&#x<hexadecimal value>;* - e. g. &#x41

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Paste special submenu

This submenu includes special paste actions that are specific to each *framework*, as well as the following general paste actions:

Paste As XML

Pastes clipboard content that is considered to be XML, preserving its XML structure.

Paste As Text

Pastes clipboard content, ignoring any structure or styling markup.

Select submenu

This submenu allows you to select the following:

Element

Selects the entire element at the current cursor position.

Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Parent

Selects the entire parent element at the current cursor position.

Text submenu

This submenu contains the following actions:

To Lower Case

Converts the selected content to lower case characters.

To Upper Case

Converts the selected content to upper case characters.

Capitalize Sentences

Converts to upper case the first character of every selected sentence.

Capitalize Words

Converts to upper case the first character of every selected word. 0034

Count Words

Counts the number of words and characters (no spaces) in the entire document or in the selection for regular content and read-only content.

Note: The content marked as deleted with *change tracking* is ignored when counting words.

Convert Hexadecimal Sequence to Character (Ctrl + Shift + H (Command + Shift + H on OS X))

Converts a sequence of hexadecimal characters to the corresponding Unicode character. The action can be invoked if there is a selection containing a valid hexadecimal sequence or if the cursor is placed at the right side of a valid hexadecimal sequence. A valid hexadecimal sequence can be composed of 2 to 4 hexadecimal characters and may or may not be preceded by the `0x` or `0X` prefix. Examples of valid sequences and the characters they will be converted to:

- `0x0045` will be converted to E
- `0X0125` to ĥ
- `265` to #
- `2190` to #

Refactoring submenu

Contains a series of actions designed to alter the XML structure of the document:

Toggle Comment

Encloses the currently selected text in an XML comment, or removes the comment if it is commented.

Move Up (Alt + UpArrow)

Moves the current node or selected nodes in front of the previous node.

Move Down (Alt + DownArrow)

Moves the current node or selected nodes after the subsequent node.

Split Element

Splits the content of the closest element that contains the position of the cursor. Thus, if the cursor is positioned at the beginning or at the end of the element, the newly created sibling will be empty.

Join Elements

Joins two adjacent *block elements* that have the same name. The action is available only when the cursor position is between the two adjacent *block elements*. Also, joining two *block elements* can be done by

pressing the **Delete** or **Backspace** keys and the cursor is positioned between the boundaries of these two elements.

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag to enclose a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Delete Element Tags

Deletes the tags of the closest element that contains the position of the cursor. This operation is also executed if the start or end tags of an element are deleted by pressing the **Delete** or **Backspace** keys.

Remove All Markup

Removes all the XML markup inside the selected block of content and keeps only the text content.

Remove Text

Removes the text content of the selected block of content and keeps the markup in tact with empty elements.

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Review submenu

This submenu includes the following actions:

Track Changes

Enables or disables the *Track Changes* support for the current document.

Accept Change(s) and Move to Next

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted.

Accept All Changes

Accepts all *Tracked Changes* in the current document.

Reject Change(s) and Move to Next

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected.

Reject All Changes

Rejects all *Tracked Changes* in the current document.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Highlight

Enables the highlighting tool that allows you to mark text in your document.

Colors

Allows you to select the color for highlighting text.

Stop highlighting

Use this action to deactivate the highlighting tool.

Remove highlight(s)

Use this action to remove highlighting from the document.

Add Comment

Inserts a comment at the cursor position. The comment appears in a callout box and a tooltip (when hovering over the change).

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Manage Reviews

Opens the **Review** view.

Manage IDs submenu

This submenu is available for XML documents that have an associated DTD, XML Schema, or Relax NG schema. It includes the following actions:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References in

Searches for the references of the ID. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Occurrences in file

Searches for the occurrences of the ID in the current document.

Folding submenu

This submenu includes the following actions:

Toggle Fold

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the elements indented with one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

Inspect Styles

Opens the **CSS Inspector** view that allows you to examine the CSS rules that match the currently selected element.

Options

Opens the Author mode options page.

Document Type-Specific Contextual Menu Actions in Author Mode

Other *document type-specific* actions are available in the contextual menu of **Author** mode for the following document types (click the links to see the default actions that are available for each specific document types):

- **DocBook4** Author Actions
- **DocBook5** Author Actions
- **DITA** Author Actions
- **DITA Map** Author Actions
- **XHTML** Author Actions
- **TEI ODD** Author Actions
- **TEI P5** Author Actions
- **JATS** Author Actions

Special Character Support in Author Mode

Oxygen XML Editor plugin offers support for bidirectional text, such as Arabic or Hebrew languages that require right-to-left scripts, certain Asian languages (such as Devanagari, Bengali, Gurmukhi, Gujarati, Oriya, Tamil, Telugu, Kannada, Malayalam, Sinhala, Thai, Khmer), or other special characters (such as combining characters). To achieve this, Oxygen XML Editor plugin implements the Unicode Bidirectional Algorithm, as specified by the Unicode Consortium. The text arrangement is similar to what you get in a modern HTML browser. The final text layout is rendered according to the directional CSS properties matching the XML elements and the Unicode directional formatting codes.

By default, when navigating bidirectional text with the arrow keys in **Author** mode, pressing the right arrow key moves the cursor in the writing direction and the left arrow moves it in the opposite direction. However, if the **Arrow keys move the cursor in the writing direction** option in the **Cursor Navigation** preferences page is not selected, pressing the right arrow will simply move the cursor to the right (and the left arrow moves it to the left), regardless of the text direction.

Tip: If you experience performance issues when editing documents that contain bidirectional text, you could try the following solution:

- You could try changing the font. For example, you could try using the**David** font in Hebrew content. If it is not already installed in your operating system, this font is available at: https://www.microsoft.com/typography/fonts/family.aspx?FID=234. To change the font in Oxygen XML Editor plugin, open the **Preferences** dialog box , go to **Fonts**, and change the font in the **Author default font** option.

For more information about the bidirectional text support in the **Author** mode, watch our video demonstration:

https://www.youtube.com/embed/IC0ahH1IS7s

Related Information:

Special Character Support in Grid Mode on page 186
Inserting Special Characters on page 396

Controlling the Text Direction Using XML Markup

Oxygen XML Editor plugin Supports the following CSS properties that control the direction of text:

Table 5: CSS Properties Controlling Text Direction

direction	Specifies the writing direction of the text. The possible values are **ltr** (the text direction is left to right), **rtl** (the text direction is right to left, and **inherit** (the direction property is inherited from the parent element).
unicodeBidi	Used along with the **direction** property to create levels of embedded text with different text directions in the same document. The possible values of this property are **bidi-override** (creates an additional level of embedding and forces all strong characters to the direction specified in the **direction**), **embed** (creates an additional level of embedding), **normal** (does not use an additional level of embedding), and **inherit** (the value of the **unicodeBidi** property is inherited from parent element).

For instance, to declare an element as being Right to Left, you could use a stylesheet like this:

XML File:

```
<article>
  <myRTLpara>RIGHT TO LEFT TEXT</myRTLPara>
</article>
```

Associated CSS File:

```
myRTLpara{
    direction:rtl;
    unicode-bidi:embed;
}
```

Oxygen XML Editor plugin recognizes the **dir** attribute on any XML document. The supported values are:

Values	Description
ltr	The text from the current element is Left to Right, embedded.
rtl	The text from the current element is Right to Left, embedded.
lro	The text from the current element is Left to Right, embedded.
rlo	The text from the current element is Right to Left, embedded.

The following XML document types make use of the **dir** attribute with the above values:

- DITA
- DocBook
- TEI
- XHTML

Note: When the *inline element* tags are visible, the text in the line is arranged according to the BIDI algorithm after replacing the tags symbols with Object Replacement Characters. This makes it possible to get a different text arrangement when viewing a document in the **No Tags** mode versus viewing it in the **Full Tags** mode.

Controlling the Text Direction Using the Unicode Direction Formatting Codes

These Unicode Direction Formatting Codes codes can be embedded in the edited text, specifying a text direction and embedding. However, it is not recommended to use them in XML as they are zero width characters, making it hard to debug the text arrangement.

Table 6: Directional Formatting Codes

U+202A (LRE)	LEFT-TO-RIGHT EMBEDDING	Treats the following text as embedded left-to-right.
U+202B (RLE)	RIGHT-TO-LEFT EMBEDDING	Treats the following text as embedded right to left.
U+202D (LRO)	LEFT-TO-RIGHT OVERRIDE	Forces the following characters to be treated as strong left-to-right characters.
U+202E (RLO)	RIGHT-TO-LEFT OVERRIDE	Forces the following characters to be treated as strong right-to-left characters.
U+202C (PDF)	POP DIRECTIONAL FORMATTING CODE	Restores the bidirectional state to what it was before the last LRE, RLE, RLO, or LRO.
U+200E (LRM)	LEFT-TO-RIGHT MARK	Left-to-right strong zero-width character.
U+200F (RLM)	RIGHT-TO-LEFT MARK	Right-to-left strong zero-width character.

To insert Unicode Direction Formatting Codes, use the **Symbols** toolbar action. To easily find such a code, you can either enter directly the hexadecimal value, or use the **Details** tab to enter the codes name.

Oxygen XML Editor plugin offers the support for bi-directional text in all the side views (**Outline** view, **Attributes** view and so on) and text fields.

Design Editing Mode (XML Schema Diagram Editor)

XML Schemas allow document designers to specify the allowed structure and content of an XML document and to check if an XML document is valid.

Oxygen XML Editor plugin provides a simple and expressive XML Schema diagram editor (**Design** mode) for editing XML Schemas. The schema diagram helps both the content authors who want to understand a schema and schema designers who develop complex schemas.

To switch to this mode, select **Design** at the bottom of the editing area.

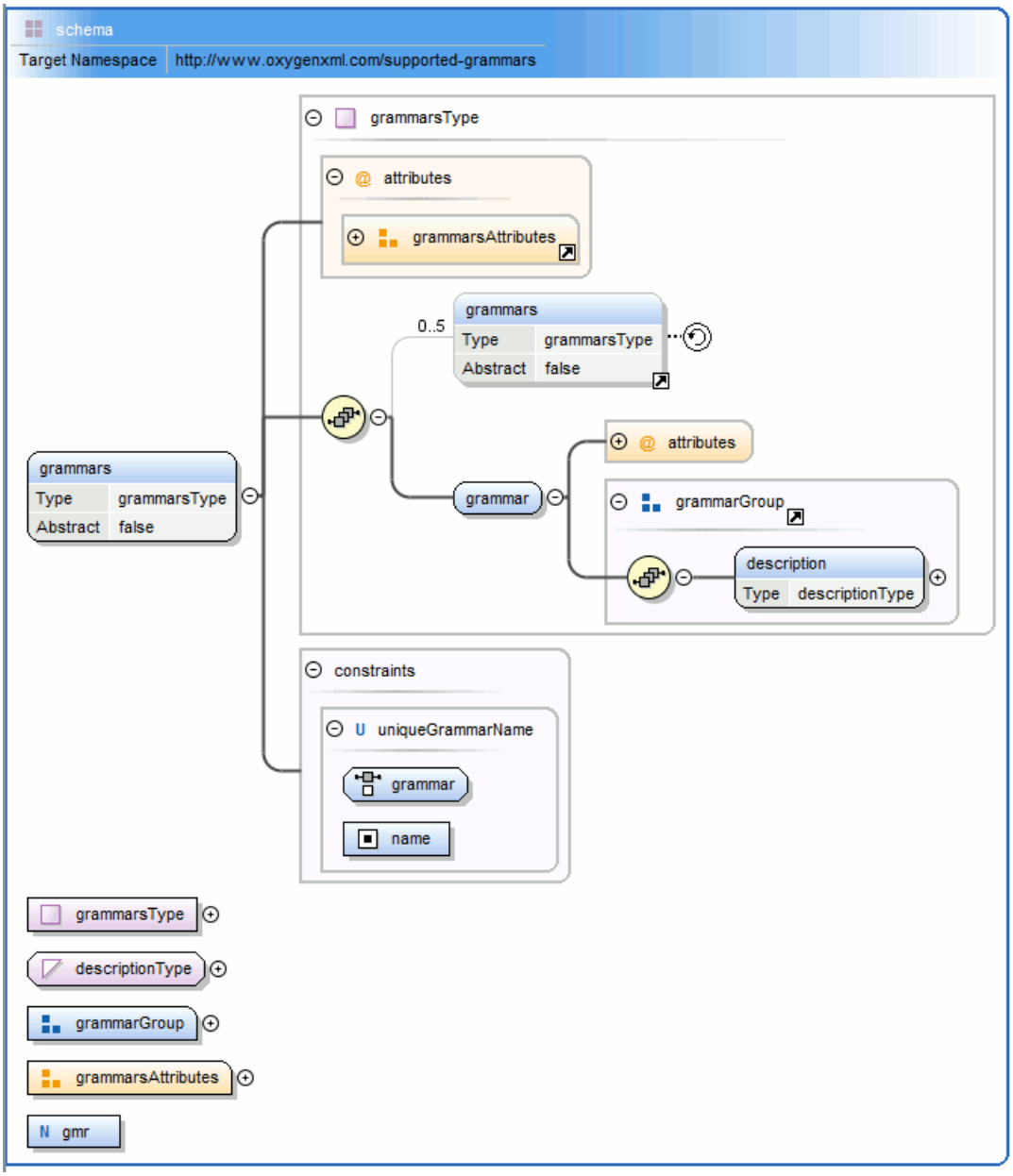


Figure 167: XML Schema Diagram

For more information about designing XML Schemas, watch our video demonstration:

https://www.youtube.com/embed/vz1eIZELQgc

Navigation in the XML Schema Design Mode

The following editing and navigation features work for all types of schema components in the XML Schema **Design** mode:

- Move/reference components in the diagram using drag-and-drop actions.
- Select consecutive components on the diagram (components from the same level) using the *Shift* key. You can also make discontinuous selections in the schema diagram using the **Ctrl (Meta on Mac OS)** key. To deselect one of the components, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.
- Use the arrow keys to navigate the diagram vertically and horizontally.
- Use *Home*/*End* keys to jump to the first/last component from the same level. Use **Ctrl + Home (Command + Home on OS X)** key combination to go to the diagram root and **Ctrl + End (Command + End on OS X)** to go to the last child of the selected component.
- You can easily go back to a previously visited component while moving from left to right. The path will be preserved only if you use the left arrow key or right arrow key. For example, if the current selection is on the second attribute from an attribute group and you press the left arrow key to jump to the attribute group, when you press the right arrow key, then the selection will be moved to the second attribute.
- Go back and forward between components viewed or edited in the diagram by selecting them in the **Outline** view:
  - **Back** (go to previous schema component).
  - **Forward** (go to next schema component).
  - **Go to Last Modification** (go to last modified schema component).
- Copy, reference, or move global components, attributes, and identity constraints to another position and from one schema to another using the **Cut/Copy** and **Paste/Paste as Reference** actions.
- Go to the definition of an element or attribute with the **Go to Definition** action.
- You can expand and see the contents of the imports/includes/redefines in the diagram. In order to edit components from other schemas the schema for each component will be opened as a separate file in Oxygen XML Editor plugin.

  Tip: If an XML Schema referenced by the current opened schema was modified on disk, the change will be detected and you will be asked to refresh the current schema contents.
- Recursive references are marked with a *recurse symbol* (). Click this symbol to navigate between the element declaration and its reference.

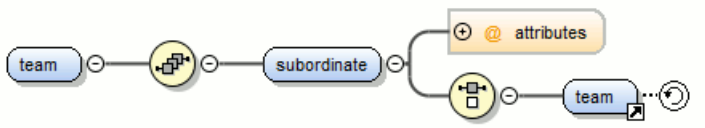


Figure 168: Recursive Reference

XML Schema Outline View

The **Outline** view for XML Schemas presents all the global components grouped by their location, namespace, or type. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

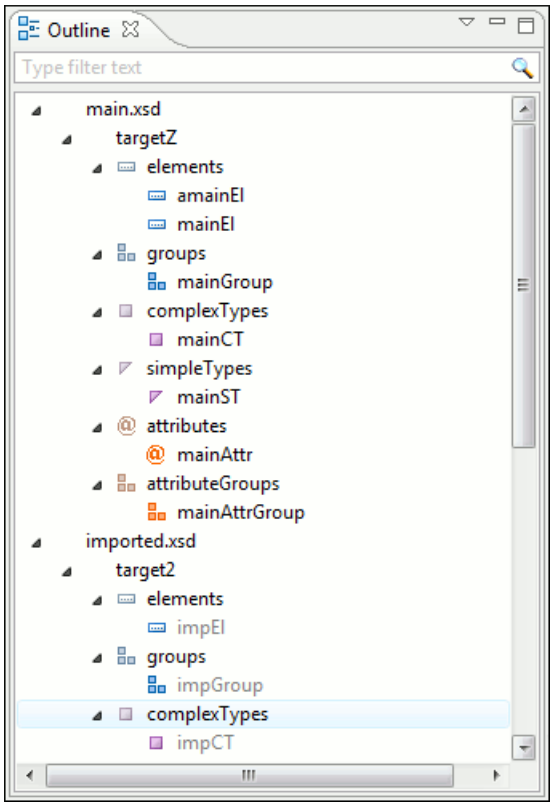


Figure 169: Outline View for XML Schema

The **Outline** view provides the following options in the **View Menu** on the **Outline** view action bar:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches;

Selection update on cursor move

Allows a synchronization between **Outline** view and schema diagram. The selected view from the diagram is also selected in the **Outline** view.

Sort

Allows you to sort alphabetically the schema components.

Show all components

Displays all components that were collected starting from the *master files*. Components that are not referable from the current file are marked with an orange underline. To reference them, add an import directive with the `componentNS` namespace.

Show referable components

Displays all components (collected starting from the *master files*) that can be referenced from the current file. This option is set by default.

Show only local components

Displays the components defined in the current file only.

Group by location/namespace/type

These three operations allow you to group the components by location, namespace, or type. When grouping by namespace, the main schema target namespace is the first presented in the **Outline** view.

The following contextual menu actions are available in the **Outline** view:

Remove (Delete)

Removes the selected item from the diagram.

Search References

Searches all references of the item found at current cursor position in the defined scope, if any.

Search References in

Searches all references of the item found at current cursor position in the specified scope.

Component Dependencies

Opens the **Component Dependencies** view that allows you to see the dependencies for the current selected component.

Resource Hierarchy

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the hierarchy for the current selected resource.

Resource Dependencies

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the dependencies for the current selected resource.

Rename Component in

Renames the selected component.

Generate Sample XML Files

Generate XML files using the current opened schema. The selected component is the XML document root.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

Tip: The search filter is case insensitive. The following wildcards are accepted:

- ***** - any string
- **?** - any character
- **,** - patterns separator

If no wildcards are specified, the string to search will be searched as a partial match.

The content of the **Outline** view and the editing area are synchronized. When you select a component in the **Outline** view, its definition is highlighted in the editing area.

Related Information:

Searching and Refactoring Actions in XML Schemas on page 699
XML Schema Component Dependencies View on page 697
XML Schema Resource Hierarchy / Dependencies View on page 695
Generating Sample XML Files on page 701
Editing Relax NG Schema in the Master Files Context on page 757

XML Schema Attributes View

The **Attributes** view for XML Schemas presents the properties for the selected component in the schema diagram. By default, it is displayed on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

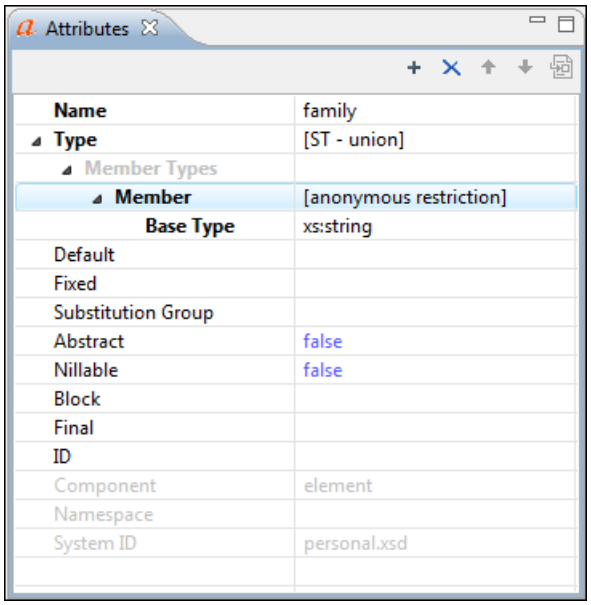


Figure 170: Attributes View

The default value of a property is presented in the **Attributes** view with blue foreground. The properties that can not be edited are rendered with gray foreground. A non-editable category that contains at least one child is rendered with bold. Bold properties are properties with values set explicitly to them.

Properties for components that do not belong to the current edited schema are read-only but if you double-click them you can choose to open the corresponding schema and edit them.

You can edit a property by double-clicking by pressing Enter. For most properties you can choose valid values from a list or you can specify another value. If a property has an invalid value or a warning, it will be highlighted in the table with the corresponding foreground color. By default, properties with errors are highlighted with red and the properties with warnings are highlighted with yellow. You can customize these colors from the Document checking user preferences.

For imports, includes and redefines, the properties are not edited directly in the **Attributes** view. A dialog box will open that allows you to specify properties for them.

The schema namespace mappings are not presented in **Attributes** view. You can view/edit these by choosing **Edit Schema Namespaces** from the contextual menu on the schema root. See more in the Edit Schema Namespaces section.

The **Attributes** view has five actions available on the toolbar and also on the contextual menu:

Add

Allows you to add a new member type to an union's member types category.

Remove

Allows you to remove the value of a property.

Move Up

Allows you to move up the current member to an union's member types category.

Move Down

Allows you to move down the current member to an union's member types category.

Copy

Copy the attribute value.

Go to Definition

Shows the definition for the selected type.

Show Facets

Allows you to edit the facets for a simple type.

XML Schema Facets View

The **Facets** view for XML Schemas presents the facets for the selected component, if available. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

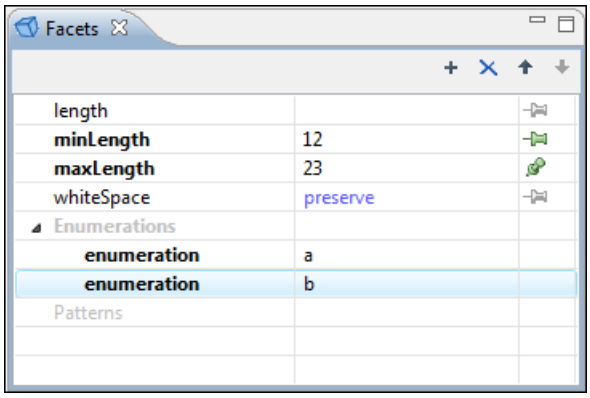


Figure 171: Facets View

The default value of a facet is rendered in the **Facets** view with a blue color. The facets that can not be edited are rendered with a gray color. The grouping categories (for example: **Enumerations** and **Patterns**) are not editable. If these categories contain at least one child they are rendered with bold. Bold facets are facets with values set explicitly to them.

Important: Usually inherited facets are presented as default in the **Facets** view but if patterns are inherited from a base type and also specified in the current simple type only the current specified patterns will be presented. You can see the effective pattern value obtained by combining the inherited and the specified patterns as a tooltip on the **Patterns** category.

Facets for components that do not belong to the current edited schema are read-only but if you double-click them you can choose to open the corresponding schema and edit them.

You can edit a facet by double-clicking it or by pressing Enter, when that facet is selected. For some facets you can choose valid values from a list or you can specify another value. If a facet has an invalid value or a warning, it will be highlighted in the table with the corresponding foreground color. By default, facets with errors are presented with red and the facets with warnings with yellow. You can customize the error colors from the Document Checking user preferences.

The **Facets** view provides the following actions in its toolbar and contextual menu:

Add

Allows you to add a new enumeration or a new pattern.

Remove

Allows you to remove the value of a facet.

Edit Annotations

Allows you to edit an annotation for the selected facet.

Move Up

Allows you to move up the current enumeration/pattern in **Enumerations/Patterns** category.

Move Down

Allows you to move down the current enumeration/pattern in **Enumerations/Patterns** category.

Copy

Copy the attribute value.

Open in Regular Expressions Builder

Rather than editing regular expressions manually, this action allows you to open the pattern in the XML Schema Regular Expressions Builder that guides you through the process of testing and constructing the pattern..

Facets can be fixed to prevent a derivation from modifying its value. To fix a facet value just press the **Pin** button.

XML Schema Palette View

The **Palette** view is designed to offer quick access to XML Schema components and to improve the usability of the XML Schema diagram builder. You can use the **Palette** to drag and drop components in the **Design** mode. The components offered in the **Palette** view depend on the XML schema version set in the **XML Schema** preferences page. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Figure 172: Palette View

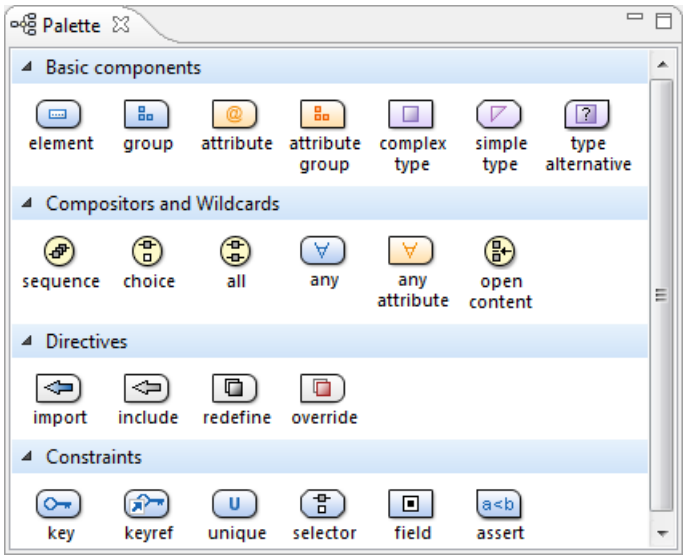


Figure 173: Palette View

Components are organized functionally into 4 collapsible categories:

- Basic components: *elements*, *group*, *attribute*, *attribute group*, *complex type*, *simple type*, *type alternative*.
- Compositors and Wildcards: *sequence*, *choice*, *all*, *any*, *any attribute*, *open content*.
- Directives: *import*, *include*, *redefine*, *override*.
- Identity constraints: *key*, *keyref*, *unique*, *selector*, *field*, *assert*.

Note: The *type alternative*, *open content*, *override*, and *assert* components are available for XML Schema 1.1.

To add a component to the edited schema:

- Click and hold a graphic symbol from the **Palette** view, then drag the component into the **Design** view.
- A line dynamically connects the component with the XML schema structure.
- Release the component into a valid position.

Note: You cannot drop a component into an invalid position. When you hover the component into an invalid position, the mouse cursor changes its shape into . Also, the connector line changes its color from the usual dark gray to the color defined in the **Validation error highlight color** option (default color is red).

For more information about the Schema palette, watch our video demonstration:

https://www.youtube.com/embed/KalHUXmpuAA

Schema Editing Actions

You can edit an XML schema using drag and drop operations or contextual menu actions.

Drag and drop is the easiest way to move the existing components to other locations in an XML schema. For example, you can quickly insert an element reference in the diagram with a drag and drop from the **Outline** view to a compositor in the diagram. Also, the components order in an `xs:sequence` can be easily changed using drag and drop.

If this property has not been set, you can easily set the attribute/element type by dragging over it a simple type or complex type from the diagram. If the type property for a simple type or complex type is not already set, you can set it by dragging over it a simple or complex type.

Depending on the drop area, various actions are available:

- **move** - Context dependent, the selected component is moved to the destination.
- **reference** - Context dependent, the selected component is referenced from the parent.
- **copy** - If **(Ctrl (Meta on Mac OS))** key is pressed, a copy of the selected component is inserted to the destination.

Visual clues about the operation type are indicated by the mouse pointer shape:

- - When moving a component.
- - When referencing a component.
- - When copying a component.

You can edit some schema components directly in the diagram. For these components, you can edit the name and the additional properties presented in the diagram by double clicking the value you want to edit. If you want to edit the name of a selected component, you can also press **(Enter)**. The list of properties that can be displayed for each component can be customized in the Preferences.

When editing references, you can choose from a list of available components. Components from an imported schema for which the target namespace does not have an associated prefix is displayed in the list as `componentName#targetNamespace`. If the reference is from a target namespace that was not yet mapped, you are prompted to add prefix mappings for the inserted component namespace in the current edited schema.

You can also change the compositor by double-clicking it and choose the compositor you want from the proposals list.

There are some components that cannot be edited directly in the diagram: imports, includes, redefines. The editing action can be performed if you double-click or press **(Enter)** on an import/include/redefine component. An edit dialog box is displayed, allowing you to customize the directives.

Related Information:

Searching and Refactoring Actions in XML Schemas on page 699
XML Schema Component Dependencies View on page 697
XML Schema Resource Hierarchy / Dependencies View on page 695
Generating Sample XML Files on page 701
Schema Design Preferences on page 83

Contextual Menu Actions in the Design Mode

The contextual menu of the **Design** mode includes the following actions:

Go to Definition (Ctrl + Shift + Enter)

Shows the definition for the current selected component. For references, this action is available by clicking the arrow displayed in its bottom right corner.

Open Schema (Ctrl + Shift + Enter)

Opens the selected schema. This action is available for `xsd:import`, `xsd:include` and `xsd:redefine` elements. If the file you try to open does not exist, a warning message is displayed and you have the possibility to create the file.

Edit Attributes (Alt + Shift + Enter)

Allows you to edit the attributes of the selected component in a small in-place editor that presents the same attributes as in the **Attributes** view and the **Facets** view. The actions that can be performed on attributes in this dialog box are the same actions presented in the two views.

Append child

Offers a list of valid components, depending on the context, and appends your selection as a child of the currently selected component. You can set a name for a named component after it has been added in the diagram.

Insert before

Offers a list of valid components, depending on the context, and inserts your selection before the selected component, as a sibling. You can set a name for a named component after it has been added in the diagram.

Insert after

Offers a list of valid components, depending on the context, and inserts your selection after the selected component, as a sibling. You can set a name for a named component after it has been added in the diagram.

New global

Inserts a global component in the schema diagram. This action does not depend on the current context. If you choose to insert an import you have to specify the URL of the imported file, the target namespace and the import ID. The same information, excluding the target namespace, is requested for an `xsd:include` or `xsd:redefine` element.

Note: If the imported file has declared a target namespace, the field **Namespace** is completed automatically.

Edit Schema Namespaces

When performed on the schema root, it allows you to edit the schema target namespace and namespace mappings. You can also invoke the action by double-clicking the target namespace property from **Attributes** view for the schema or by double-clicking the schema component.

Edit Annotations

Allows you to edit the annotation for the selected schema component in the **Edit Annotations** dialog box. You can perform the following operations in the dialog box:

- **Edit all `appinfo/documentation` items for a specific annotation** - All `appinfo/documentation` items for a specific annotation are presented in a table and can be easily edited. Information about an annotation item includes: type (documentation/appinfo), content, source (optional, specify the source of the `documentation/appinfo` element) and `xml:lang`. The content of a `documentation/appinfo` item can be edited in the **Content** area below the table.
- **Insert/Insert before/Remove documentation/appinfo.** The **Add** button allows you to insert a new annotation item (`documentation/appinfo`). You can add a new item before the item selected in table by pressing the **Insert Before** button. Also, you can delete the selected item using the **Remove** button.
- **Move items up/down** - to do this use the **Move up** and **Move down** buttons.
- **Insert/Insert before/Remove annotation** - Available for components that allow multiple annotations such as schemas or redefines.
- **Specify an ID for the component annotation**. An optional identifier for the annotation.

Annotations are rendered by default under the graphical representation of the component. When you have a reference to a component with annotations, these annotations are presented in the diagram also below the reference component. The **Edit Annotations** action invoked from the contextual menu edit the annotations for the reference. If the reference component does not have annotations, you can edit the annotations of the referenced component by double-clicking the annotations area. Otherwise, you can edit the referenced component annotations only if you go to the definition of the component.

Note: For imported/included components that do not belong to the currently edited schema, the **Edit Annotations** dialog box presents the annotation as read-only. To edit its annotation, open the schema where the component is defined.

Extract Global Element

Action that is available for local elements. A local element is made global and is replaced with a reference to the global element. The local element properties that are also valid for the global element declaration are kept.

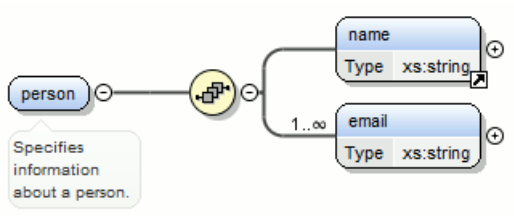


Figure 174: Extracting a Global Element

If you use the **Extract Global Element** action on a `name` element , the result is:

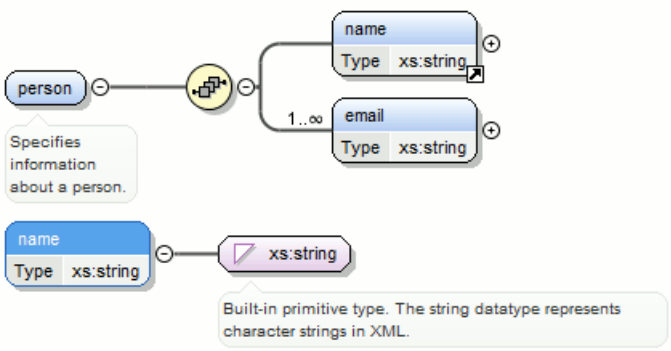


Figure 175: Extracting a Global Element on a `name` Element

Extract Global Attribute

Action available for local attributes. A local attribute is made global and replaced with a reference to the global attribute. The properties of local attribute that are also valid in the global attribute declaration are kept.

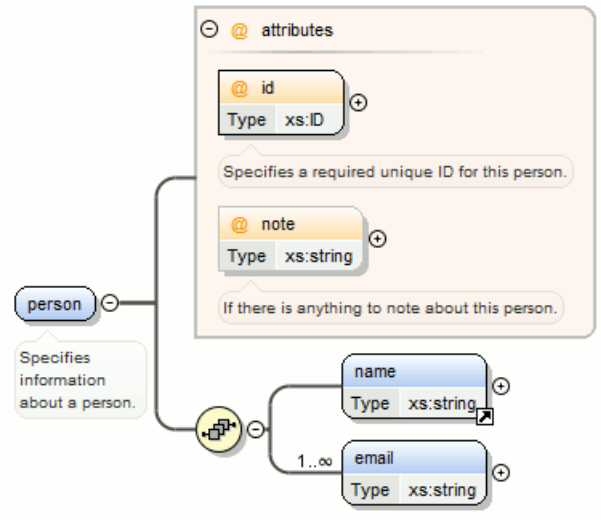


Figure 176: Extracting a Global Attribute

If you use the **Extract Global Attribute** action on a `note` attribute, the result is:

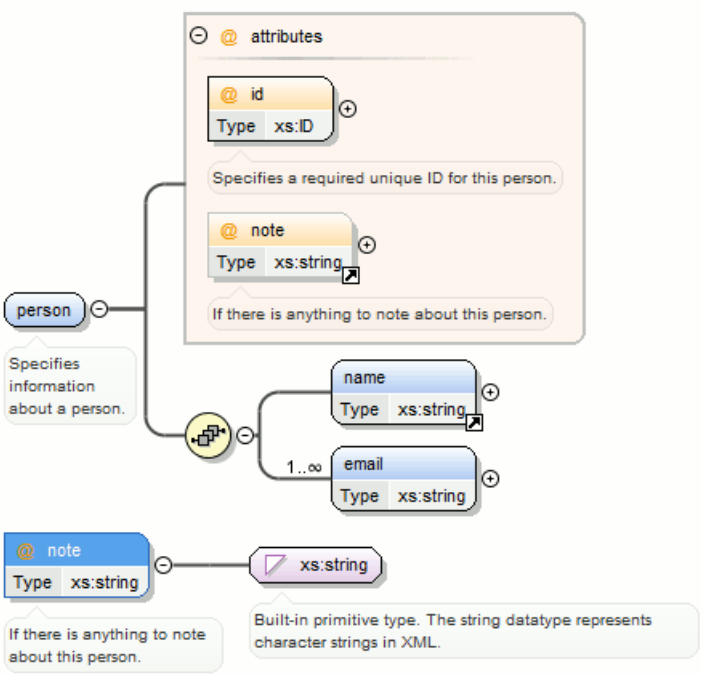
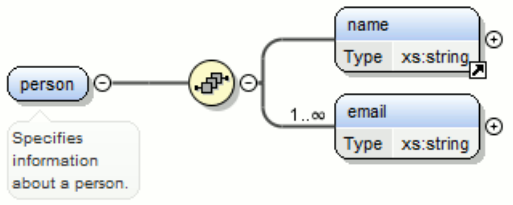


Figure 177: Extracting a Global Attribute on a `note` Attribute

Extract Global Group

Action available for compositors (sequence, choice, all). This action extracts a global group and makes a reference to it. The action is available only if the parent of the compositor is not a group.



If you use the **Extract Global Group** action on the `sequence` element, the **Extract Global Component** dialog box is displayed and you can choose a name for the group. If you type `personGroup`, the result is:

Figure 178: Extracting a Global Group

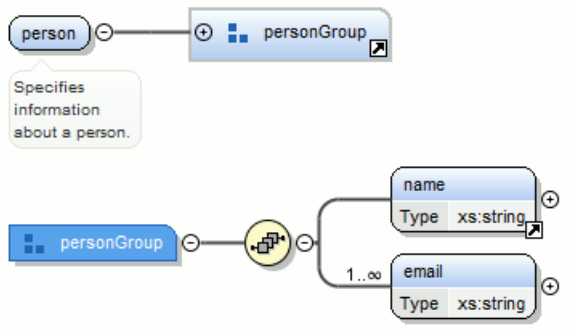


Figure 179: Extracting a Global Gropu on a `sequence` Element

Extract Global Type

Action used to extract an anonymous simple type or an anonymous complex type as global. For anonymous complex types, the action is available on the parent element.

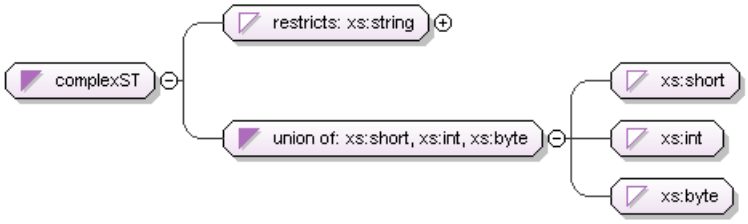


Figure 180: Extracting a Global Simple Type

If you use the action on the `union` component and choose `numericST` for the new global simple type name, the result is:

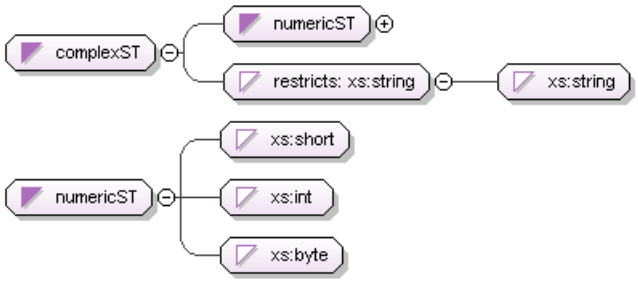


Figure 181: Extracting a Global Simple Type on a `union` Component

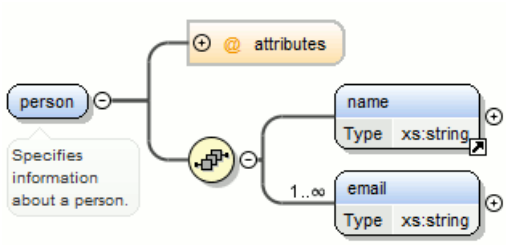


Figure 182: Extracting a Global Complex Type

If you use the action on a `person` element and choose `person_type` for the new complex type name, the result is:

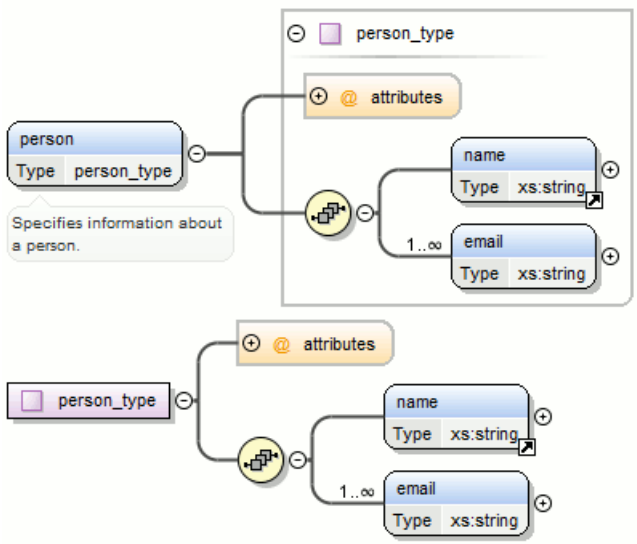


Figure 183: Extracting a Global Complex Type on a `person` Element

Rename Component in

Rename the selected component.

Cut Ctrl + X (Command + X on OS X)

Cut the selected component(s).

Copy Ctrl + C (Command + C on OS X)

Copy the selected component(s).

Copy XPath

This action copies an XPath expression that identifies the selected element or attribute in an instance XML document of the edited schema and places it in the clipboard.

Paste Ctrl + V (Command + V on OS X)

Paste the component(s) from the clipboard as children of the selected component.

Paste as Reference

Create references to the copied component(s). If not possible a warning message is displayed.

Remove (Delete)

Remove the selected component(s).

Override component

Copies the overridden component in the current XML Schema. This option is available for `xs:override` components.

Redefine component

The referenced component is added in the current XML Schema. This option is available for `xs:redefine` components.

Optional

Can be performed on element/attribute/group references, local attributes, elements, compositors, and element wildcards. The `minOccurs` property is set to 0 and the `use` property for attributes is set to `optional`.

Unbounded

Can be performed on element/attribute/group references, local attributes, elements, compositors, and element wildcards. The `maxOccurs` property is set to `unbounded` and the `use` property for attributes is set to `required`.

Search

Can be performed on local elements or attributes. This action makes a reference to a global element or attribute.

Search References

Searches all references of the item found at current cursor position in the defined scope if any.

Search References in

Searches all references of the item found at current cursor position in the specified scope.

Search Occurrences in File

Searches all occurrences of the item found at current cursor position in the current file.

Component Dependencies

Opens the **Component Dependencies** view that allows you to see the dependencies for the current selected component.

Resource Hierarchy

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the hierarchy for the current selected resource.

Flatten Schema

Recursively adds the components of included Schema files to the main one. It also flattens every imported XML Schema from the hierarchy.

Resource Dependencies

Allows you to see the dependencies for the current selected resource.

Expand All

Recursively expands all sub-components of the selected component.

Collapse All

Recursively collapses all sub-components of the selected component.

Save as Image

Save the diagram as image, in JPEG, BMP, SVG or PNG format.

Generate Sample XML Files

Generate XML files using the current opened schema. The selected component is the XML document root. See more in the Generate Sample XML Files section.

Options

Show the Schema preferences panel.

XML Schema Components

A schema diagram contains a series of interconnected components. To quickly identify the relation between two connected components, the connection is represented as:

- A thick line to identify a connection with a required component (in the following image, `family` is a required element).

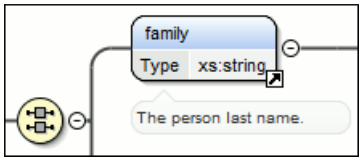


Figure 184: Example: Required Component

- A thin line to identify a connection with an optional component (in the following image, `email` is an optional element).

Figure 185: Example: Optional Component

The following topics explain in detail all available components and their symbols as they appear in an XML schema diagram.

xs:schema

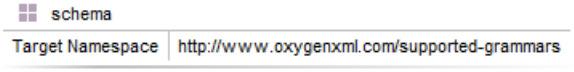


Figure 186: The *xs:schema* Component

Defines the root element of a schema. A schema document contains representations for a collection of schema components, such as type definitions and element declarations, that have a common target namespace. See more info at http://www.w3.org/TR/xmlschema11-1/#element-schema.

By default, it displays the *targetNamespace* property when rendered.

Table 7: *xs:schema* Properties

Property Name	Description	Possible Values
Target Namespace	The schema target namespace.	Any URI
Element Form Default	Determining whether or not local element declarations will be namespace-qualified by default.	qualified, unqualified, [Empty]. Default value is unqualified.
Attribute Form Default	Determining whether or not local attribute declarations will be namespace-qualified by default.	qualified, unqualified, [Empty]. Default value is unqualified.
Block Default	Default value of the *block* attribute of *xs:element* and *xs:complexType*.	#all, extension, restriction, substitution, restriction extension, restriction substitution, extension substitution, restriction extension substitution, [Empty].
Final Default	Default value of the *final* attribute of *xs:element* and *xs:complexType*.	#all, restriction, extension, restriction extension, [Empty].
Default Attributes	Specifies a set of attributes that apply to every complex Type in a schema document.	Any.
Xpath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
Version	Schema version	Any token.
ID	The schema ID	Any ID.
Component	The edited component name.	Not editable property.
SystemID	The schema system ID	Not editable property.

xs:element

Figure 187: The *xs:element* Component

Defines an element. An element declaration is an association of a name with a type definition, either simple or complex, an (optional) default value and a (possibly empty) set of identity-constraint definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-element.

An element by default displays the following properties when rendered in the diagram: *default*, *fixed*, *abstract* and *type*. When referenced or declared locally, the element graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the element are drawn using dotted lines if the element is optional.

Table 8: *xs:element* Properties

Property Name	Description	Possible Values	Mentions
Name	The element name. Always required.	Any NCName for global or local elements, any *QName* for element references.	If missing, will be displayed as '[element]' in diagram.

Property Name	Description	Possible Values	Mentions
Is Reference	When set, the local element is a reference to a global element.	true/false	Appears only for local elements.
Type	The element type.	All declared or built-in types. In addition, the following anonymous types are available: [ST-restriction], [ST-union], [ST-list], [CT-anonymous], [CT-extension SC], [CT-restriction SC], [CT-restriction CC], [CT-extension CC].	For all elements. For references, the value is set in the referenced element.
Base Type	The extended/restricted base type.	All declared or built-in types	For elements with complex type, with simple or complex content.
Mixed	Defines if the complex type content model will be mixed.	true/false	For elements with complex type.
Content	The content of the complex type.	simple/complex	For elements with complex type that extends/restricts a base type. It is automatically detected.
Content Mixed	Defines if the complex content model will be mixed.	true/false	For elements with complex type that has a complex content.
Default	Default value of the element. A default value is automatically assigned to the element when no other value is specified.	Any string	The fixed and default attributes are mutually exclusive.
Fixed	A simple content element may be fixed to a specific value using this attribute. A fixed value is also automatically assigned to the element and you cannot specify another value.	Any string	The fixed and default attributes are mutually exclusive.
Min Occurs	Minimum number of occurrences of the element.	A numeric positive value. Default value is 1	Only for references/local elements
Max Occurs	Maximum number of occurrences of the element.	A numeric positive value. Default value is 1	Only for references/local elements
Substitution Group	Qualified name of the head of the substitution group that this element belongs to.	All declared elements. For XML Schema 1.1 this property supports multiple values.	For global and reference elements

Property Name	Description	Possible Values	Mentions
Abstract	Controls whether or not the element may be used directly in instance XML documents. When set to true, the element may still be used to define content models, but it must be substituted through a substitution group in the instance document.	true/false	For global elements and element references
Form	Defines if the element is "qualified" (belongs to the target namespace) or "unqualified" (doesn't belong to any namespace).	unqualified/qualified	Only for local elements
Nillable	When this attribute is set to true, the element can be declared as nil using an *xsi:nil* attribute in the instance documents.	true/false	For global elements and element references
Target Namespace	Specifies the target namespace for local element and attribute declarations. The namespace URI may be different from the schema target namespace. This property is available for local elements only.	Not editable property.	For all elements.
Block	Controls if the element can be subject to a type or substitution group substitution. '#all' blocks any substitution, 'substitution' blocks any substitution through substitution groups and 'extension'/'restriction' block any substitution (both through *xsi:type* and substitution groups) by elements or types, derived respectively by extension or restriction from the type of the element. Its default value is defined by the *blockDefault* attribute of the parent *xs:schema*.	#all, restriction, extension,substitution, extension restriction, extension substitution, restriction substitution, restriction extension substitution	For global elements and element references

Property Name	Description	Possible Values	Mentions
Final	Controls whether the element can be used as the head of a substitution group for elements whose types are derived by extension or restriction from the type of the element. Its default value is defined by the *finalDefault* attribute of the parent *xs:schema*.	#all, restriction, extension, restriction extension, [Empty]	For global elements and element references
ID	The component ID.	Any ID	For all elements.
Component	The edited component name.	Not editable property.	For all elements.
Namespace	The component namespace.	Not editable property.	For all elements.
System ID	The component system ID.	Not editable property.	For all elements.

xs:attribute

Figure 188: The *xs:attribute* Component

Defines an attribute. See more info at http://www.w3.org/TR/xmlschema11-1/#element-attribute.

An attribute by default displays the following properties when rendered in the diagram: *default*, *fixed*, *use* and *type*. Connectors to the attribute are drawn using dotted lines if the attribute use is optional. The attribute name is stroked out if prohibited.

Table 9: *xs:attribute* Properties

Property Name	Description	Possible Value	Mentions
Name	Attribute name. Always required.	Any NCName for global/ local attributes, all declared attributes' *QName* for references.	For all local or global attributes. If missing, will be displayed as '[attribute]' in the diagram.
Is Reference	When set, the local attribute is a reference.	true/false	For local attributes.
Type	Qualified name of a simple type.	All global simple types and built-in simple types. In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for creating anonymous simple types more easily.	For all attributes. For references, the type is set to the referenced attribute.

Property Name	Description	Possible Value	Mentions
Default	Default value. When specified, an attribute is added by the schema processor (if it is missing from the instance XML document) and it is given this value. The default and fixed attributes are mutually exclusive.	Any string	For all local or global attributes. For references the value is from the referenced attribute.
Fixed	When specified, the value of the attribute is fixed and must be equal to this value. The default and fixed attributes are mutually exclusive.	Any string	For all local or global attributes. For references the value is from the referenced attribute.
Use	Possible usage of the attribute. Marking an attribute "prohibited" is useful to exclude attributes during derivations by restriction.	optional, required, prohibited	For local attributes
Form	Specifies whether or not the attribute is qualified (must have a namespace prefix in the instance XML document). The default value for this attribute is specified by the *attributeFormDefault* attribute of the *xs:schema* document element.	unqualified/qualified	For local attributes.
Inheritable	Specifies if the attribute is inheritable. Inheritable attributes can be used by <alternative> element on descendant elements.	true/false	For all local or global attributes. The default value is false. This property is available for XML Schema 1.1.
Target Namespace	Specifies the target namespace for local attribute declarations. The namespace URI may be different from the schema target namespace.	Any URI	Setting a target namespace for local attribute is useful only when restricts attributes of a complex type that is declared in other schema with a different target namespace. This property is available for XML Schema 1.1.
ID	The component ID.	Any ID	For all attributes.
Component	The edited component name.	Not editable property.	For all attributes.
Namespace	The component namespace.	Not editable property.	For all attributes.

Property Name	Description	Possible Value	Mentions
System ID	The component system ID.	Not editable property.	For all attributes.

xs:attributeGroup

Figure 189: The *xs:attributeGroup* Component

Defines an attribute group to be used in complex type definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-attributeGroup.

Table 10: *xs:attributeGroup* Properties

Property Name	Description	Possible Values	Mentions
Name	Attribute group name. Always required.	Any NCName for global attribute groups, all declared attribute groups for reference.	For all global or referenced attribute groups. If missing, will be displayed as '[attributeGroup]' in diagram.
ID	The component ID.	Any ID	For all attribute groups.
Component	The edited component name.	Not editable property.	For all attribute groups.
Namespace	The component namespace.	Not editable property.	For all attribute groups.
System ID	The component system ID.	Not editable property.	For all attribute groups.

xs:complexType

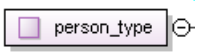


Figure 190: The *xs:complexType* Component

Defines a top level complex type. Complex Type Definitions provide for: See more data at http://www.w3.org/TR/xmlschema11-1/#element-complexType.

- Constraining element information items by providing Attribute Declarations governing the appearance and content of attributes.
- Constraining element information item children to be empty, or to conform to a specified element-only or mixed content model, or else constraining the character information item children to conform to a specified simple type definition.
- Using the mechanisms of Type Definition Hierarchy to derive a complex type from another simple or complex type.
- Specifying post-schema-validation infoset contributions for elements.
- Limiting the ability to derive additional types from a given complex type.
- Controlling the permission to substitute, in an instance, elements of a derived type for elements declared in a content model to be of a given complex type.

Tip: A complex type that is a base type to another type will be rendered with yellow background.

Table 11: *xs:complexType* Properties

Property Name	Description	Possible Values	Mentions
Name	The name of the complex type. Always required.	Any NCName	Only for global complex types. If missing, will be displayed as '[complexType]' in diagram.
Base Type Definition	The name of the extended/restricted types.	Any from the declared simple or complex types.	For complex types with simple or complex content.
Derivation Method	The derivation method.	restriction/ extension	Only when base type is set. If the base type is a simple type, the derivation method is always extension.
Content	The content of the complex type.	simple/ complex	For complex types that extend/restrict a base type. It is automatically detected.
Content Mixed	Specifies if the complex content model will be mixed.	true/false	For complex contents.
Mixed	Specifies if the complex type content model will be mixed.	true/false	For global and anonymous complex types.
Abstract	When set to *true*, this complex type cannot be used directly in the instance documents and needs to be substituted using an *xsi:type* attribute.	true/false	For global and anonymous complex types.
Block	Controls if a substitution (either through a *xsi:type* or substitution groups) can be performed for a complex type, which is an extension or a restriction of the current complex type. This attribute can only block such substitutions (it cannot "unblock" them), which can also be blocked in the element definition. The default value is defined by the *blockDefault* attribute of *xs:schema*.	all, extension, restriction, extension restriction, [Empty]	For global complex types.
Final	Controls whether the complex type can be further derived by extension or restriction to create new complex types.	all, extension, restriction, extension restriction, [Empty]	For global complex types.

Property Name	Description	Possible Values	Mentions
Default Attributes Apply	The *schema* element can carry a *defaultAttributes* attribute, which identifies an attribute group. Each *complexType* defined in the schema document then automatically includes that attribute group, unless this is overridden by the *defaultAttributesApply* attribute on the *complexType* element.	true/false	This property is available only for XML Schema 1.1.
ID	The component ID.	Any ID	For all complex types.
Component	The edited component name.	Not editable property.	For all complex types.
Namespace	The component namespace.	Not editable property.	For all complex types.
System ID	The component system ID.	Not editable property.	For all complex types.

xs:simpleType

Figure 191: The *xs:simpleType* Component

Defines a simple type. A simple type definition is a set of constraints on strings and information about the values they encode, applicable to the normalized value of an attribute information item or of an element information item with no element children. Informally, it applies to the values of attributes and the text-only content of elements. See more info at http://www.w3.org/TR/xmlschema11-1/#element-simpleType.

Tip: A simple type that is a base type to another type will be rendered with yellow background.

Table 12: *xs:simpleType* Properties

Name	Description	Possible Values	Scope
Name	Simple type name. Always required.	Any NCName.	Only for global simple types. If missing, will be displayed as '[simpleType]' in diagram.
Derivation	The simple type category: restriction, list or union.	restriction,list or union	For all simple types.
Base Type	A simple type definition component. Required if derivation method is set to restriction.	All global simple types and built-in simple types. In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to restriction.

Name	Description	Possible Values	Scope
Item Type	A simple type definition component. Required if derivation method is set to list.	All global simple types and built-in simple types(from schema for schema). In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to list. Derivation by list is the process of transforming a simple datatype (named the item type) into a whitespace-separated list of values from this datatype. The item type can be defined inline by adding a simpleType definition as a child element of the list element, or by reference, using the itemType attribute (it is an error to use both).
Member Types	Category for grouping union members.	Not editable property.	For global and anonymous simple types with the derivation method set to union.
Member	A simple type definition component. Required if derivation method is set to union.	All global simple types and built-in simple types(from schema for schema). In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to union. Deriving a simple datatype by union merges the lexical spaces of several simple datatypes (called member types) to create a new simple datatype. The member types can be defined either by reference (through the memberTypes attribute) or embedded as simple datatype local definitions in the xs:union element. Both styles can be mixed.
Final	Blocks any further derivations of this datatype (by list, union, derivation or all).	#all, list, restriction, union, list restriction, list union, restriction union. In addition, [Empty] proposal is present for set empty string as value.	Only for global simple types.
ID	The component ID.	Any ID.	For all simple types
Component	The name of the edited component.	Not editable property.	Only for global and local simple types
Namespace	The component namespace.	Not editable property.	For global simple types.

Name	Description	Possible Values	Scope
System ID	The component system ID.	Not editable property.	Not present for built-in simple types..

xs:alternative

The *type alternatives* mechanism allows you to specify type substitutions on an element declaration.

Note: *xs:alternative* is available for XML Schema 1.1.

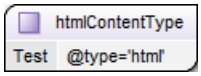


Figure 192: The *xs:alternative* Component

Table 13: *xs:alternative* Properties

Name	Description	Possible Values
Type	Specifies type substitutions for an element, depending on the value of the attributes.	All declared or built-in types. In addition, the following anonymous types are available: [ST-restriction], [ST-union], [ST-list], [CT-anonymous], [CT-extension SC], [CT-restriction SC], [CT-restriction CC], [CT-extension CC].
Test	Specifies an XPath expression. If the XPath condition is valid, the specified type is selected as the element type. The expressions allowed are limited to a subset of XPath 2.0. Only the attributes of the current element and inheritable attributes from ancestor elements are accessible in the XPath expression. When you edit this property, the content completion list of proposals offers XPath expressions.	An XPath expression.
XPath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
ID	Specifies the component ID.	Any ID.
Component	Specifies the type of XML schema component.	Not editable property.
System ID	Points to the document location of the schema.	Not editable property.

xs:group

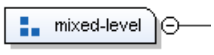


Figure 193: The *xs:group* Component

Defines a group of elements to be used in complex type definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-group.

When referenced, the graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the group are drawn using dotted lines if the group is optional.

Table 14: *xs:group* Properties

Property Name	Description	Possible Values	Mentions
Name	The group name. Always required.	Any NCName for global groups, all declared groups for reference.	If missing, will be displayed as '[group]' in diagram.
Min Occurs	Minimum number of occurrences of the group.	A numeric positive value. Default value is 1.	Appears only for reference groups.
Max Occurs	Maximum number of occurrences of the group.	A numeric positive value. Default value is 1.	Appears only for reference groups.
ID	The component ID.	Any ID	For all groups.
Component	The edited component name.	Not editable property.	For all groups.
Namespace	The component namespace.	Not editable property	For all groups.
System ID	The component system ID.	Not editable property.	For all groups.

xs:include

Figure 194: The *xs:include* Component

Adds multiple schemas with the same target namespace to a document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-include.

Table 15: *xs:include* properties

Property Name	Description	Possible Values
Schema Location	Included schema location.	Any URI
ID	Include ID.	Any ID
Component	The component name.	Not editable property.

xs:import

Figure 195: The *xs:import* Component

Adds multiple schemas with a different target namespace to a document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-import.

Table 16: *xs:import* Properties

Property Name	Description	Possible Values
Schema Location	Imported schema location	Any URI
Namespace	Imported schema namespace	Any URI

Property Name	Description	Possible Values
ID	Import ID	Any ID
Component	The component name	Not editable property.

xs:redefine

Figure 196: The *xs:redefine* Component

Redefines simple and complex types, groups, and attribute groups from an external schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-redefine.

Table 17: *xs:redefine* Properties

Property Name	Description	Possible Values
Schema Location	Redefine schema location.	Any URI
ID	Redefine ID	Any ID
Component	The component name.	Not editable property.

xs:override

Figure 197: The *xs:override* Component

The override construct allows replacements of old components with new ones without any constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-override.

Table 18: *xs:override* Properties

Property Name	Description	Possible Values
Schema Location	Redefine schema location.	Any URI
ID	Redefine ID	Any ID

xs:notation

Figure 198: The *xs:notation* Component

Describes the format of non-XML data within an XML document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-notation.

Table 19: *xs:notation* Properties

Property Name	Description	Possible values	Mentions
Name	The notation name. Always required.	Any NCName.	If missing, will be displayed as '[notation]' in diagram.
System Identifier	The notation system identifier.	Any URI	Required if public identifier is absent (otherwise, optional).

Property Name	Description	Possible values	Mentions
Public Identifier	The notation public identifier.	A Public ID value	Required if system identifier is absent (otherwise, optional).
ID	The component ID.	Any ID	For all notations.
Component	The edited component name.	Not editable property.	For all notations.
Namespace	The component namespace.	Not editable property.	For all notations.
System ID	The component system ID.	Not editable property.	For all notations.

xs:sequence / xs:choice / xs:all

Figure 199: *xs:sequence*

xs:sequence specifies that the child elements must appear in a sequence. Each child element can occur from 0 to any number of times. See more info at http://www.w3.org/TR/xmlschema11-1/#element-sequence.

Figure 200: *xs:choice*

xs:choice allows only one of the elements contained in the declaration to be present within the containing element. See more info at http://www.w3.org/TR/xmlschema11-1/#element-choice.

Figure 201: *xs:all*

xs:all specifies that the child elements can appear in any order. See more info at http://www.w3.org/TR/xmlschema11-1/#element-all.

The compositor graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the compositor are drawn using dotted lines if the compositor is optional.

Table 20: *xs:sequence*, *xs:choice*, *xs:all* Properties

Property Name	Description	Possible Values	Mentions
Compositor	Compositor type.	sequence, choice, all.	'all' is only available as a child of a group or complex type.
Min Occurs	Minimum occurrences of compositor.	A numeric positive value. Default is 1.	The property is not present if compositor is 'all' and is child of a group.
Max Occurs	Maximum occurrences of compositor.	A numeric positive value. Default is 1.	The property is not present if compositor is 'all' and is child of a group.
ID	The component ID.	Any ID	For all compositors.
Component	The edited component name.	Not editable property.	For all compositors.

Property Name	Description	Possible Values	Mentions
System ID	The component system ID.	Not editable property.	For all compositors.

xs:any

Figure 202: The *xs:any* Component

Enables the author to extend the XML document with elements not specified by the schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-any.

The graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the wildcard are drawn using dotted lines if the wildcard is optional.

Table 21: *xs:any* Properties

Property Name	Description	Possible Values
Namespace	The list of allowed namespaces. The namespace attribute expects a list of namespace URIs. In this list, two values have a specific meaning: '##targetNamespace' stands for the target namespace, and '##local' stands for local attributes (without namespaces).	##any, ##other, ##targetNamespace, ##local or anyURI
notNamespace	Specifies the namespace that extension elements or attributes cannot come from.	##local, ##targetNamespace
notQName	Specifies an element or attribute that is not allowed.	##defined
Process Contents	Type of validation required on the elements allowed for this wildcard.	skip, lax, strict
Min Occurs	Minimum occurrences of any	A numeric positive value. Default is 1.
Max Occurs	Maximum occurrences of any	A numeric positive value. Default is 1.
ID	The component ID.	Any ID.
Component	The name of the edited component.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:anyAttribute

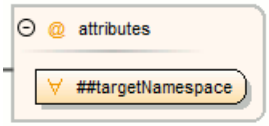


Figure 203: The *xs:anyAttribute* Component

Enables the author to extend the XML document with attributes not specified by the schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-anyAttribute.

Table 22: *xs:anyAttribute* Properties

Property Name	Description	Possible Value
Namespace	The list of allowed namespaces. The namespace attribute expects a list of namespace URIs. In this list, two values have a specific meaning: '##targetNamespace' stands for the target namespace, and '##local' stands for local attributes (without namespaces).	##any, ##other, ##targetNamespace, ##local or anyURI
Process Contents	Type of validation required on the elements allowed for this wildcard.	skip, lax, strict
ID	The component ID.	Any ID.
Component	The name of the edited component.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:unique

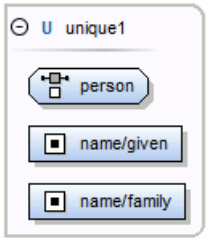


Figure 204: The *xs:unique* Component

Defines that an element or an attribute value must be unique within the scope. See more info at http://www.w3.org/TR/xmlschema11-1/#element-unique.

Table 23: *xs:unique* Properties

Property Name	Description	Possible Values
Name	The unique name. Always required.	Any NCName.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:key

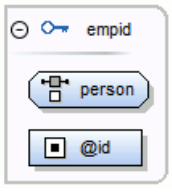


Figure 205: The *xs:key* Component

Specifies an attribute or element value as a key (unique, non-nullable and always present) within the containing element in an instance document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-key.

Table 24: *xs:key* Properties

Property Name	Description	Possible Value
Name	The key name. Always required.	Any NCName.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:keyRef

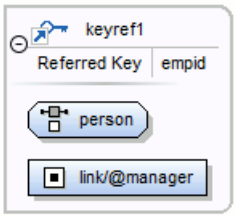


Figure 206: The *xs:keyRef* Component

Specifies that an attribute or element value corresponds to that of the specified key or unique element. See more info at http://www.w3.org/TR/xmlschema11-1/#element-keyref.

A keyref by default displays the *Referenced Key* property when rendered.

Table 25: *xs:keyRef* Properties

Property Name	Description	Possible Values
Name	The keyref name. Always required.	Any NCName.
Referenced Key	The name of referenced key.	any declared element constraints.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:selector

Figure 207: The *xs:selector* Component

Specifies an XPath expression that selects a set of elements for an identity constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-selector.

Table 26: *xs:selector* Properties

Property Name	Description	Possible Values
XPath	Relative XPath expression identifying the element that the constraint applies to.	An XPath expression.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:field

Figure 208: The *xs:field* Component

Specifies an XPath expression that specifies the value used to define an identity constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-field.

Table 27: *xs:field* Properties

Property Name	Description	Possible Values
XPath	Relative XPath expression identifying the field(s) composing the key, key reference, or unique constraint.	An XPath expression.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:assert

Assertions provide a flexible way to control the occurrence and values of elements and attributes available in an XML Schema.

Note: *xs:assert* is available for XML Schema 1.1.

Figure 209: The *xs:assert* Component

Table 28: *xs:assert* Properties

Property Name	Description	Possible Values
Test	Specifies an XPath expression. If the XPath condition is valid, the specified type is selected as the element type. The expressions allowed are limited to a subset of XPath 2.0. Only the attributes of the current element and inheritable attributes from ancestor elements are accessible in the XPath expression. When you edit this property, the content completion list of proposals offers XPath expressions.	An XPath expression.
XPath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
ID	Specifies the component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:openContent

Figure 210: The *xs:openContent* Component

The *openContent* element enables instance documents to contain extension elements to be inserted amongst the elements declared by the schema. You can declare open content for your elements at one place (within the *complexType* definition) or at the schema level.

For further details about the *openContent* component, go to http://www.w3.org/TR/xmlschema11-1/#element-openContent.

Table 29: *xs:openContent* Properties

Property Name	Description	Possible Value
Mode	Specifies where the extension elements can be inserted.	The value can be: "interleave", "suffix" or "none". The default value is "interleave".
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

Note: This component is available for XML Schema 1.1 only. To change the version of the XML Schema, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema**.

Constructs Used to Group Schema Components

This section explains the components that can be used for grouping other schema components:

- Attributes
- Constraints

- Substitutions

Attributes

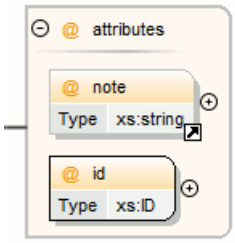


Figure 211: Attributes Construct

Groups all attributes and attribute groups belonging to a complex type.

Table 30: *attributes* Properties

Property Name	Description	Possible Values
Component	The element for which the attributes are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Constraints

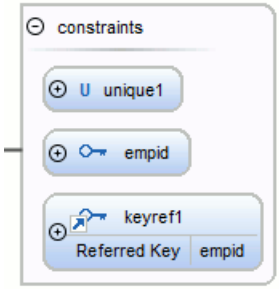


Figure 212: Constraints Construct

Groups all constraints (*xs:key*, *xs:keyRef* or *xs:unique*) belonging to an element.

Table 31: *constraints* Properties

Property Name	Description	Possible Values
Component	The element for which the constraints are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Substitutions

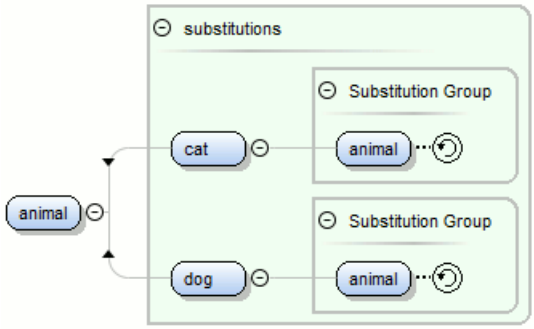


Figure 213: Substitutions Construct

Groups all elements that can substitute the current element.

Table 32: *substitutions* Properties

Property Name	Description	Possible Values
Component	The element for which the substitutions are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Schema Validation

Validation for the **Design** mode is seamlessly integrated in the Oxygen XML Editor plugin XML documents validation capability.

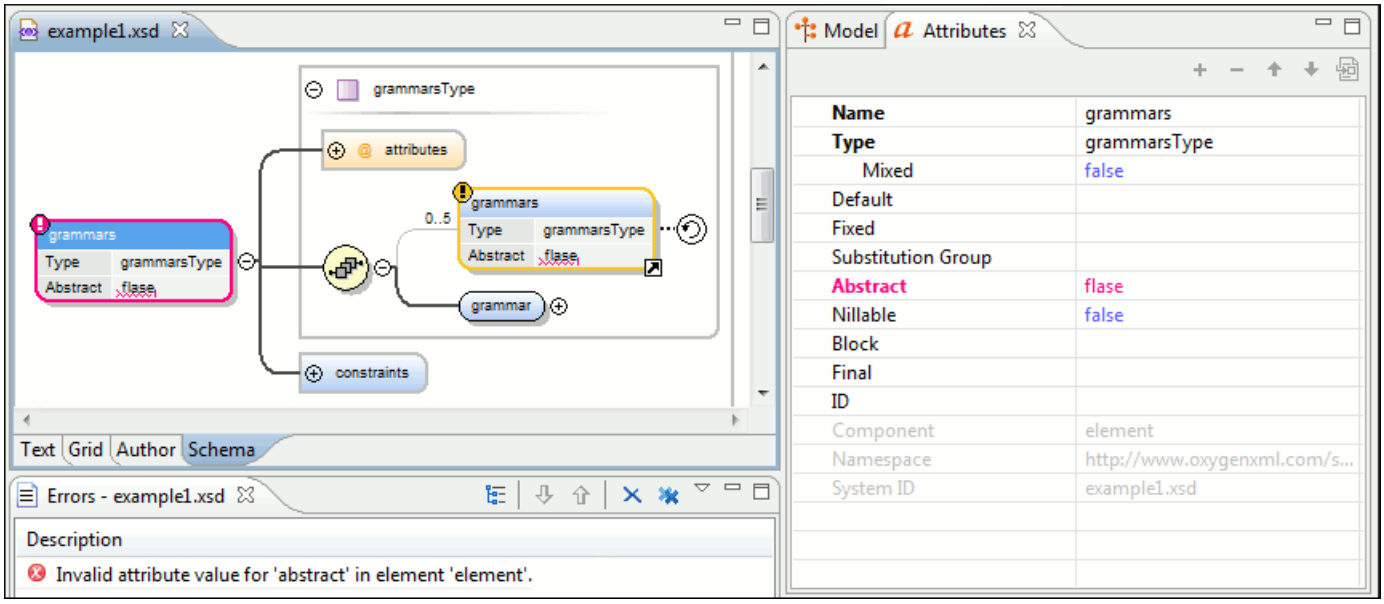


Figure 214: XML Schema Validation

A schema validation error is presented by highlighting the invalid component:

- In the Attributes View.
- In the diagram by surrounding the component that has the error with a red border.

Invalid facets for a component are highlighted in the Facets View.

Components with invalid properties are rendered with a red border. This is a default color, but you can customize it in the Document checking user preferences. When hovering an invalid component, the tooltip will present the validation errors associated with that component.

When editing a value that is supposed to be a qualified or unqualified XML name, the application provides automatic validation of the entered value. This proves to be very useful in avoiding setting invalid XML names for the given property.

If you validate the entire schema using the **Validate** action from the **XML** menu or from the **Validation** toolbar drop-down menu, all validation errors will be presented in the **Errors** tab. To resolve an error, just click it (or double-click for errors located in other schemas) and the corresponding schema component will be displayed as the diagram root so that you can easily correct the error.

Important: If the schema imports only the namespace of other schema without specifying the schema location and a catalog is set-up that maps the namespace to a certain location both the validation and the diagram will correctly identify the imported schema.

Tip: If the validation action finds that the schema contains unresolved references, the application will suggest the use of validation scenarios, but only if the current edited schema is an XML Schema module.

Edit Schema Namespaces

You can use the **XML Schema Namespaces** dialog box to easily set a target namespace and define namespace mappings for a newly created XML Schema. In the **Design** mode these namespaces can be modified anytime by choosing **Edit Schema Namespaces** from the contextual menu. You can also do this by double-clicking the schema root in the diagram.

The **XML Schema Namespaces** dialog box allows you to edit the following information:

- **Target namespace** - The target namespace of the schema.
- **Prefixes** - The dialog box displays a table with namespaces and the mapped prefixes. You can add a new prefix mapping or remove an already existing one.

Working with Documents

7

Topics:

- Creating and Working with Documents
- Simple Text Editor
- Using Projects to Group Documents
- Finding and Replacing Text
- Spell Checking
- AutoCorrect Misspelled Words
- Working with Special Characters
- Handling Read-Only Files
- Viewing Status Information
- Editor Highlights

Oxygen XML Editor plugin includes a variety of general features that can be used when working with any type of document. More specialized features are available when working with specific type of documents, such as the various types of XML documents, CSS, JavaScript, Markdown, and more. For details about those specialized features for specific types of documents, see Editing Specific Document Types on page 403.

This chapter includes information about how to create and work with documents, working with projects, and various editing features that are provided in Oxygen XML Editor plugin for all document types. This chapter also includes information about some of the special tools that are included in Oxygen XML Editor plugin, such as the file and directory comparison tools.

Creating and Working with Documents

Oxygen XML Editor plugin includes various features, actions, and wizards to assist you with creating new files and working with existing files. This section explains many of these features, including information on creating new documents, opening, saving, and closing existing files, searching documents, viewing file properties, and more.

Creating New Documents and Templates

Oxygen XML Editor plugin includes a helpful **New Document** wizard that allows you to customize and create new files from a large list of document types and predefined templates. You can also create your own templates and share them with others.

New Document Wizard

Oxygen XML Editor plugin supports a wide range of document types. The **New Document** wizard presents the default associations between a file extension and the type of editor that opens the file. The **New Document** wizard creates a skeleton document that may contain a root element, the document prolog, and possibly other child elements depending on options that are specific for each schema type. The wizard also provides access to the **New from Templates** option that opens a wizard where you can create a document based upon predefined templates or custom templates.

New Document Wizard

To create a new document in Oxygen XML Editor plugin, follow these steps:

1. Click the **New** button on the toolbar or select **File** > **New** > **Other** > **Oxygen XML Editor plugin**.

Result: The **New Document** wizard is displayed with all the supported document types.

2. Select the type of document that you want to create. Oxygen XML Editor plugin includes a series of Eclipse wizards that help you create the new document based upon the type you choose.

   Tip: You can use the text filter field at the top of the dialog box to search for a specific template.
3. Click the **Next** button.

   Result: The next wizard page allows you to select a path where you want to store the new file and for some document types it includes some customization options. If you selected **XML File** or **XML Schema (XSD) File** for the type of document, you need to select the storage path and click **Next** again to reach customization options.

   Note: For DITA documents, the dialog box includes some additional options for generating a title, file name, and root ID attribute. For more information, see Creating a New DITA Topic on page 1502.
4. After configuring the options for the particular type of document, click **Finish** to create the file. If the **Open file for editing when done** option is selected, the new file will be opened in the appropriate editor.

New XML Document Wizard

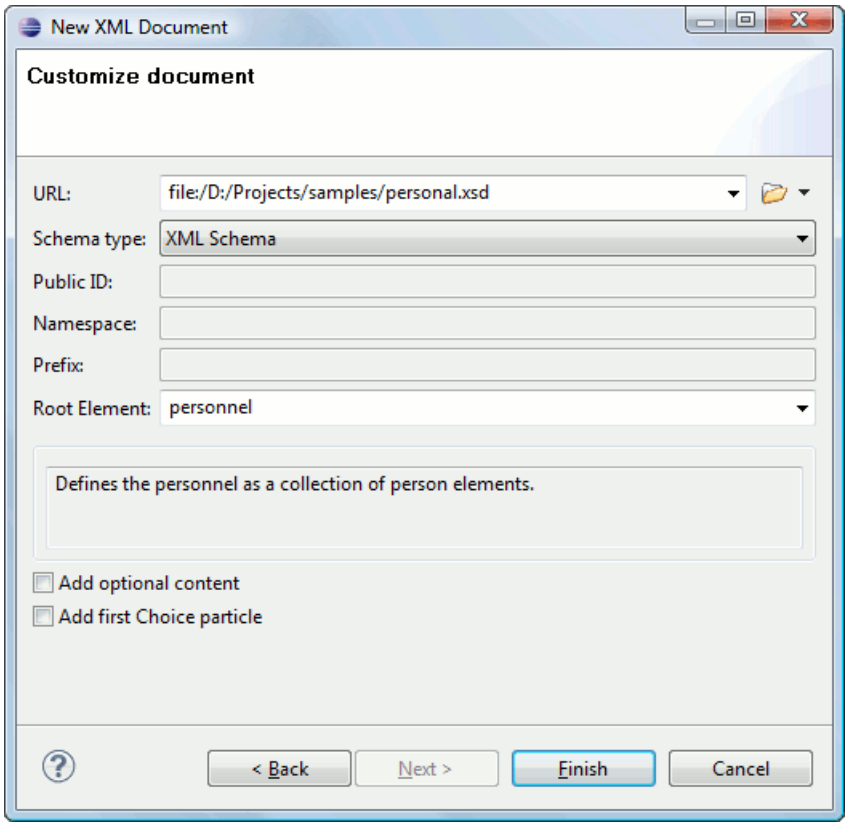


Figure 215: New XML File Configuration Options

If you selected **XML File** for the type of document you want to create, the wizard will include the following options:

- **URL** - Specifies the path to the schema file. When you select a file, Oxygen XML Editor plugin analyzes its content and tries to fill in the rest of the dialog box.
- **Schema Type** - Allows you to select the schema type. The following options are available: `XML Schema`, `DTD`, `RelaxNG XML syntax`, `RelaxNG compact syntax`, and `NVDL`.
- **Public ID** - Specifies the PUBLIC identifier declared in the document prolog.
- **Namespace** - Specifies the document namespace.
- **Prefix** - Specifies the prefix for the namespace of the document root.
- **Root Element** - Populated with elements defined in the specified schema, enables selection of the element used as document root.

- **Description pane** - A small description of the selected document root.
- **Add Optional Content** - If you select this option, the elements and attributes defined in the XML Schema as optional are generated in the skeleton XML document.
- **Add First Choice Particle** - If you select this option, Oxygen XML Editor plugin generates the first element of an `xs:choice` schema element in the skeleton XML document. Oxygen XML Editor plugin creates this document in a new editor panel when you click **Finish**.

XSL Document Wizard

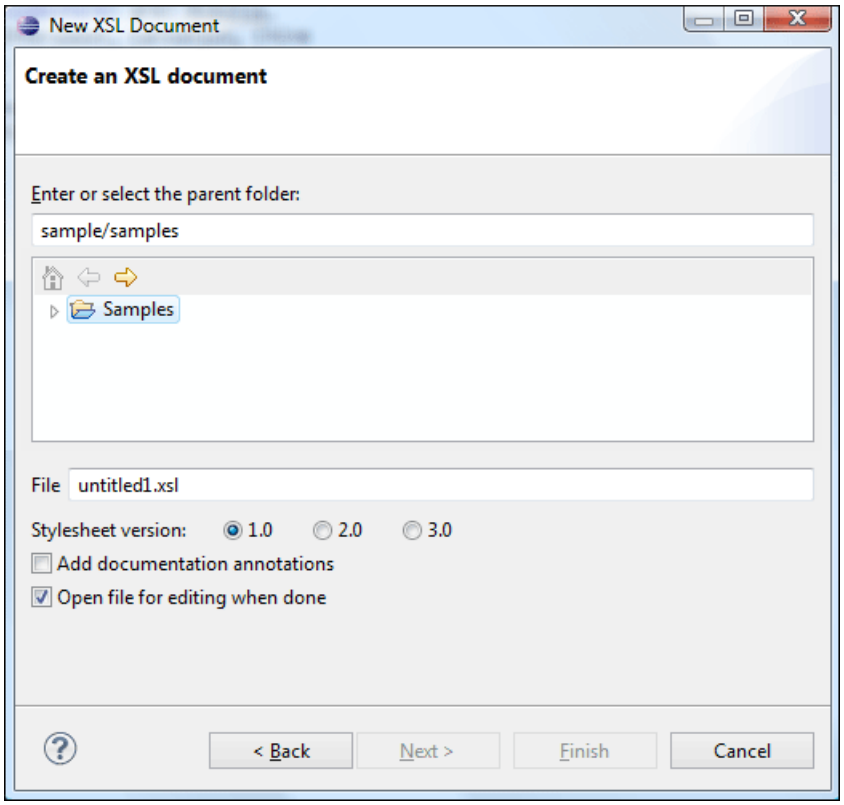


Figure 216: New XSL Document Configuration Options

If you selected **Stylesheet (XSL) File** for the type of file you want to create, the wizard will include the following options:

- **Stylesheet version** - Allows you to select the Stylesheet version number. You can select from: `1.0`, `2.0`, and `3.0`.
- **Add documentation annotations** - Select this option to generate the stylesheet annotation documentation.

XML Schema (XSD) Document Wizard

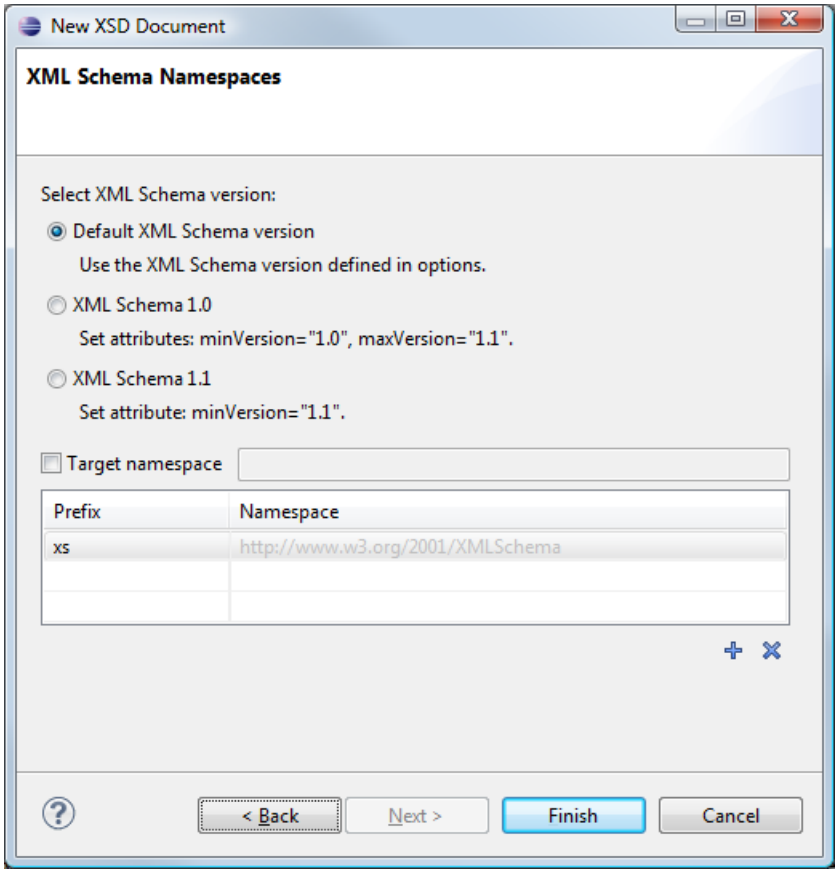


Figure 217: New XML Schema Configuration Options

If you selected **XML Schema (XSD) File** for the type of file you want to create, the wizard will include the following options:

- **Default XML Schema version** - Select this option to use the XML Schema version defined in the **XML Schema** preferences page.
- **XML Schema 1.0** - Sets the `minVersion` attribute to **1.0** and the `maxVersion` attribute to **1.1**.
- **XML Schema 1.1** - Sets the `minVersion` attribute to **1.1**.
- **Target namespace** - Allows you to specify the schema target namespace.
- **Namespace prefix declaration table** - This table contains namespace prefix declarations. Table information can be managed using the **New** and **Delete** buttons.

  Tip: For further details on how you can set the version of an XML Schema, go to Setting the XML Schema Version.

Schematron Document Wizard

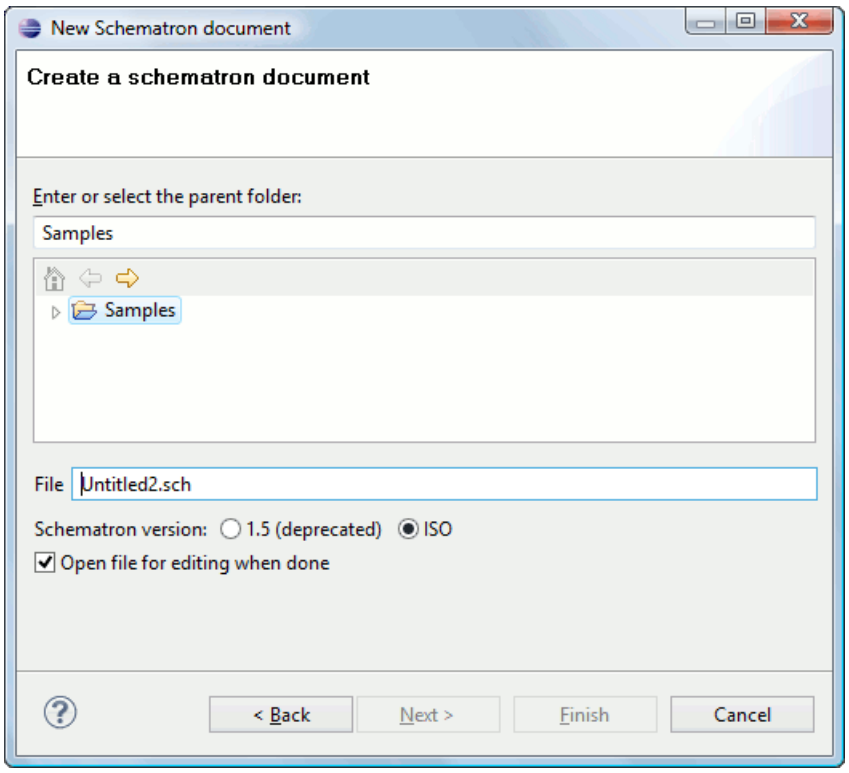


Figure 218: New Schematron Configuration Options

If you selected **Schematron File** for the type of file you want to create and selected the **Customize** option, the configuration dialog box will include the following option:

- **Schematron version** - Specifies the Schematron version. Possible options: `1.5` (deprecated) and `ISO`.

  Note: Starting with version 16.0 of Oxygen XML Editor plugin, the support for Schematron 1.5 is deprecated. It is recommended to use ISO Schematron instead.

Creating New Documents Based on Templates

The **New from Templates** wizard allows you to select predefined templates or custom templates that you or other users created in previous sessions. You can access this wizard by selecting the **New from Templates** option in the **New Document** wizard.

The categories of templates presented in the wizard include:

- **User-defined template directory** - You can add your own custom templates by creating template files in a directory and then add that directory to the list of template directories that Oxygen XML Editor plugin uses in the **Document Templates** preferences page. This user-defined directory will appear in the **New from templates** wizard.
- **Global templates** - Contains a list of predefined templates as well as any user-defined custom templates that are saved in the `templates` directory of the Oxygen XML Editor plugin installation folder (*`[OXYGEN_INSTALL_DIR]`*`/templates`).
- **Framework templates** - Contains the list of templates defined in the **Document Type** configuration dialog box (**Templates** tab) for each *framework*.

New from Templates Wizard

To create a new document using this wizard, follow these steps:

1. Click the **New** button on the toolbar and select **New from Templates** (or select **File** > **New** > **Other** > **Oxygen XML Editor plugin** > **New From Templates**).

Result: The **New from Templates** wizard is displayed where you to select various types of document templates.

2. Select the type of document that you want to create and click **Next**.
3. Choose the storage path and a file name for the new document.
4. Click the **Finish** button.

   Result: The new file is created and if the **Open file for editing when done** option is selected, the new file will be opened in the appropriate type of editor.

Creating New Document Templates

Oxygen XML Editor plugin allows you to create your own custom document templates and they will appear in the **Global templates** folder (or another specified folder) within the **New from templates** wizard.

Creating a New Document Template

To create your own custom document template and have it appear in the new document wizard, follow these steps:

1. Create a new file (whatever type of document you need) and customize it to become a starting point for creating new files of this type.

   Tip: You can use editor variables in the template file content and they will be expanded when the files are opened.
2. Save the new document template in one of the following locations:

   - The `templates` directory of the Oxygen XML Editor plugin installation directory (*`[OXYGEN_INSTALL_DIR]`*`/templates`). Document templates saved in this directory will appear in the **Global templates** category in the **New from templates** wizard.
   - You can also use any other directory of your choice, but you must add that directory to the list of templates in the **Document Templates** preferences page. This user-defined directory will appear in the **New from templates** wizard along with all the new document templates that you save inside it.

   Attention: The name that you use to save the template will be the name that appears in the new document wizard, including capitalization, space, and characters (for example, `My Custom Template1.xml` will appear in the new file wizard as **My Custom Template1**).
3. Open the new document wizard (**New** toolbar button or **File** > **New** > **New from Templates**) and you should see your custom template in the appropriate folder.

   Note: For DITA templates, they will also appear in the dialog box for creating new DITA topics from the **DITA Maps Manager**, but if you customize the template, you need to set the `type` property to **dita** in the corresponding properties file.

Related Information:

Customizing Document Templates on page 366

Customizing Document Templates

Oxygen XML Editor plugin allows you to customize certain aspects of predefined or custom document templates. For example, you can customize the icons or specify a prefix/suffix that will be used for the proposed file name in the **New from templates** wizard.

Customizing the Icons for a Document Template

If you want to customize the icons to be used for document templates, use a properties file to specify the icons using the following procedure:

1. Create a new properties file or edit an existing one.

   - If you create a new properties file, use the same name as the template file except with a `.properties` extension (for example, `MyTemplate.properties`). This properties file will specify the paths to the icons that will be used in the new file wizard. You can find some examples in the `templates` directory of the Oxygen XML Editor plugin installation directory to help you get started.

When defining the icons, the properties file should look like this:

```
type=general
smallIcon=../icons/Article_16.png
bigIcon=../icons/Article_48.png
```

Important: For DITA files, the `type` property needs to be set to **dita**. Otherwise, the template will not appear in the dialog box for creating new DITA topics from the **DITA Maps Manager**. For all other types of files, set it to **general**. The icons specified in this properties file will only be used for the new file wizards and not in any other part of the interface.

Note: If you created a new template and chose to use a custom directory for the new template (in step 2 of the new template procedure), make sure the path to the icons is relative to that directory.

- If you edit an existing template, simply define the icon paths as specified above.

2. Save the properties file in the same directory as the document template.
3. Open the new file wizard (**File** > **New** > **New from Templates**) and you should see your custom icons next to the document template in the appropriate folder.

Add a Prefix or Suffix to File Names for a Document Template

You can use a properties file for each document template to add a prefix or suffix to the file name that is proposed in certain dialog boxes when you create a new file from that template. This applies to the following new document dialog boxes:

- The new document dialog box that appears when you click the **New** button on the toolbar (or **File** > **New** > **Other** > **Oxygen XML Editor plugin**). The prefix or suffix is added to the name of the file in the **File** field.
- The new document dialog box that appears when you select **New** > **New from Templates** > **[Template Name]** > **Next** from the contextual menu in the **Navigator** view. The prefix or suffix is added to the name of the file in the **File** field.
- For DITA files, it also applies to the new document dialog box that appears when you select **Append Child** > **New**, **Insert Before** > **New**, or **Insert After** > **New** from the **DITA Maps Manager**. The prefix or suffix is added to the name of the file in the **Save as** field.
- For DITA files, it also applies to the **Fast Create Topics** dialog box that you can use to create multiple skeleton topics at once.

To add a prefix or suffix to the file names for a document template, follow these steps:

1. Create a new properties file or edit an existing one.
   - If you create a new properties file, use the same name as the template file except with a `.properties` extension (for example, `MyTemplate.properties`). This properties file will specify the prefix/suffix that will be used to propose the file name in the new file wizards.

     When defining the prefix/suffix, the properties file should look something like this:

     ```
     type=general
     filenamePrefix=prod_
     filenameSuffix=_test
     ```

     Important: For DITA files, the `type` property needs to be set to **dita**. For all other types of files, set it to **general**.
   - If you edit an existing template, simply define the prefix/suffix as specified above.
2. Save the properties file in the same directory as the document template.
3. Open the new document wizard (using the methods described above) and when you select the appropriate template, you should see your prefix or suffix in the file name that is proposed in that dialog box.

Configure the Displayed Names for Document Templates

To change the name that is displayed for a document template, use the following procedure:

1. Create a new properties file or edit an existing one. If you create a new properties file, use the same name as the template file except with a `.properties` extension (for example, `MyTemplate.properties`).

2. Add a `displayName` property in the properties file:

```
displayName=myTemplateName
```

Tip: The names for *framework*-specific document templates (such as DITA *Topic* or DocBook *Article* as you would see in the **Framework templates** section in the **New** file wizard) can be translated via the internationalization support. In this case, the properties file should contain something like:

```
displayName=${i18n(tag)}
```

where *tag* refers to an entry in the `translation.xml` file for that specific framework (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/i18n/translation.xml` for DITA).

3. Save the properties file in the same directory as the document template.
4. Open the new file wizard (**File** > **New** > **New from Templates**) and you should see the new name for the template.

Adding Placeholders or Hints in a Document Template

Document templates sometimes contain empty elements and it may not be clear to the Author what should be inserted. You can define placeholders in document templates that provide hints for Authors to help them understand what type of content should be added in any particular empty element within the document. The placeholder text is specified using a processing instruction and the placeholders are removed when the Author inserts content in the corresponding element.

To define placeholders in a document template to provide authors with hints, follow this procedure:

1. Edit the document template.
2. Add placeholders in the form of processing instructions within the elements where you want hints to be displayed when an Author creates a document from the template. For example:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE topic PUBLIC "-//OASIS//DTD DITA Topic//EN" "topic.dtd">
<topic id="pi">
  <title><?oxy-placeholder content="Please give a title"?></title>
    <shortdesc><?oxy-placeholder content="Writing short descriptions
         induces the writer to clarify the main thesis of the topic.
         We recommended a 50 word limit."?></shortdesc>
  <body>
    <p><?oxy-placeholder content="A paragraph element should be a self-contained
         unit dealing with one idea or point."?></p>
  </body>
</topic>
```

3. Save the template file.
4. Use the **New from templates** wizard to create a new document using your customized template and you should see the hints in the opened document.

Related Information:

Creating New Document Templates on page 366

Opening Documents

To open a document in Oxygen XML Editor plugin, do one of the following:

- Go to **File** > **Open File** to display the **Open File** dialog box.
- Go to **File** > **Open URL** to display a dialog box where you can specify a URL (defined by a protocol, host, resource path, and an optional port) or use the browsing tools in the **Browse for remote file** drop-down menu.
- Select the **Open** or **Open with** action from the contextual menu of the **Navigator** view.

Opening the Current Document in a System Application

To open the currently edited document in the associated system application, use the **View in Browser/System Application** action that is available in the **XML** menu. If you want to open XML files in a specific internet browser, instead of the associated system application, you can specify the internet browser to be used. To do so, go to

Window > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.

Saving Documents

You can save the document you are editing with one of the following actions:

- **File** > **Save**.
- **File** > **Save As** - Displays the **Save As** dialog box, used either to name and save an open document to a file or to save an existing file with a new name.
- **File** > **Save All** - Saves all open documents.

Opening and Saving Remote Documents

Oxygen XML Editor plugin supports editing remote files, using the FTP, SFTP, and WebDAV protocols. You can edit remote files in the same way you edit local files.

You can open one or more remote files in the **Open using FTP/SFTP** dialog box

A WebDAV resource can be locked when it is opened in Oxygen XML Editor plugin by selecting the **Lock WebDAV files on open** option to prevent other users to modify it concurrently on the server. If a user tries to edit a locked file, Oxygen XML Editor plugin displays an error message that contains the lock owner's name. The lock is released automatically when the editor for that resource is closed in Oxygen XML Editor plugin.

To avoid conflicts with other users when you edit a resource stored on a SharePoint server, you can **Check Out** the resource.

To improve the transfer speed, the content exchanged between Oxygen XML Editor plugin and the HTTP / WebDAV server is compressed using the GZIP algorithm.

The current WebDAV Connection details can be saved by switching to the **Database** *perspective* and then you can browse and manage the connection in the **Data Source Explorer** view.

Open URL

To access the **Open using FTP/SFTP/WebDAV** dialog box, go to **File** > **Open URL** menu, then choose the **Browse for remote file** option from the drop-down action list.

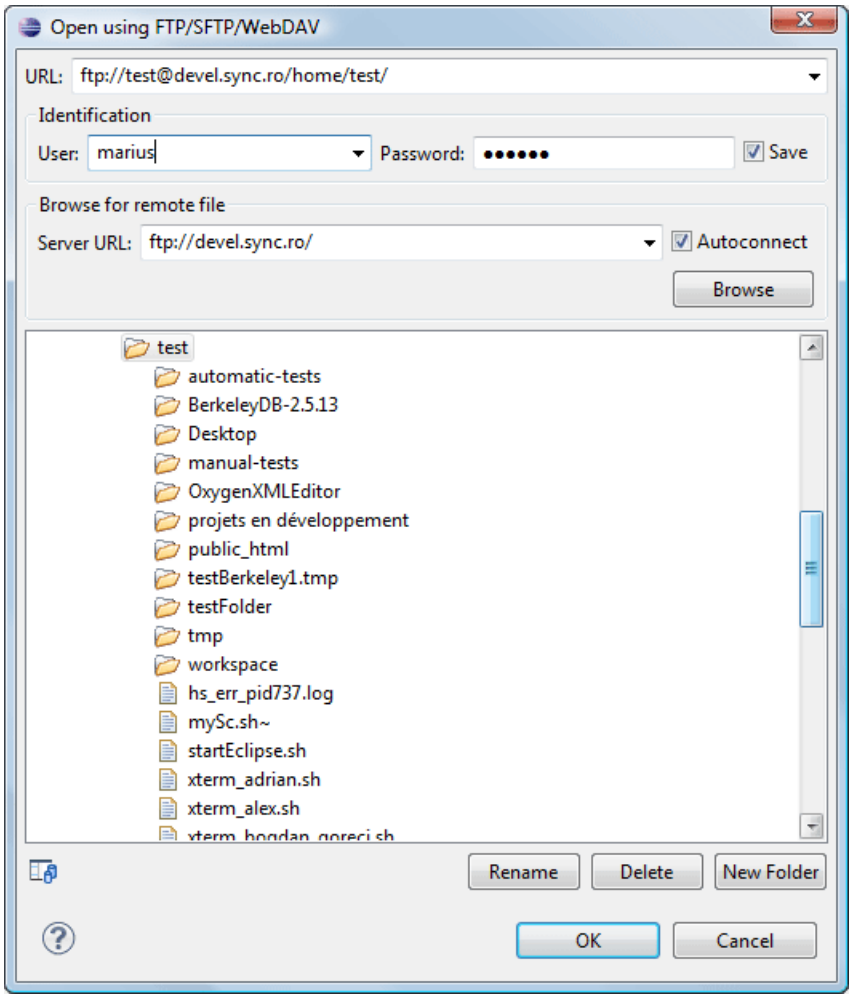


Figure 219: Open URL Dialog Box

The displayed dialog box is composed of several parts:

- The editable **URL** combo box, in which you specify the URL to be opened or saved.

  Tip: If the file is accessible through an anonymous FTP, you can type a URL like: `ftp://anonymous@some.site/home/test.xml`.

  This combo box also displays the current selection when you change selection by browsing the tree of folders and files on the server.
- The **Identification** section contains the access credentials. If you want to browse for a file on a server, you have to specify the user and password. This information is bound to the selected URL and is also used in opening or saving the file. If the **Save** checkbox is selected, the user and password are saved between editing sessions. The password is encrypted and kept in the options file.

  Note: Your password is well protected. If the options file is used on another machine by a user with a different user name the password, it will become unreadable since the encryption is user-name dependent. This is also true if you add URLs to your project that include a user and password.
- The **Browse for remote file** section contains the **Server URL** combo box and **Autoconnect** checkbox. In the **Server URL** combo box, you can specify the protocol, the server host name, or server IP.

  Tip: When accessing a FTP server, you only need to specify the protocol and the host (such as `ftp://server.com` or if using a non-standard port `ftp://server.com:7800/`).

  By pressing the **Browse** button, the directory listing will be shown in the component. When **Autoconnect** is selected, every time the dialog box is displayed, the browse action will be performed.
- The bottom part of the dialog box displays the tree view of the documents stored on the server. You can browse the directories and make multiple selections. Additionally, you can use the **Rename**, **Delete**, and **New Folder** actions to manage the file repository.

The file names are sorted in a case-insensitive manner.

Changing File Permissions on a Remote FTP Server

Some FTP servers allow the modification of permissions of the files served over the FTP protocol. This protocol feature is accessible directly in the FTP file browser dialog box by right-clicking a tree node and selecting the *Change permissions* menu item.

In this dialog box, the usual Unix file permissions *Read*, *Write*, and *Execute* are granted or denied for the file owner, owner group, and the rest of the users. The aggregate number of permissions is updated in the *Permissions* text field when it is modified with one of the checkboxes.

WebDAV over HTTPS

If you want to access a WebDAV repository across a non-secure network, Oxygen XML Editor plugin allows you to load and save the documents over the HTTPS protocol (if the server understands this protocol) so that any data exchange with the WebDAV server is encrypted.

When a WebDAV repository is first accessed over HTTPS, the server hosting the repository will present a security certificate as part of the HTTPS protocol, without any user intervention. Oxygen XML Editor plugin will use this certificate to decrypt any data stream received from the server. For the authentication to succeed you should make sure the security certificate of the server hosting the repository can be read by Oxygen XML Editor plugin. This means that Oxygen XML Editor plugin can find the certificate in the key store of the Java Runtime Environment in which it runs. You know the server certificate is not in the JRE key store if you get the error *No trusted certificate found* when trying to access the WebDAV repository.

Troubleshooting HTTPS

When Oxygen XML Editor plugin cannot connect to an HTTPS-capable server, most likely there is no certificate set in the *Java Runtime Environment (JRE)* that Oxygen XML Editor plugin runs into. The following procedure describes how to:

- Export a certificate to a local file using any HTTPS-capable Web browser (for example, Internet Explorer).
- Import the certificate file into the JRE using the *keytool* that comes bundled with Oxygen XML Editor plugin.

Tip: To make Oxygen XML Editor plugin accept a certificate even if it is invalid, open the **Preferences** dialog box , go to **Network Connection settings** > **HTTP(S)/WebDAV**, and select the **Automatically accept a security certificate, even if invalid** option.

Notice: This **Automatically accept a security certificate, even if invalid** option does not influence the entire Eclipse workspace. It is limited to URLs that are opened directly by Oxygen XML Editor plugin.

1. Export the certificate into a local file
   a) Point your HTTPS-aware Web browser to the repository URL.

      If this is your first visit to the repository it will be displayed a security alert stating that the security certificate presented by the server is not trusted.

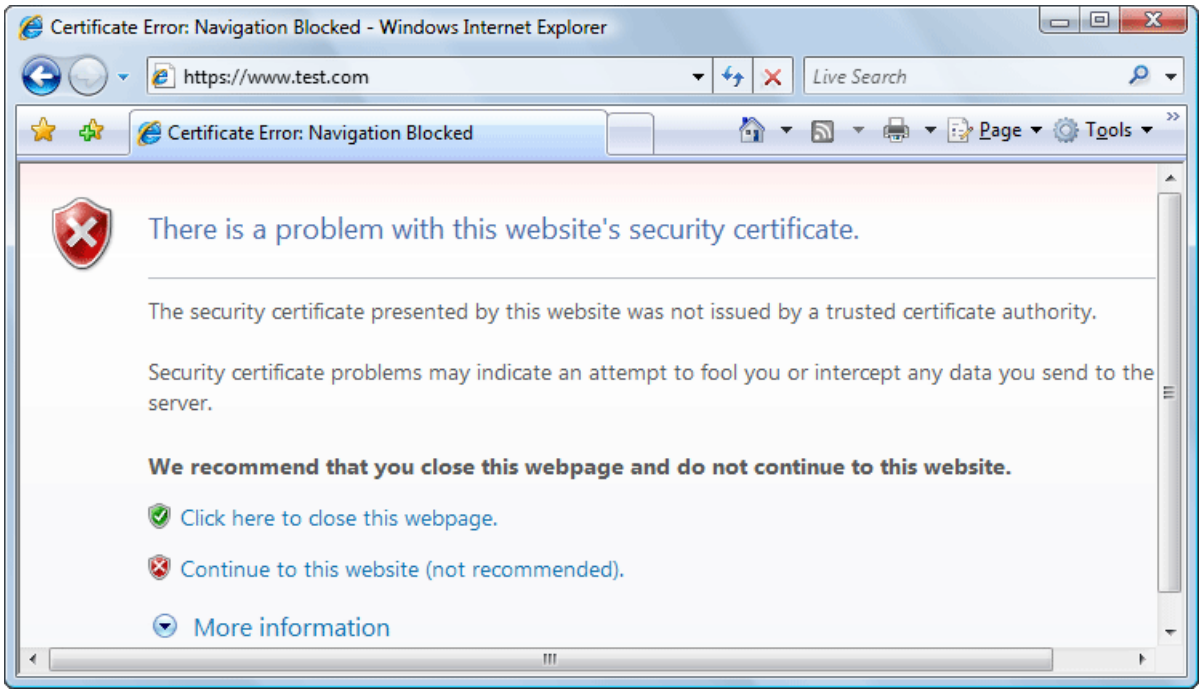


Figure 220: Security alert - untrusted certificate

b) Go to menu **Tools** > **Internet Options**.
Internet Options dialog box is opened.
c) Select **Security** tab.
d) Select **Trusted sites** icon.
e) Press **Sites** button.
This will open **Trusted sites** dialog box.
f) Add repository URL to **Websites** list.
g) Close the **Trusted sites** and **Internet Options** dialog boxes.
h) Try again to connect to the same repository URL in Internet Explorer.
The same error page as above will be displayed.
i) Select **Continue to this website** option.
A clickable area with a red icon and text **Certificate Error** is added to Internet Explorer address bar.
j) Click the **Certificate Error** area.
A dialog box containing a **View certificates** link is displayed.
k) Click the **View certificates** link.
Certificate dialog box is displayed.
l) Select **Details** tab of **Certificate** dialog box.
m) Press **Copy to File** button.
Certificate Export Wizard is started.
n) Follow indications of wizard for DER encoded binary X.509 certificate. Save certificate to local file `server.cer`.

2. Import the local file into the JRE running Oxygen XML Editor plugin.
   a) Open a text-mode console with administrative rights.

      If Oxygen XML Editor plugin has been installed in a user's home directory and includes a bundled JRE, administrative rights are not required. In all other cases administrative rights will be required.
   b) Go to the `lib/security` directory of the JRE running Oxygen XML Editor plugin. You find the home directory of the JRE in the *java.home* property that is displayed in the **About** dialog box (**Installation Details** > **Configuration**). On Mac OS X systems, the `lib/security` directory is usually located in `/System/Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home` directory.

      On OS X, if you have installed a distribution of Oxygen XML Editor plugin that is not bundled with a JRE, a JRE from Apple is required. The Apple Java version 1.6 stores the certificates in `/System/Library/Java/Support/CoreDeploy.bundle/Contents/Home/lib/security/cacerts` with a symbolic

link pointing to it from `/System/Library/Java/JavaVirtualMachines/1.6.0.jdk/Contents/Home/lib/security/cacerts`.

On OS X, if you have installed a distribution of Oxygen XML Editor plugin that bundles the JRE from Oracle, the JRE uses the `.install4j/jre.bundle/Contents/Home/jre/lib/security/cacerts` path within its installation directory.

c) Run the following command:

```
..\..\bin\keytool -import -trustcacerts -file server.cer -keystore cacerts
```

The `server.cer` file contains the server certificate, created during the previous step. The *keytool* requires a password before adding the certificate to the JRE *keystore*. The default password is `changeit`. If someone changed the default password, then that person is the only one who can perform the import.

Tip: If you need to import multiple certificates, you need to specify a different alias for each additional imported certificate with the `-alias` command line argument, as in the following example:

```
..\..\bin\keytool -import -alias myalias1 -trustcacerts -file
server1.cer -keystore cacerts

..\..\bin\keytool -import -alias myalias2 -trustcacerts -file
server2.cer -keystore cacerts
```

3. Restart Oxygen XML Editor plugin.

Related Information:

HTTP(S)/WebDAV Preferences on page 98

HTTP Authentication Schemes

Oxygen XML Editor plugin supports the following HTTP authentication schemes:

- **Basic** - The *basic* authentication scheme defined in the RFC2617 specifications.
- **Digest** - The *digest* authentication scheme defined in the RFC2617 specifications.
- **NTLM** - The *NTLM* scheme is a proprietary Microsoft Windows Authentication protocol (considered to be the most secure among currently supported authentication schemes).

  Note: For NTLM authentication, the user name must be preceded by the name of the domain it belongs to, as in the following example:

  ```
  domain\username
  ```

- **Kerberos** - An authentication protocol that works on the basis of *tickets* to allow nodes communicating over a non-secure network to prove their identity to one another in a secure manner.

Single Sign-on

Oxygen XML Editor plugin implements the *Single sign-on* property (meaning that you can log on once and gain access to multiple services without being prompted to log on for each of them), based on the **Kerberos** protocol and relies on a *ticket-granting ticket (TGT)* that Oxygen XML Editor plugin obtains from the operating system.

Restriction: This *Single sign-on* support is not available for SharePoint integrations.

To turn on the **Kerberos**-based authentication, you need to add the following system property in the `eclipse.ini` configuration file (on a separate line after the `-vmargs` parameter):

```
-Djavax.security.auth.useSubjectCredsOnly=false
```

Closing Documents

To close open documents, use one of the following actions that are available in the contextual menu of the current editor tab (or from the **File** menu):

Close (Ctrl + F4 (Command + F4 on OS X))

Closes the currently selected editor.

Close Others

If multiple files are opened, this action is available to close all opened editors in the current group/stack of tabs except for the one you are currently viewing.

Close All (Ctrl + Shift + F4 (Command + Shift + F4 on OS X))

If multiple files are opened, this action is available to close all opened editors in the current group/stack of tabs. If this action is selected from the **File** menu, it closes all opened editors in **all** groups/stacks of tabs.

Contextual Menu of the Current Editor Tab

A contextual menu is available when you right-click the current editor tab label.

The actions that are available depend on the context and the number of files that are opened. The menu includes the following actions:

Close (Ctrl + F4 (Command + F4 on OS X))

Closes the currently selected editor.

Close Others

If multiple files are opened, this action is available to close all opened editors in the current group/stack of tabs except for the one you are currently viewing.

Close All (Ctrl + Shift + F4 (Command + Shift + F4 on OS X))

If multiple files are opened, this action is available to close all opened editors.

Viewing File Properties

The **Editor Properties** view displays information about the currently edited document. The information includes:

- Character encoding.
- Full path on the file system.
- Schema used for content completion and document validation.
- Document type name and path.
- Associated transformation scenario.
- Read-only state of a file.
- Bidirectional text (left to right and right to left) state.
- Total number of characters in the document.
- Line width.
- Indent with tabs state.
- Indent size.

The view can be accessed from **Window** > **Show View** > **Other** > **Editor Properties**.

To copy a value from the **Editor Properties** view in the clipboard (for example, the full file path), use the **Copy** action available on the contextual menu of the view.

Simple Text Editor

While Oxygen XML Editor plugin specializes in XML-related technologies, you can also use it to create and edit various types of non-XML files. Non-XML files are opened in a simple text editor and many of the helpful features that are commonly used when editing XML files in the Oxygen XML Editor plugin **Text** editing mode are available in this simple editor.

Types of Non-XML Files That are Supported in the Simple Text Editor

Some of the types of non-XML files that can be created and edited in the simple text editor include:

- Java

- C++
- C
- PHP
- Perl
- Properties
- SQL
- Shell executables
- Batch
- Python
- Text

Features Available in the Simple Text Editor

When editing files in the simple text editor, the features that are available include the following:

- **Project Support** - The unique features that are designed to help you work with projects are available for all types of files.
- **Shortcut Actions** - Many of the shortcut actions that are available in **Text** mode are also available in the simple text editor.
- **Drag and Drop** - The normal drag and drop support is available in the simple text editor.
- **Content Selection Features** - The content selection shortcuts that are available in **Text** mode are also available in the simple text editor.
- **Convert Hexadecimal Characters** - You can convert a sequence of hexadecimal characters to the corresponding Unicode character.
- **Encoding/Decoding Actions** - Contextual menu actions are available to encode or decode Base64, Base 32, and Hex schemes.
- **Code Templates** - You can define your own code templates for any type of file and use the *Content Completion Assistant* to invoke them.
- **Syntax Highlighting** - Non-XML files also support syntax highlighting with dedicated coloring schemes. To customize them, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**. Select and expand the appropriate section in the top pane for the type of file you are editing and you can see the effects of your changes in the **Preview** pane.
- **Find/Replace** - You can use the **Find/Replace** action to find or replace all the occurrences of a word or string of characters in any type of file that you are editing.

Using Projects to Group Documents

Oxygen XML Editor plugin includes a **Navigator** view that helps you organize your projects. Oxygen XML Editor plugin offers a variety of helpful features for working with projects and makes it easy to share your projects with other members of your team. This section presents various unique features that will help you to create and work with projects.

Creating a New Project

Oxygen XML Editor plugin allows you to organize your XML-related files into projects. This helps you manage and organize your files and also allows you to perform batch operations (such as validation and transformation) over multiple files. Use the **Navigator** view to manage projects, and the files and folders contained within.

Creating a New Project

To create a new project, select **New** > **XML Project** or **New** > **Sample XML Project** from the contextual menu or **File** menu. This opens a dialog box that allows you to create and customize a new project and adds it to the structure of the project in the **Navigator** view.

Adding Items to the Project

To add items to the project, select the desired document type or folder from the **New** menu of the contextual menu, when invoked from the **Navigator** view (or from the **File** menu). You can also create a document from a template by selecting **New** > **New from Templates** from the contextual menu.

Using Linked Folders (Shortcuts)

Another easy way to organize your XML working files is to place them in a directory and then to create a corresponding linked folder in you project. If you add new files to that folder, you can simply use the **Refresh (F5)** action from the toolbar or contextual menu and the **Navigator** view will display the existing files and subdirectories. If your files are scattered amongst several folders, but represent the same class of files, you might find it useful to combine them in a logical folder.

You can create linked folders (shortcuts) by dragging and dropping folders from the Windows Explorer (Mac OS X Finder) to the project tree, or by using the contextual menu from the location in the project tree where you want it added and selecting **New** > **Folder** > **Advanced**. The linked folders presented in the **Navigator** view are marked with a special icon. To create a file inside a linked folder, use the contextual menu and select **New** > **File** (you can use the **Advanced** button to link to a file in the local file system).

Note: Files may have multiple instances within the folder system, but cannot appear twice within the same folder.

For more information on managing projects and their content, see Navigator View on page 157.

Related Information:

Using Projects to Group Documents on page 375

Navigator View

The **Navigator** view is designed to assist you with organizing and managing related files grouped in the same XML project. The actions available in the contextual menu and on the toolbar associated to this panel allow you to create XML projects and provide shortcuts to various operations for the project documents.

Tip: You can also use the **Project Explorer** view for many of the same purposes as the **Navigator** view.

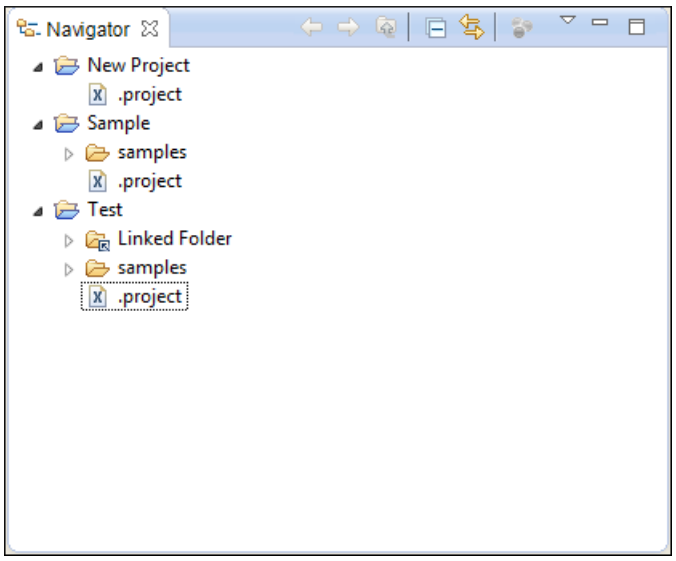


Figure 221: Navigator View

By default, the view is positioned on the left side of the Oxygen XML Editor plugin window, above the **Outline** view. If the view has been closed, it can be reopened at any time from the **Window** > **Show View** menu (the **Project Explorer** view is in the **Other** submenu).

The following actions are grouped in the upper right corner:

Collapse All

Collapses all project tree folders. You can also collapse/expand a project tree folder if you select it and press the **Enter** key or **Left Arrow** to collapse and **Right Arrow** to expand.

Link with Editor

When selected, the project tree highlights the currently edited file, if it is found in the project files.

Note: This button is disabled automatically when you move to the **Debugger** *perspective*.

View Menu

Drop-down menu that contains various settings.

The files are usually organized in an XML project as a collection of folders. There are two types of resources displayed in the **Navigator** view:

- **Physical folders and files** - marked with the operating system-specific icon for folders (usually a yellow icon on Windows and a blue icon on Mac OS X). These folders and files are mirrors of real folders or files that exist in the local file system. They are created or added to the project by using contextual menu actions (such as **New** > **File** and **New** > **Folder**).Also, the contextual menu action **Delete** can be used to remove them from the project and local file system.
- **Shortcut folders and files** - the icons for file and folder shortcuts are displayed with a shortcut symbol. They are created and added by using the actions **New** > **File** > **Advanced** or **New** > **Folder** > **Advanced** from the contextual menu or **File** menu. Also, the contextual menu action **Delete** can be used to remove them from the project (the local file system remains unchanged).

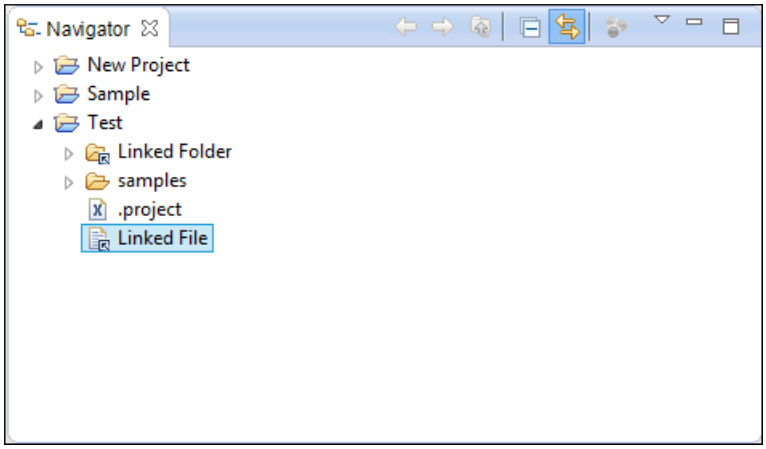


Figure 222: Navigator View with Examples of the Two Types of Resources

Creating New Projects

The following actions are available by selecting **New** from the contextual menu or **File** menu:

New > XML Project

Opens the **New XML Project** dialog box that allows you to create a new project and adds it to the project structure in the **Navigator** view.

New > Sample XML Project

Opens the **New sample XML project** dialog box that allows you to customize sample resources in a new project and adds it to the project structure in the **Navigator** view.

Creating New Project Items

To create new project items, select the desired document type or folder from the **New** menu of the contextual menu, when invoked from the **Navigator** view (or from the **File** menu or **New Drop-down menu**). You can also create a document from a template by selecting **New** > **New from Templates** from the contextual menu (or click the **New** toolbar button).

For more information about creating new files, see New Document Wizard on page 361. For more information about creating new files from templates, see Creating New Documents Based on Templates on page 365.

Managing Physical Folders and Files

You can create physical folders by selecting **New** > **Folder** from the contextual menu.

When adding files to a project, the default target is the project root. To change a target, select a new folder. Files may have multiple instances within the folder system, but cannot appear twice within the same folder.

Removing Files and Folders

To remove one or more files or folders, select them in the project tree and press the **Delete** key, or select the contextual menu action **Delete**.

CAUTION: In most cases this action is irreversible, deleting the file permanently. Under particular circumstances (if you are running a Windows installation of Oxygen XML Editor plugin and the *Recycle Bin* is active) the file is moved to *Recycle Bin*.

Moving Files and Folders

You can move the resources of the project with drag and drop operations on the files and folders of the tree.

You can also use the usual **Copy** and **Paste** actions (or the **Move** action) from the contextual menu to move resources in the **Navigator** view.

Renaming Files and Folders

There are two ways you can rename an item in the **Navigator** view. Select the item in the **Navigator** view and do one of the following:

- Invoke the **Rename** action from the contextual menu.
- Press **F2** and type the new name.

  To finish editing the item name, press **Enter**.

Locating and Opening Files

If a project folder contains a lot of documents, a certain document can be located quickly in the project tree by selecting the folder containing the desired document and typing the first few characters of the document name. The desired document is automatically selected as soon as the typed characters uniquely identify its name in the folder.

The selected document can be opened by pressing the **Enter** key, by double-clicking it, or with one of the **Open** actions from the contextual menu. The files with known document types are opened in the associated editor, while binary files are opened with the associated system application. To open a file with a known document type in an editor other than the default one, use the **Open with** action. Also, dragging and dropping files from the project tree to the editor area results in the files being opened.

Saving the Project

The project file is automatically saved every time the content of the **Navigator** view is saved or modified by actions such as adding or removing files and drag and drop.

Linked Folders

You can create linked folders (shortcuts) by dragging and dropping folders from the Windows Explorer / Mac OS X Finder to the project tree, or by using the contextual menu from the location in the project tree where you wanted it added and selecting **New** > **Folder** > **Advanced**.

To create a file inside a linked folder, use the contextual menu and select **New** > **File**. This opens the **New Document** wizard (you can use the **Advanced** button in the first wizard page to link to a file in the local file system).

Note: The linked folders presented in the **Navigator** view are marked with a special icon.

Validate Files

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be checked to be XML well-formed or validated against a schema (DTD, XML Schema, Relax NG, Schematron or NVDL) with one of the following contextual menu actions found in the **Validate** submenu:

Check Well-Formedness

Checks if the selected file or files are well-formed.

Validate

Validates the selected file or files against their associated schema. EPUB files make an exception, because this action triggers a **Validate and Check for Completeness** operation.

Validate with Schema

Validates the selected file of files against a specified schema.

Configure Validation Scenario(s)

Allows you to configure and run a validation scenario.

Clear Validation Markers

Clears all the error markers from the main editor and **Problems** view.

Applying Transformation Scenarios

The currently selected files associated with the Oxygen XML Editor plugin in the **Package Explorer** view or in the **Navigator** view can be transformed in one step with one of the following actions available from contextual menu in the **Transform** submenu:

Apply Transformation Scenario(s)

Obtains the output with one of the built-in scenarios.

Configure Transformation Scenario(s)

Opens a dialog box that allows you to configure pre-defined transformation scenarios.

Transform with

Allows you to select a transformation scenario to be applied to the currently selected files.

Refactoring Actions (Available for certain document types (such as XML, XSD, and XSL)

Oxygen XML Editor plugin includes some refactoring operations that help you manage the structure of your documents. The following actions are available from the contextual menu in the **Refactoring** submenu:

Rename resource

Allows you to change the name of a resource.

Move resource

Allows you to change the location on disk of a resource.

XML Refactoring

Opens the **XML Refactoring** tool wizard that presents refactoring operations to assist you with managing the structure of your XML documents.

Other Contextual Menu Actions

Other actions that are available in the contextual menu from the project tree include:

Open

Opens the selected files in the corresponding editor.

Open with submenu

This submenu offers you choices for opening the selected file in various editors.

Refresh

Refreshes the content and the dependencies between the resources in the **Master Files** directory.

XPath in Files

Opens the **XPath/XQuery Builder** view that allows you to compose XPath and XQuery expressions and execute them over the currently edited XML document.

Check Spelling in Files

Allows you to check the spelling of multiple files.

Format and Indent Files

Opens the **Format and Indent Files** dialog box that allows you to configure the format and indent (*pretty-print*) action that will be applied on the selected documents.

Properties

Displays the properties of the current file in a **Properties** dialog box.

Moving/Renaming Resources in the Navigator View

The **Navigator** view allows you to move or rename files in the current project.

Moving Resources

To move a file or directory in the **Navigator** view, drag and drop it to the new location in the tree structure or use the **Move** action (or **Copy** and **Paste** actions) from the contextual menu.

You can also move certain types of files (such as XML, XML Schema, Relax NG, WSDL, and XSLT) by using the **Refactoring** > **Move resource** action from the contextual menu. This action opens the **Move resource** dialog box that includes the following options:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, based upon the selected scope. You can select or configure the scope by using the button.

Renaming Resources

To quickly rename a file or a directory, use the in-place editing either by pressing **F2** or by selecting **Rename** from the contextual menu.

You can also rename certain types of files (such as XML, XML Schema, Relax NG, WSDL, and XSLT) by using the **Refactoring** > **Rename resource** action from the contextual menu. This action opens the **Rename resource** dialog box that includes the following options:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references of the renamed resource** - Select this option to update the references to the resource you are renaming. You can select or configure the scope by using the button.

Problems Updating References of Moved/Renamed Resources

In some cases, the references of a moved or a renamed resource can not be updated. For example, when a resource is resolved through an *XML Catalog* or when the path to the moved or renamed resource contains entities. For these cases, Oxygen XML Editor plugin displays a warning dialog box.

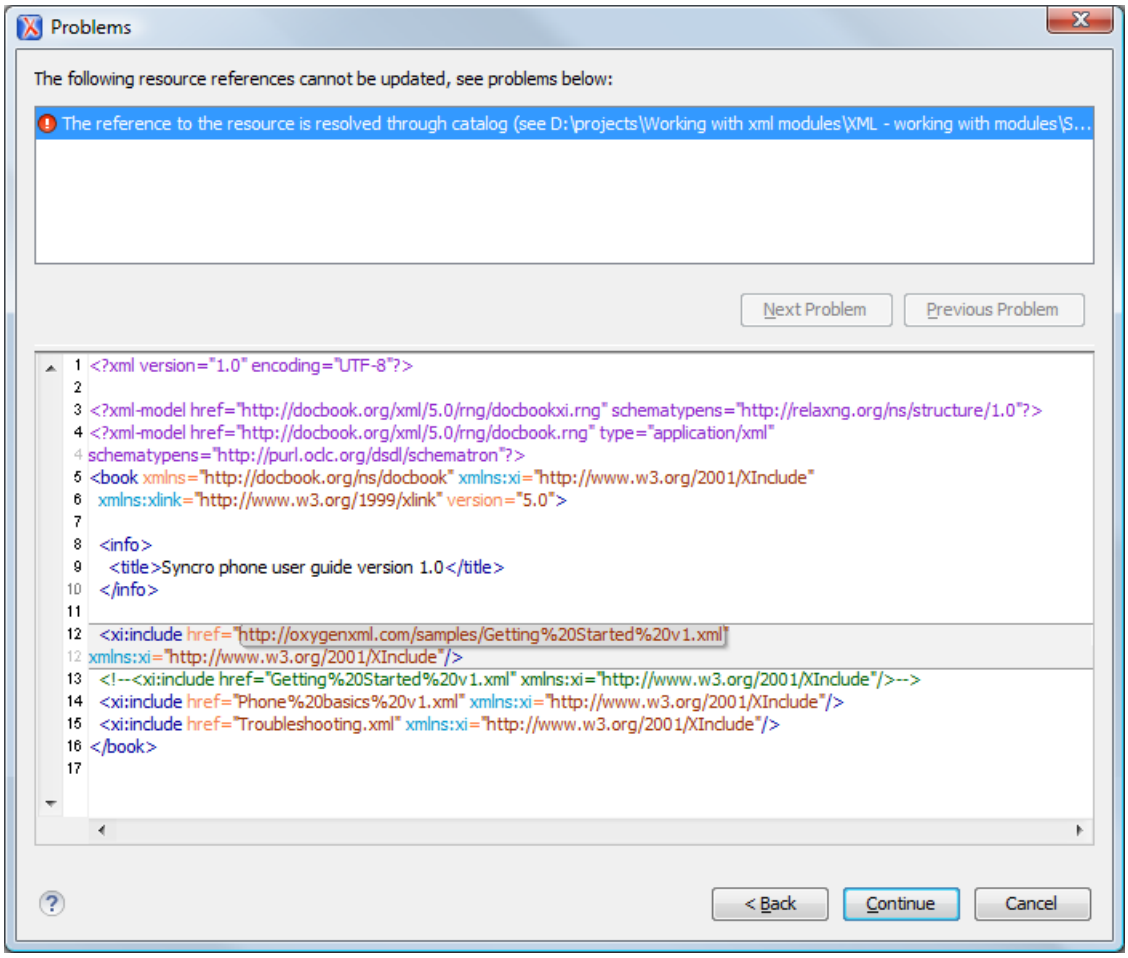


Figure 223: Problems Dialog Box

Master Files Support

Oxygen XML Editor plugin allows you to define *Master Files* at project level. These *master files* are automatically used by Oxygen XML Editor plugin to determine the context for operations such as validation, content completion, refactoring, or searches for XML, XSD, XSL, WSDL, and RNG modules. Oxygen XML Editor plugin maintains the hierarchy of the *master files*, helping you to determine the editing context.

Oxygen XML Editor plugin also provides unique support for using the *Master Files* support in DITA projects. In DITA, when you rename or move non-DITA resources, it allows you to update all the references to these resources in the scope of the *Master Files* (in this case the *main DITA map (root map)*). For more information, see Master Files Support in DITA on page 1614.

For more information about the *Master Files* support for XML documents, watch our video demonstrations:

https://www.youtube.com/embed/e2oo4RWNxW8

https://www.youtube.com/embed/UZwg385RKNw

https://www.youtube.com/embed/FQNSsg57S4E

https://www.youtube.com/embed/gn_YPD5xDCo

Master Files Benefits

Using the *Master Files* support in Oxygen XML Editor plugin includes the following benefits:

- When the module is validated, Oxygen XML Editor plugin automatically identifies the *master files* that include the module and validates all of them.
- The *Content Completion Assistant* presents all the components that are collected from the *master files* for the modules they include.

- The **Outline** view displays all the components that are defined in the *master files* hierarchy.
- The *master files* that are defined for the current module determines the scope of the search and refactoring actions. Oxygen XML Editor plugin performs the search and refactoring actions in the context that the *master files* determine, thus improving the speed of execution.

Enabling the Master Files Support

Oxygen XML Editor plugin stores the *master files* in a folder located in the **Navigator** view, as the first child of the project root. The *Master Files Support* is disabled by default and Oxygen XML Editor plugin allows you to enable or disable the *Master Files Support* for each project you are working on.

To enable *Master Files* support, select **Enable Master Files Support** from the contextual menu of the project root folder in the **Navigator** view.

Related Information:

Detecting Master Files on page 382
Adding Files to the Master File Directory on page 383

Detecting Master Files

Oxygen XML Editor plugin allows you to detect the *master files* using the **Detect Master Files** option. This action applies to the folders you select in the project.

To detect *master files* over the entire project, do one of the following:

- Right-click the root of the project and select **Detect Master Files from Project**.
- Use the **Detect Master Files from Project** option, available in the contextual menu of the `Master Files` folder.

Both of these options display the **Detect Master Files** wizard. In the first panel you can select the type of *master files* you want Oxygen XML Editor plugin to detect. In the subsequent panel the detected *master files* are presented in a tree-like fashion.The resources are grouped into three categories:

- **Possible *master files*** - The files presented on the first level in this category are not imported or included from other files. These files are most likely to be set as *master files*.

  Note: For DITA projects, only *DITA Maps* are reported as possible *master files*.
- **Cycles** - The files that are presented on the first level have circular dependencies between them. Any of the files presented on the first level of a cycle is a possible *master file*.
- **Standalone** - Files that do not include or import other files and are also not included or imported themselves. It is not necessary to set them as *master files*.

To set them as *master files*, simply select their checkboxes. Oxygen XML Editor plugin marks all the children of a *master file* as modules. Modules are rendered in gray and their tool-tip presents a list of their *master files*. A module can be accessed from multiple *master files*.

The *master files* that are already defined in the project are automatically marked in the tree and cannot be removed. The only way to disable a *master file* is to delete it from the `Master Files` folder.

The next panel displays a list with the selected *master files*. Click the **Finish** button to add the *master files* in the `Master Files` folder.

You can use the **Select Master Files** option to automatically mark all *master files*. This action sets all the resources from the **Possible Master Files** category and the first resource of each **Cycle** as *master files* . The **Deselect All** button simply removes all of your selections.

Tip: We recommend that you to only add top-level files (files that are at the root of the include/import graph) in the `Master Files` directory. Keep the file set to a minimum and only add files that import or include other files.

Related Information:

Enabling the Master Files Support on page 382
Adding Files to the Master File Directory on page 383

Adding Files to the Master File Directory

The `Master Files` directory only contains logical folders and linked files. To add files in the `Master Files` directory, use one of the following methods:

- Right-click a file from your project and select **Add to Master Files** from the contextual menu.
- Drag and drop files into the `Master Files` directory.
- From the contextual menu of the **Resource Hierarchy Dependencies** view, use the **Add to Master Files** action.

You can view the *master files* for the currently edited resource in the **Editor Properties** view.

Related Information:

Enabling the Master Files Support on page 382
Detecting Master Files on page 382

Finding and Replacing Text

This section presents the find and replace features available in Oxygen XML Editor plugin.

- The **Find/Replace** dialog box allows you to search through the current project or selected resources and offers a set of options to improve your search.
- The **Find All Elements/Attributes** dialog box allows you to search through the structure of the current document for elements and attributes.

Find/Replace Dialog Box

To open the **Find/Replace** dialog box, use the **Find/Replace** action that is available in the **Edit** menu or by pressing **Ctrl + F (Command + F on OS X)**. It is also invoked by the **Find/Replace** contextual menu action found in certain views.

You can use the **Find/Replace** dialog box to perform the following operations:

- Replace occurrences of target defined in the **Find** area with a new fragment of text defined in **Replace with** area.
- Find all the occurrences of a word or string of characters (that can span over multiple lines) in the document you are editing. This operation also takes into account all the whitespaces contained in the fragment you are searching for. The **Find/Replace** dialog box counts the number of occurrences of the text you are searching for and displays it at the bottom of the dialog box, above the **Close** button. This number is also displayed in the **Results** view after you press the **Find All** button.

The *find* operation works on multiple lines, meaning that a find match can cover characters on multiple lines of text. To input multiple-line text in the **Find** and **Replace with** areas, do one of the following:

- Press **Ctrl + Enter (Command + Enter on OS X)** on your keyboard.
- Use the **Insert newline** contextual menu action.

You can use Perl-like regular expressions syntax to define patterns. A content completion assistance window is available in the **Find** and **Replace with** areas to help you edit regular expressions. It is activated every time you type ****(backslash key) or on-demand if you press **Ctrl + Space (Command + Space on OS X)** on your keyboard.

The *replace* operation can bind regular expression capturing groups ($1 , $2, etc.) from the find pattern.

Tip: To replace the `tag-name` start tag and its attributes with the `new-tag-name` tag use as **Find** the expression *<tag-name(\s+)(.*)>* and as **Replace with** the expression *<new-tag-name$1$2>*.

The **Find/Replace** dialog box contains the following options:

- **Find** - The target character string to search for. You can search for Unicode characters specified in the `\uNNNN` format. Also, hexadecimal notation (`\xNNNN`) and octal notation (`\0NNNN`) can be used. In this case you have to select the **Regular expression** option. For example, to search for a space character you can use the `\u0020` code.

- **Replace with** - The character string with which to replace the target. The string for replace can be on a line or on multiple lines. It can contain Perl notation capturing groups, only if the search expression is a regular expression and the **Regular expression** option is selected.

  Note: Some regular expressions can indefinitely block the application. If the execution of the regular expression does not end in about 5 seconds, the application displays a dialog box that allows you to interrupt the operation.

  Tip: Special characters such as *newline* and *tab* can be inserted in the **Find** and **Replace with** text boxes using dedicated actions in the contextual menu (**Insert newline** and **Insert tab**).

  Unicode characters in the \uNNNN format can also be used in the **Replace with** area.
- **Direction** - Specifies if the search direction is from current position to end of file (**Forward**) or to start of file (**Backward**).
- **Scope** - Specifies whether the **Find/Replace** operation is executed over the entire content of the edited document (**All** option), or over the selected lines.
- **Case sensitive** - When selected, the search operation follows the exact letter case of the text entered in the **Find** field.
- **Whole words only** - Only entire occurrences of a word are included in the search operation. This option is automatically disabled if the **Regular expression** option is selected.
- **Incremental** - The search operation is started every time you type or delete a letter in the **Find** text box.
- **Regular expression** - When this option is selected, you can use regular expressions in Perl-like regular expressions syntax to look for specific pieces of text.
  - **Dot matches all** - A dot used in a regular expression also matches end of line characters.
  - **Canonical equivalence** - If selected, two characters will be considered a match if, and only if, their full *canonical* decompositions match. For example, the **ã** symbol can be inserted as a single character or as two characters (the **a** character, followed by the tilde character). This option is not selected by default.
- **Wrap search** - When the end of the document is reached, the search operation is continued from the start of the document, until its entire content is covered.
- **Find** - Executes a find operation for the next occurrence of the target. It stops after highlighting the find match in the editor panel.
- **Replace** - Executes a replace operation for the target.
- **Replace/Find** - Executes a replace operation for the target followed by a find operation for the next occurrence.
- **Replace All** - Executes a replace operation in the entire scope of the document.

Find All Elements Dialog Box

To open the **Find All Elements** dialog box, go to **Edit** > **Find All Elements** . It assists you in defining XML element / attribute search operations in the current document.

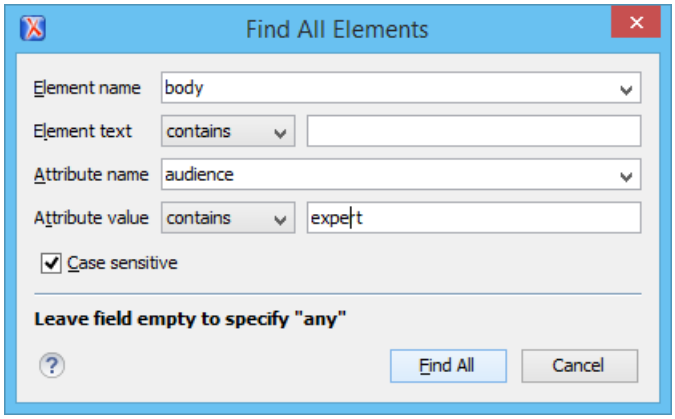


Figure 224: Find All Elements Dialog Box

The dialog box can perform the following actions:

- Find all the elements with a specified name

- Find all the elements that contain, or does not contain, a specified string in their text content
- Find all the elements that have a specified attribute
- Find all the elements that have an attribute with, or without, a specified value

You can combine all of these search criteria to filter your results.

The following fields are available in the dialog box:

- **Element name** - The qualified name of the target element to search for. You can use the drop-down menu to find an element or enter it manually. It is populated with valid element names collected from the associated schema. To specify *any* element name, leave the field empty.

  Note: Use the qualified name of the element (`<namespace prefix>:<element name>`) when the document uses this element notation.
- **Element text** - The target element text to search for. The drop-down menu beside this field allows you to specify whether you are looking for an exact or partial match of the element text. For *any* element text, select **contains** from the drop-down menu and leave the field empty. If you leave the field empty but select **equals** from the drop-down menu, only elements with no text will be found. Select **not contains** to find all elements that do not include the specified text.
- **Attribute name** - The name of the attribute that must be present in the element. You can use the drop-down menu to select an attribute or enter it manually. It is populated with valid attribute names collected from the associated schema. For *any* or no attribute name, leave the field empty.

  Note: Use the qualified name of the attribute (`<namespace prefix>:<attribute name>`) when the document uses this attribute notation.
- **Attribute value** - The drop-down menu beside this field allows you to specify that you are looking for an exact or partial match of the attribute value. For *any* or no attribute value, select **contains** from the drop-down menu and leave the field empty. If you leave the field empty but select **equals** from the drop-down menu, only elements that have at least an attribute with an empty value will be found. Select **not contains** to find all elements that have attributes without a specified value.
- **Case sensitive** - When this option is selected, operations are case-sensitive.

When you press **Find All**, Oxygen XML Editor plugin tries to find the items that match all the search parameters. The results of the operation are presented as a list in the message panel.

Regular Expressions Syntax

Oxygen XML Editor plugin uses the Java regular expression syntax. It is **similar** to that used in Perl 5, with several exceptions. Thus, Oxygen XML Editor plugin does not support the following constructs:

- The conditional constructs `(?{X})` and `(?(condition)X|Y)`.
- The embedded code constructs `(?{code})` and `(??{code})`.
- The embedded comment syntax `(?#comment)`.
- The preprocessing operations `\l`, `\u`, `\L`, and `\U`.

When using regular expressions, note that some sets of characters from XPath/XML Schema/Schematron are slightly different than the ones used by Oxygen XML Editor plugin/Java in the text searches from the **Find/Replace** dialog box. The most common example is with the `\w` and `\W` set of characters. To ensure consistent results between the two, it is recommended that you use the following constructs in the **Find/Replace** dialog box:

- **/w** - `[#x0000-#x10FFFF]-[\p{P}\p{Z}\p{C}]` instead of `\w`
- **/W** - `[\p{P}\p{Z}\p{C}]` instead of `\W`

There are some other notable differences that may cause unexpected results, including the following:

- In Perl, `\1` through `\9` are always interpreted as back references. A backslash-escaped number greater than 9 is treated as a back reference if at least that many sub-expressions exist. Otherwise, it is interpreted, if possible, as an octal escape. In this class octal escapes must always begin with a zero. In Java, `\1` through `\9` are always interpreted as back references, and a larger number is accepted as a back reference if at least that many sub-expressions exist at that point in the regular expression. Otherwise, the parser will drop digits until the number is smaller or equal to the existing number of groups or it is one digit.
- Perl uses the g flag to request a match that resumes where the last match left off.

- In Perl, embedded flags at the top level of an expression affect the whole expression. In Java, embedded flags always take effect at the point where they appear, whether they are at the top level or within a group. In the latter case, flags are restored at the end of the group just as in Perl.
- Perl is forgiving about malformed matching constructs, as in the expression `*a`, as well as dangling brackets, as in the expression `abc ]`, and treats them as literals. This class also accepts dangling brackets but is strict about dangling meta-characters such as `+`, `?` and `*`.

Related Information:

Comparison between the Java and Perl 5 regular expression syntax

Spell Checking

Oxygen XML Editor plugin includes an automatic (as-you-type) spell checking feature, as well as a manual spell checking action to open a **Spelling** dialog box that offers a variety of options.

To manually check spelling in the current document, use the **Check Spelling** action on the toolbar.

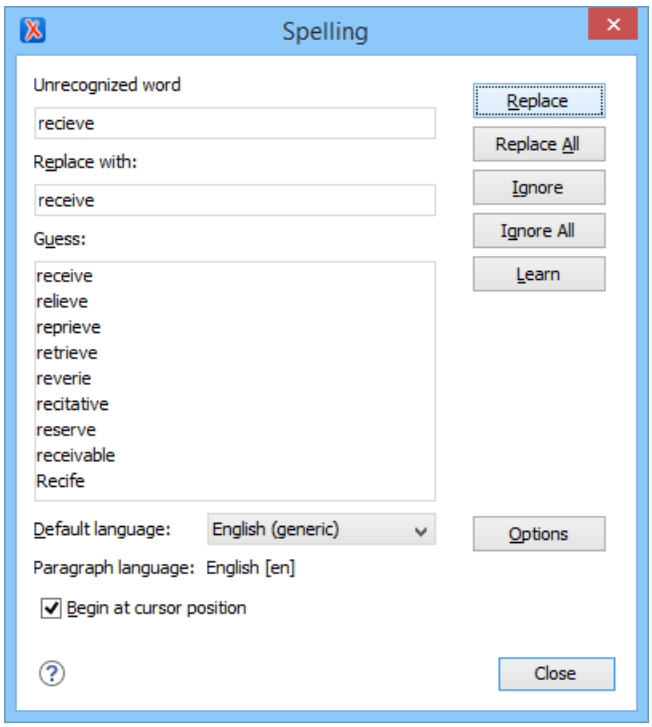


Figure 225: Check Spelling Dialog Box

The **Spelling** dialog box contains the following:

Unrecognized word

Displays the word that cannot be found in the selected dictionary. The word is also highlighted in the XML document.

Replace with

The character string that will replace the misspelled word.

Guess

Displays a list of words suggested to replace the unknown word. Double-click a word to automatically insert it in the document and resume the spell checking process.

Default language

Allows you to select the default language dictionary used by the spelling engine.

Paragraph language

In an XML document, you can mix content written in multiple languages. You can set the language code in the `lang` or `xml:lang` attribute for any particular section and Oxygen XML Editor plugin will automatically instruct the spell checker engine to apply the appropriate language dictionary for that section.

Begin at cursor position

Instructs the spell checker to begin checking the document starting from the current cursor position.

Action Buttons

Replace

Use this button to replace the unrecognized word with the selected word from the **Replace with** field.

Replace All

Use this button to replace all occurrences of the unrecognized word with the selected word from the **Replace with** field.

Ignore

Ignores the first occurrence of the unrecognized word and allows you to continue checking the document. Oxygen XML Editor plugin skips the content of the XML elements marked to be ignored.

Ignore All

Ignores all instances of the unrecognized word in the current document.

Learn

Adds the unrecognized word to the list of valid words.

Options

Opens the **Spell Check** preferences page where you can configure various options in regards to the feature.

Related Information:

AutoCorrect Misspelled Words on page 394

Spell Check Dictionaries and Term Lists

Oxygen XML Editor plugin uses the **Hunspell** engine for the spell checking feature. The Hunspell spell checking engine is open source and has an LGPL license. It is designed for languages with rich morphology and complex compounding or character encoding. Each language-country variant combination have their own specific dictionaries. Oxygen XML Editor plugin includes the following built-in dictionaries for the spell checker:

- English (US) [`en_US`]
- English (UK) [`en_GB`]
- French [`fr`]
- German [`de_DE`]
- Spanish [`es_ES`]

Other Hunspell Dictionaries

You can also download Hunspell dictionaries for other languages and add them to the Oxygen XML Editor plugin spell checker. An example of a website that includes numerous dictionary files is: http://extensions.services.openoffice.org/dictionary.

If you cannot find a Hunspell dictionary that is already built for your language, you can build the dictionary you need. To build a full Hunspell dictionary, follow these instructions and then add the dictionary to the Oxygen XML Editor plugin spell checker by following this procedure.

Personalized Term Lists

Authoring in certain areas of expertise (for example, the pharmaceutical or automobile industries) might require the use of specific terms that are not part of the standard spell checker dictionary. To avoid marking these terms as errors, Oxygen XML Editor plugin provides a way of adding personalized *term lists* to the spell check engine. This involves creating a term list file that the spell checker will recognize and it is similar to the file Oxygen XML Editor plugin uses for storing *learned words*.

The term list files are specific for each language and can be specific to each domain or area of expertise (for example, *legal*, *medical*, *automotive*). They can also be used to control forbidden words.

Related Information:

Adding Spell Check Dictionaries on page 388
Adding Spell Check Term Lists on page 389
Building and Testing Hunspell Dictionaries

Adding Custom Dictionaries and Term Lists

The Oxygen XML Editor plugin spell checker allows you to add customized Hunspell dictionaries and personalized term lists. The Hunspell dictionary mechanism requires a dictionary file (with a `.dic` file extension) and an affix file (with an `.aff` file extension). The personalized term lists are custom files (with a `.tdi` file extension) that you can create to include specialized terms or specify forbidden words in the Oxygen XML Editor plugin spell checker.

You can add dictionaries and personalized term lists to the default folder where they are stored or specify your own custom locations. You can view the default storage location in the **Spell Check Dictionaries** preferences page and the **Include dictionaries and term list from** option allows you to choose a custom storage location. All the dictionaries and term lists for a particular language that are found in either location are merged and used by the spell checker in Oxygen XML Editor plugin.

Related Information:

Replacing a Spell Check Dictionary on page 390

Adding Spell Check Dictionaries

There are three possible scenarios for adding Hunspell dictionaries to the Oxygen XML Editor plugin spell checker:

- You can download a pre-built Hunspell dictionary and add it to the spell checking mechanism.
- You can create a custom Hunspell dictionary file that defines your own list of words and add it to the spell checking mechanism.
- You can build your own full Hunspell dictionary and add it to the spell checking mechanism.

Download and Add a Pre-Built Hunspell Dictionary

To add a downloaded pre-built dictionary, follow these steps:

1. Download the files needed for your dictionary. You will need a *dictionary* file (with a `.dic` file extension) and an *affix* file (with an `.aff` file extension). If the dictionary does not include an affix file (`.aff`), you can create one and leave it empty, but it is needed for the mechanism to work properly. An example of a website that includes numerous dictionary files is: http://extensions.services.openoffice.org/dictionary.

   Important: The name of the files should begin with a two letter prefix for the language code, followed by an underscore or hyphen, then two letters that indicate the country code, followed by another underscore or hyphen, and then a descriptive name (for example, `en_US_medical.dic` for a medical dictionary in the US version of the English language, or for a less specific English medical dictionary, you could omit the country code like this: `en_medical.dic`). For a list of language codes, see https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes.
2. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
3. Choose one of the following two options for adding the downloaded files.
   a. Copy both files (`.dic` and `.aff`) to the default directory displayed in the **Dictionaries and term lists default folder** option.
   b. Copy both files (`.dic` and `.aff`) to any other directory, select the **Include dictionaries and term list from** option, and select that directory. If you choose this option, make sure you read this important note.
4. Restart the application for the spell checker to start using the new dictionary.

Create a Custom Hunspell Dictionary that Defines a List of Words

To create a custom Hunspell dictionary that defines your own list of words, follow these steps:

1. Create a *dictionary* file (with a `.dic` file extension) and an *affix* file (with an `.aff` file extension). The affix file (`.aff`) can be left empty, but it is needed for the mechanism to work properly.

   Important: The name of the files should begin with a two letter prefix for the language code, followed by an underscore or hyphen, then two letters that indicate the country code, followed by another underscore or hyphen, and then a descriptive name (for example, `en_US_medical.dic` for a medical dictionary in the US version of the English language, or for a less specific English medical dictionary, you could omit the country code like this: `en_medical.dic`). For a list of language codes, see https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes.
2. In the dictionary file (`.dic` extension), add the words you want to be included in your custom dictionary. Add one word per row and the first line needs to contain the number of words, as in the following example:

   ```
   2
   parabola
   asimptotic
   ```
3. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
4. Choose one of the following two options for saving the files.
   a. Save both files (`.dic` and `.aff`) to the default directory displayed in the **Dictionaries and term lists default folder** option.
   b. Save both files (`.dic` and `.aff`) to any other directory, select the **Include dictionaries and term list from** option, and select that directory. If you choose this option, make sure you read this important note.
5. Restart the application for the spell checker to start using the new dictionary.

Build and Add a Full Hunspell Dictionary

To build and add a full Hunspell dictionary, follow these steps:

1. Follow these instructions: Building and Testing Hunspell Dictionaries.

   Result: You should end up with a *dictionary* file (with a `.dic` file extension) and an *affix* file (with an `.aff` file extension). The affix file (`.aff`) can be empty, but it is needed for the mechanism to work properly.

   Important: The name of the files should begin with a two letter prefix for the language code, followed by an underscore or hyphen, then two letters that indicate the country code, followed by another underscore or hyphen, and then a descriptive name (for example, `en_US_medical.dic` for a medical dictionary in the US version of the English language, or for a less specific English medical dictionary, you could omit the country code like this: `en_medical.dic`). For a list of language codes, see https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes.
2. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
3. Choose one of the following two options for saving the files.
   a. Save both files (`.dic` and `.aff`) to the default directory displayed in the **Dictionaries and term lists default folder** option.
   b. Save both files (`.dic` and `.aff`) to any other directory, select the **Include dictionaries and term list from** option, and select that directory. If you choose this option, make sure you read this important note.
4. Restart the application for the spell checker to start using the new dictionary.

Related Information:

Adding Spell Check Term Lists on page 389

Adding Spell Check Term Lists

You can create personalized term lists that are used to store specialized terms or control forbidden words. They can then be added to one of the directories that store the spell check dictionaries and the spell checker will be merge them with all the dictionaries and other term lists for a particular language.

Create and Add Personalized Term Lists

To create and add a personalized term list, follow these steps:

1. Create a *term list* file (with a `.tdi` file extension). The name of the file must begin with a two letter prefix that indicates the language it should be attached to, followed by an underscore or hyphen, and then a

descriptive name (for example, `en_US_myterms.tdi` for term list in the US version of the English language or `en_myterms.tdi` for a less specific English term list). For a list of language codes, see https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes.

2. In the term list file (`.tdi` extension), add the terms you want to be included in your custom dictionary. If you need to specify forbidden terms, those words simply need to be preceded by an asterisk. Add one word per row, as in the following example:

```
parabola
asimptotic
*hyperbola
```

3. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
4. Choose one of the following two options for saving the file.
   a. Save the file (`.tdi`) to the default directory displayed in the **Dictionaries and term lists default folder** option.
   b. Save the file (`.tdi`) to any other directory, select the **Include dictionaries and term list from** option, and select that directory. If you choose this option, make sure you read this important note.
5. Restart the application for the spell checker to start using the new term list.

Related Information:

Adding Spell Check Dictionaries on page 388

Replacing a Spell Check Dictionary

There are several possible scenarios for replacing an existing Hunspell dictionary for the Oxygen XML Editor plugin spell checker:

- You can download a pre-built Hunspell dictionary and replace an existing dictionary with it.
- You can build your own full Hunspell dictionary and replace an existing dictionary with it.

Download a Pre-Built Hunspell Dictionary and Replace an Existing One

To replace an existing dictionary with a downloaded pre-built dictionary, follow these steps:

1. Download the files needed for your dictionary. You will need a *dictionary* file (with a `.dic` file extension) and an *affix* file (with an `.aff` file extension). If the dictionary does not include an affix file (`.aff`), you can create one and leave it empty, but it is needed for the mechanism to work properly. An example of a website that includes numerous dictionary files is: http://extensions.services.openoffice.org/dictionary.
2. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
3. Choose one of the following two options to replace existing files.
   a. Replace the existing files (`.dic` and `.aff`) for the particular language in the default directory displayed in the **Dictionaries and term lists default folder** option. Leave the **Dictionaries and term list from** option deselected.
   b. Replace existing files (`.dic` and `.aff`) for the particular language in a directory specified in the **Include dictionaries and term list from** option. If you choose this option, make sure you read this important note.

   Important: Do not alter the naming convention. The name of the files must begin with a two letter prefix that indicates the language it should be attached to (for example, `en_US.dic` for a US English dictionary or `en.dic` for a less specific English dictionary). For a list of language codes, see https://en.wikipedia.org/wiki/List_of_ISO_639-1_codes.
4. Restart the application for the spell checker to start using the new dictionary.

Build a Full Hunspell Dictionary and Replace an Existing One

To replace an existing dictionary with a full Hunspell dictionary that you build, follow these steps:

1. Follow these instructions: Building and Testing Hunspell Dictionaries.

   Result: You should end up with a *dictionary* file (with a `.dic` file extension) and an *affix* file (with an `.aff` file extension). The affix file (`.aff`) can be empty, but it is needed for the mechanism to work properly.
2. Open the **Preferences** dialog box and go to **Editor** > **Spell Check** > **Dictionaries**.
3. Choose one of the following two options to replace existing files.

a. Replace the existing files (`.dic` and `.aff`) for the particular language in the default directory displayed in the **Dictionaries and term lists default folder** option. Leave the **Include dictionaries and term list from** option deselected.
b. Replace existing files (`.dic` and `.aff`) for the particular language in a directory specified in the **Include dictionaries and term list from** option. If you choose this option, make sure you read this important note.

4. Restart the application for the spell checker to start using the new dictionary.

Related Information:

Adding Custom Dictionaries and Term Lists on page 388

Learned Words

Spell checker engines rely on dictionaries to decide if a word is spelled correctly. To instruct the spell checker engine that an unknown word is actually correctly spelled, you need to add that word to a list of learned words. There are two ways to do this:

- Invoke the contextual menu on an unknown word, then select **Learn word**.
- Press the **Learn** button from the **Spelling** dialog box that is invoked by using the **Check Spelling** action on the toolbar.

Note: To delete items from the list of learned words, use the **Delete learned words** option in the **Editor** > **Spell Check** > **Dictionaries** preferences page.

Ignored Words (Elements)

There are certain XML elements (such as `programlisting`, `codeblock`, `codeph`, `filepath`, or `screen`) in which you may want the content to always be skipped during the spell check process. This can be done in one of several ways:

- You can skip through them manually, word by word, using the **Ignore** button in the **Spelling** dialog box that is invoked by using the **Check Spelling** action on the toolbar.
- You can automatically skip the content of certain elements by maintaining a set of known element names that should never be checked. You can manage this set of element names by using the **Ignore elements** section in the **Spell Check** preferences page.

Automatic Spell Check

Oxygen XML Editor plugin includes an option to automatically check the spelling as you type. Not only does it check spelling when you are typing in the main editor, but also when you are typing in a comment. This feature is disabled by default, but it can be enabled and configured in the **Spell Check** preferences page. When the **Automatic Spell Check** option is selected, unknown words are underlined and some actions are available in the contextual menu to help you correct the word or prevent the word from being reported in the future.

Tip: You can configure the color and how spelling errors are shown from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

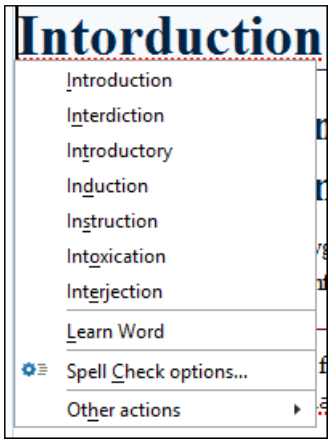


Figure 226: Automatic Spell Checking in Author Mode

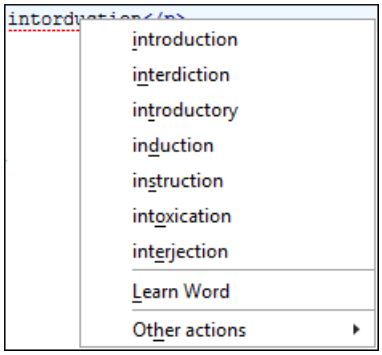


Figure 227: Automatic Spell Checking in Text Mode

The contextual menu includes the following actions:

Delete Repeated Word

Allows you to delete words that were repeated in consecutive order.

List of Suggestions

A list of words suggested by the spell checking engine as possible replacements for the unknown word.

Learn Word

Allows you to add the current unknown word to the persistent dictionary of learned words.

Spell check options (Available in Author mode only)

Opens the **Spell Check** preferences page.

Other actions

This submenu give you access to all the usual contextual menu actions.

Related Information:

Learned Words on page 391

Spell Check Multiple Files

The **Check Spelling in Files** action allows you to check the spelling on multiple local or remote documents. This action is available in the following locations:

-
- The contextual menu of the **Navigator** view.
- When editing DITA documents, the contextual menu of the **DITA Maps Manager** view.

This action opens the **Check Spelling in Files** dialog box that allows you to define the scope and several other options. After you configure the settings for the operation, click the **Check All** button to check the spelling in all

specified files. The spelling corrections are displayed in the **Results** view at the bottom of the editor and you can group the reported errors as a tree with two levels.

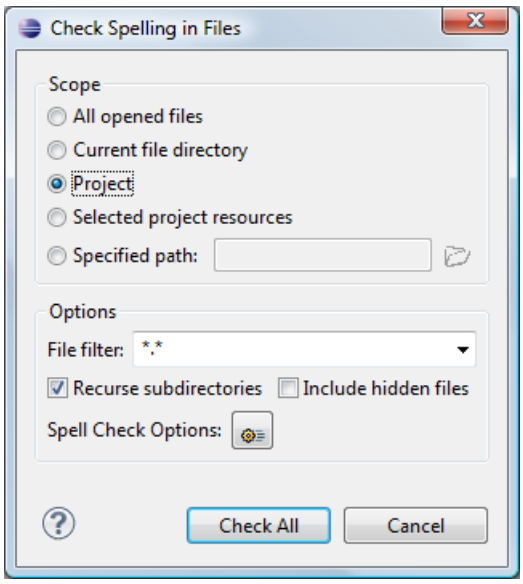


Figure 228: Check Spelling in Files Dialog Box

The following scopes are available:

- **All opened files** - The spell check is performed in all opened files.
- **Directory of the current file** - All the files in the folder of the current edited file.
- **Project files** - All files from the current project.
- **Selected project files** - The selected files from the current project.
- **Specified path** - Checks the spelling in the files located at a path that you specify.

The **Options** section includes the following options:

- **File filter** - Allow you to filter the files from the selected scope.
- **Recurse subdirectories** - When selected, the spell check is performed recursively for the specified scope. The one exception is that this option is ignored if the scope is set to **All opened files**.
- **Include hidden files** - When selected, the spell check is also performed in the hidden files.
- **Spell Check Options** - The spell check processor uses the options available in the **Spell Check** preferences panel .

When working with DITA documents, if you invoke the **Check Spelling in Files** action in the **DITA Maps Manager** view, a slightly different version of the dialog box is displayed:

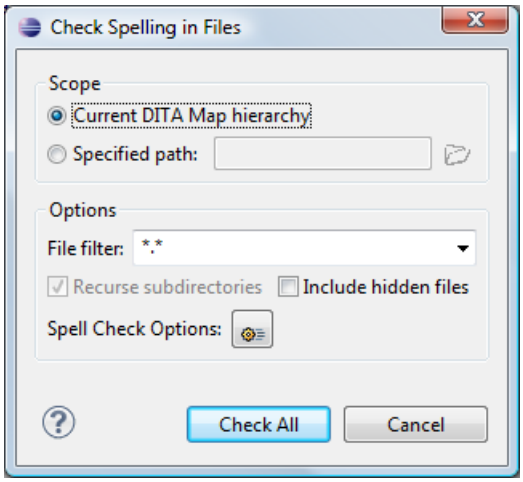


Figure 229: Check Spelling in Files Dialog Box (Invoked from the DITA Maps Manager View)

The following scopes are available when you check the spelling in files from the **DITA Maps Manager**:

- **Current DITA Map hierarchy** - All the files referenced in the currently selected *DITA map*, opened in the **DITA Maps Manager** view.
- **Specified path** - Checks the spelling in the files located at a path that you specify.

AutoCorrect Misspelled Words

Oxygen XML Editor plugin includes an *AutoCorrect* feature to automatically correct misspelled words, as well as to insert certain symbols or other text, as you type in **Author** mode. Oxygen XML Editor plugin includes a default list of commonly misspelled words and symbols, but you can modify the list to suit your needs. You can also choose to have the *AutoCorrect* feature use suggestions from the main spell checker. The suggestions will only be used if the misspelled words are not found in the *Replacements Table*.

When enabled, the *AutoCorrect* feature can be used to do the following:

- Automatically correct misspelled words while you edit in **Author** mode.
- Easily insert symbols. For example, if you want to insert a ® character, you would type `(R)`.
- Quickly insert text fragments.

AutoCorrect is enabled by default. To configure this feature, open the **Preferences** dialog box and go to **Editor** > **Edit Modes** > **Author** > **AutoCorrect**.

The actual operation of replacing a word is triggered by a space, dash, or certain punctuation characters (`, . ; : ? ! ' " ) ] }`). After a correction, the affected string is highlighted. The highlight is removed upon the next editing action (text insertion or deletion). If you hover over the highlight, a small widget appears below the word. If you hover over the widget, it expands and you can click it to present a drop-down list that includes the following options:

- **Change back to "[original word]"** - Reverts the correction back to its original form.
- **Stop Automatically Correcting "[original word]"** - This option is presented if the correction is performed based on the *AutoCorrect Replacements Table* and selecting it will delete the corresponding entry from the Replacements Table.
- **Learn Word "[original word]"** - This option is presented if the **Use additional suggestions from the spell checker** option is selected in the **AutoCorrect** preferences page and the correction is performed based on the *Spell Checker*. Selecting this option will add the item to the list of learned words.
- **AutoCorrect options** - Opens the **AutoCorrect** preferences page that allows you to configure the feature.

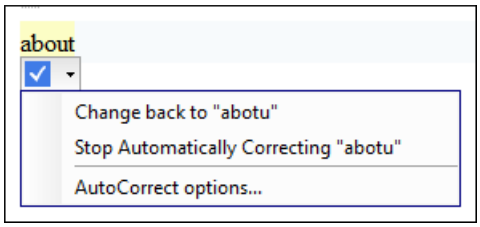


Figure 230: AutoCorrect Widget

The *AutoCorrect* feature results in the following types of substitutions in regards to case-sensitivity:

- Words with all lower-case characters will be replaced with lower-case substitutions (for example, "abotu" is replaced with "about").
- Words with irregular-case characters will be replaced with lower-case substitutions ("ABotU" is replaced with "about").
- Words with all upper-case characters will be replaced with upper-case substitutions ("ABOTU" is replaced with "ABOUT").
- Words starting with an upper-case character will be replaced with substitutions having the same pattern ("Abotu" is replaced with "About").

The *AutoCorrect* feature also uses the list of **ignored elements from the Spell Check preferences page**. All elements (along with their descendant elements) included in this list will be ignored by the *AutoCorrect* engine.

Related Information:

Spell Checking on page 386

Add Dictionaries for the AutoCorrect Feature

To add new dictionaries for the *AutoCorrect* mechanism, or to replace an existing one, follow these steps:

1. Download an *AutoCorrect* dictionary file for the desired language. The file needs to have a `.dat` file extension. An example of a website that includes some *AutoCorrect* dictionary files is: OpenOffice Extensions Search Page.
2. Open the **Preferences** dialog box and go to **Editor** > **Edit Modes** > **Author** > **AutoCorrect** > **Dictionaries**.
3. Choose one of the following two options for adding the downloaded files.
   a. Copy the downloaded `.dat` file to the default directory displayed in the **Dictionaries default folder** option.. Note that if you are replacing an existing dictionary file, this is the best option.
   b. Copy the downloaded `.dat` file to any other directory, select the **Include dictionaries from** option, and select that directory. If you choose this option, make sure you read this important note.
4. Restart the application for the *AutoCorrect* mechanism to start using the new dictionary.

Working with Special Characters

Oxygen XML Editor plugin provides support for special characters in various ways:

- You can insert special characters using the **Character Map** feature.
- Oxygen XML Editor plugin provides support for the Unicode characters.
- For special characters that are not included in any of the default fonts, Oxygen XML Editor plugin will try to find that symbol in a *fallback* font.
- Oxygen XML Editor plugin includes some encoding options and features to help determine how to handle documents with unsupported characters.
- Oxygen XML Editor plugin allows you to choose the fonts to be used in the various editing modes and in some cases, changing the font may be a solution when special characters are not rendered as expected.
- Oxygen XML Editor plugin supports bidirectional text, such as Arabic, Hebrew, and certain Asian languages, or other special characters that are combined into a single glyph.
- Oxygen XML Editor plugin includes a contextual menu action that converts a sequence of hexadecimal characters to the corresponding Unicode character.

- In **Text** mode, Oxygen XML Editor plugin includes several contextual menu actions (in the **Source** submenu) for encoding or decoding **base64** schemes, **base32** schemes, or **hex** schemes.

Tip: To edit documents written in languages that use special characters (such as Japanese or Chinese), change the font to one that supports the specific characters (a Unicode font). For the Windows platform, *Arial Unicode MS* or *MS Gothic* is recommended. To change the font in Oxygen XML Editor plugin, open the **Preferences** dialog box , go to **Fonts**. This preferences page allows you to select a font for each editing mode.

Inserting Special Characters

You can insert symbols and other special characters by using the **Character Map** dialog box that can be opened with the **Edit** > **Insert from Character Map** action.

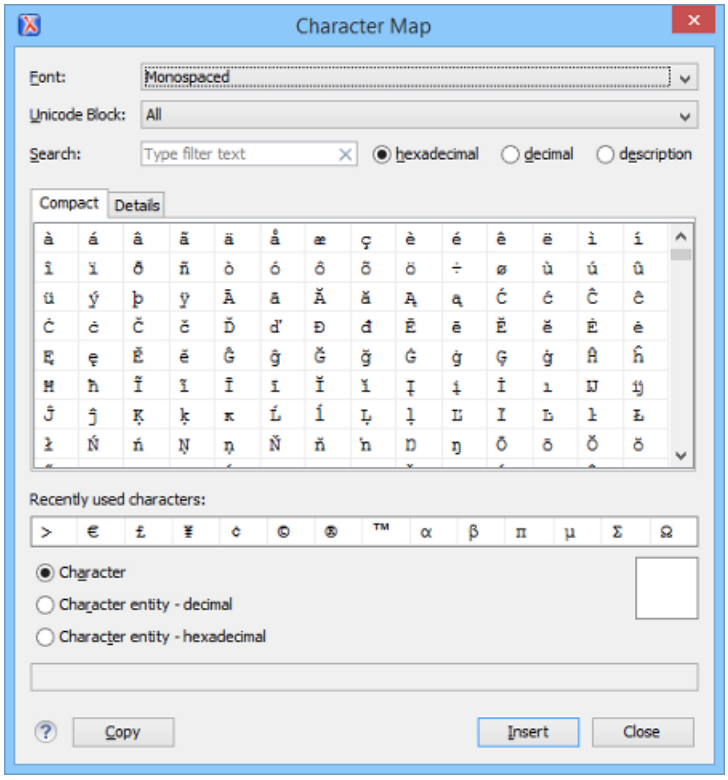


Figure 231: Character Map Dialog Box

The **Character Map** dialog box allows you to visualize all characters that are available in a particular font, pick the character you need, and insert it in the document you are editing. It includes the following fields and sections:

Font

Use this drop-down list to choose the font for which you want to display characters.

Unicode Block

Use this drop-down list to only see a certain range of characters. This will filter the number of characters displayed, showing only a contiguous range of characters corresponding to the selected block. Unassigned characters are displayed as empty squares.

Search

Use this filter to search for a character by one of the following attributes:

- **hexadecimal**
- **decimal**
- **description**

  Note: Selecting **description** opens the **Details** tab. If you enter a character description in the **Search** field, t**description** is selected automatically.

Character Table Section

The characters that are available to be inserted are listed in two tabs:

- **Compact** - Matrix-like table that displays a visual representation of the characters.
- **Details** - Displays the available characters in a tabular format, presenting their decimal and hexadecimal value along with their description.

Recently Used Characters Section

Displays the symbols that you have used recently and you can also select one from there to insert it in the current document.

Character Mode Section

The next section of the dialog box allows you to select how you want the character to appear in the **Text** editing mode. You can choose between the following:

- **Character**
- **Character entity - decimal**
- **Character entity - hexadecimal**

You can see the character or code that will be inserted in **Text** mode next to the selections in this section and a box on the right side of the dialog box allows you to see the character that will be inserted in **Author** mode. You can also see the name and range name of a character either at the bottom of the dialog box, or in a tooltip when hovering the cursor over the character.

Press the **Insert** button to insert the selected character in the current editor at cursor position. You will see the character in the editor if the editor font is able to render it. The **Copy** button copies it to the clipboard without inserting it in the editor.

Note: The **Character Map** dialog box is not available in the **Grid** editor.

Unicode Fallback Font Support

Oxygen XML Editor plugin provides fonts for most common Unicode ranges. However, if you use special symbols or characters that are not included in the default fonts, they will be rendered as small rectangles. A *fallback* font is a reserve typeface that contains symbols for as many Unicode characters as possible. When a display system encounters a character that is not part of the range of any of the available fonts, Oxygen XML Editor plugin will try to find that symbol in a *fallback* font.

Example of a Scenario Where a Fallback Font is Needed

Suppose that you need to insert the wheelchair symbol (♿ - U+267F) into your content in a Windows operating system. By default, Oxygen XML Editor plugin does not render this symbol correctly since it is not included in any of the default fonts. It is included in **Segoe UI Symbol**, but this font is not part of the default fonts that come with Oxygen XML Editor plugin. To allow Oxygen XML Editor plugin to recognize and render the symbol correctly, you can add **Segoe UI Symbol** as a *fallback* font.

Add a Fallback Font in Windows (7 or Later)

To add a fallback font to the Oxygen XML Editor plugin installation, use the following procedure:

1. Start Windows Explorer and browse to the *[OXYGEN_INSTALL_DIR]*`/jre/lib/fonts` directory.
2. Create a directory called `fallback` (if it is not already there).
3. Copy a font file (True Type Font - TTF) that includes the special characters into this directory.

   Tip: You could, for example, copy the **Segoe UI Symbol Regular** font from `C:\Windows\Fonts`.
4. Restart Oxygen XML Editor plugin for the changes to take full effect.

Result: Whenever Oxygen XML Editor plugin finds a character that cannot be rendered using its standard fonts, it will look for the glyph in the fonts stored in the `fallback` folder.

Alternate Solution for Other Platforms

For Mac OS X or other platforms, you could use the following approach:

1. Use a font editor (such as FontForge) to combine multiple true type fonts into a single custom font.
2. Install the font file into the dedicated font folder of your operating system.
3. In Oxygen XML Editor plugin, open the **Preferences** dialog box , go to **Fonts**.
4. Click the **Change** button for the particular editing mode and select your custom font from the drop-down list in the subsequent dialog box.
5. Restart Oxygen XML Editor plugin for the font changes to take full effect.

Related Information:

Working with Unicode on page 398
Inserting Special Characters on page 396

Opening and Saving Documents with Unsupported Characters

When loading documents, Oxygen XML Editor plugin receives the encoding of the document from the Eclipse platform. This encoding is then used to instruct the Java Encoder to load support for and to save the document using the specified code chart.

While in most cases you are using UTF-8, simply changing the encoding name causes the application to save the file using the new encoding.

When a document with a UTF-16 encoding is edited and saved in Oxygen XML Editor plugin, the saved document has a byte order mark (BOM) that specifies the byte order of the document content. The default byte order is platform-dependent. That means that a UTF-16 document created on a Windows platform (where the default byte order mark is *UnicodeLittle*) has a different BOM than one created on a Mac OS platform (where the byte order mark is *UnicodeBig*). The byte order and the BOM of an existing document are preserved when the document is edited and saved.

Working with Unicode

Unicode provides a unique number for every character, independent of the platform and language. Unicode is internationally recognized and is required by modern standards (such as XML, Java, JavaScript, LDAP, CORBA 3.0, WML, etc.).

Oxygen XML Editor plugin provides support for the Unicode standard, enabling your XML application to be targeted across multiple platforms, languages, and countries without re-engineering. Internally, the Oxygen XML Editor plugin uses 16 bit characters covering the Unicode Character set.

Note: Oxygen XML Editor plugin may not be able to display characters that are not supported by the operating system (either not installed or unavailable).

Tip: On windows, you can enable the support for **CJK** (Chinese, Japanese, Korean) languages from **Control Panel / Regional and Language Options / Languages / Install files for East Asian languages**.

Related Information:

Unicode Fallback Font Support on page 397
Inserting Special Characters on page 396

Special Character Support in Grid Mode

If you are editing documents with a bidirectional text orientation or other special characters (such as combining characters), you can change the way the text is rendered and edited in the grid cells by using the **Change Text Orientation**(**Ctrl + Shift + O (Command + Shift + O on OS X)**) action that is available from the **Edit** menu in the **Grid** editing mode. Use this action to switch from the default left to right text orientation to the right to left orientation, and vice versa.

Note: This change applies only to the text from the cells, and not to the layout of the grid editor.

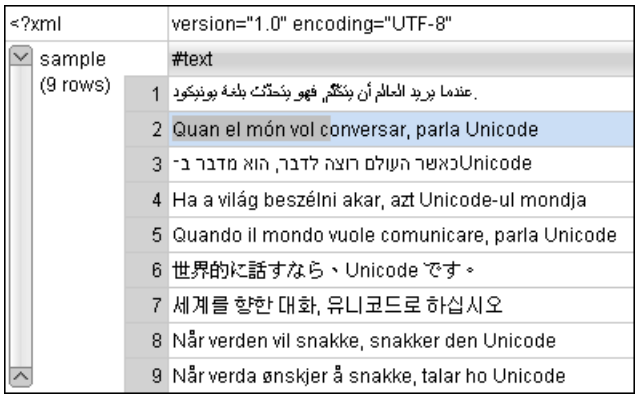


Figure 232: Default left to right text orientation

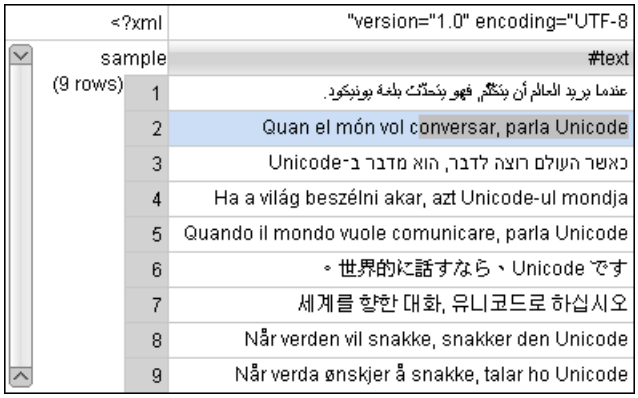


Figure 233: Right to left text orientation

Related Information:

Special Character Support in Author Mode on page 324
Inserting Special Characters on page 396

Special Character Support in Author Mode

Oxygen XML Editor plugin offers support for bidirectional text, such as Arabic or Hebrew languages that require right-to-left scripts, certain Asian languages (such as Devanagari, Bengali, Gurmukhi, Gujarati, Oriya, Tamil, Telugu, Kannada, Malayalam, Sinhala, Thai, Khmer), or other special characters (such as combining characters). To achieve this, Oxygen XML Editor plugin implements the Unicode Bidirectional Algorithm, as specified by the Unicode Consortium. The text arrangement is similar to what you get in a modern HTML browser. The final text layout is rendered according to the directional CSS properties matching the XML elements and the Unicode directional formatting codes.

By default, when navigating bidirectional text with the arrow keys in **Author** mode, pressing the right arrow key moves the cursor in the writing direction and the left arrow moves it in the opposite direction. However, if the **Arrow keys move the cursor in the writing direction** option in the **Cursor Navigation** preferences page is not selected, pressing the right arrow will simply move the cursor to the right (and the left arrow moves it to the left), regardless of the text direction.

Tip: If you experience performance issues when editing documents that contain bidirectional text, you could try the following solution:

- You could try changing the font. For example, you could try using the**David** font in Hebrew content. If it is not already installed in your operating system, this font is available at: https://www.microsoft.com/typography/fonts/family.aspx?FID=234. To change the font in Oxygen XML Editor plugin, open the **Preferences** dialog box , go to **Fonts**, and change the font in the **Author default font** option.

For more information about the bidirectional text support in the **Author** mode, watch our video demonstration:

https://www.youtube.com/embed/IC0ahH1IS7s

Related Information:
Special Character Support in Grid Mode on page 186
Inserting Special Characters on page 396

Controlling the Text Direction Using XML Markup

Oxygen XML Editor plugin Supports the following CSS properties that control the direction of text:

Table 33: CSS Properties Controlling Text Direction

direction	Specifies the writing direction of the text. The possible values are **ltr** (the text direction is left to right), **rtl** (the text direction is right to left, and **inherit** (the direction property is inherited from the parent element).
unicodeBidi	Used along with the **direction** property to create levels of embedded text with different text directions in the same document. The possible values of this property are **bidi-override** (creates an additional level of embedding and forces all strong characters to the direction specified in the **direction**), **embed** (creates an additional level of embedding), **normal** (does not use an additional level of embedding), and **inherit** (the value of the **unicodeBidi** property is inherited from parent element).

For instance, to declare an element as being Right to Left, you could use a stylesheet like this:

XML File:

```
<article>
  <myRTLpara>RIGHT TO LEFT TEXT</myRTLPara>
</article>
```

Associated CSS File:

```
myRTLpara{
    direction:rtl;
    unicode-bidi:embed;
}
```

Oxygen XML Editor plugin recognizes the **dir** attribute on any XML document. The supported values are:

Values	Description
ltr	The text from the current element is Left to Right, embedded.
rtl	The text from the current element is Right to Left, embedded.
lro	The text from the current element is Left to Right, embedded.
rlo	The text from the current element is Right to Left, embedded.

The following XML document types make use of the **dir** attribute with the above values:

- DITA
- DocBook
- TEI
- XHTML

Note: When the *inline element* tags are visible, the text in the line is arranged according to the BIDI algorithm after replacing the tags symbols with Object Replacement Characters. This makes it possible to get a different text arrangement when viewing a document in the **No Tags** mode versus viewing it in the **Full Tags** mode.

Controlling the Text Direction Using the Unicode Direction Formatting Codes

These Unicode Direction Formatting Codes codes can be embedded in the edited text, specifying a text direction and embedding. However, it is not recommended to use them in XML as they are zero width characters, making it hard to debug the text arrangement.

Table 34: Directional Formatting Codes

U+202A (LRE)	LEFT-TO-RIGHT EMBEDDING	Treats the following text as embedded left-to-right.
U+202B (RLE)	RIGHT-TO-LEFT EMBEDDING	Treats the following text as embedded right to left.
U+202D (LRO)	LEFT-TO-RIGHT OVERRIDE	Forces the following characters to be treated as strong left-to-right characters.
U+202E (RLO)	RIGHT-TO-LEFT OVERRIDE	Forces the following characters to be treated as strong right-to-left characters.
U+202C (PDF)	POP DIRECTIONAL FORMATTING CODE	Restores the bidirectional state to what it was before the last LRE, RLE, RLO, or LRO.
U+200E (LRM)	LEFT-TO-RIGHT MARK	Left-to-right strong zero-width character.
U+200F (RLM)	RIGHT-TO-LEFT MARK	Right-to-left strong zero-width character.

To insert Unicode Direction Formatting Codes, use the **Symbols** toolbar action. To easily find such a code, you can either enter directly the hexadecimal value, or use the **Details** tab to enter the codes name.

Oxygen XML Editor plugin offers the support for bi-directional text in all the side views (**Outline** view, **Attributes** view and so on) and text fields.

Handling Read-Only Files

The default workbench behavior applies when editing read-only files in the **Text** mode. For all other modes no modification is allowed provided that the file remains read-only.

You can check out the read-only state of the file by looking in the **Properties** view. If you modify the file properties from the operating system and the file becomes writable, you can modify it on the spot without having to reopen it.

Viewing Status Information

Status information generated by operations such as *schema detection*, *manual validation*, *automatic validation*, and *transformations* are fed into the **Console** view, allowing you to monitor how the operation is being executed (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).

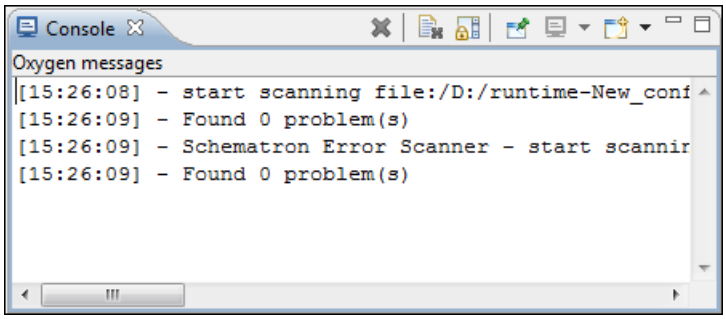


Figure 234: Console View Messages

Messages contain a timestamp, the name of the thread that generated it and the actual status information. The number of displayed messages can be controlled with the **Limit console output** option in the **View** preference page.

To make the view visible, select **Window** > **Show View** > **Console**.

Editor Highlights

An *editor highlight* is a text fragment emphasized by a colored background.

Highlights are generated in both **Text** and **Author** mode when the following actions generate results:

- **Find/Replace**
- **Find All Elements**
- **XPath in Files**
- **Search References**
- **Search Declarations**

By default, Oxygen XML Editor plugin uses a different color for each type of highlight (*XPath in Files*, *Find/Replace*, *Search References*, *Search Declarations*, etc.) You can customize these colors and the maximum number of highlights displayed in a document on the **Editor** preferences page. The default maximum number of highlights is 10000.

You can navigate the highlights in the current document by using the following methods:

- Clicking the markers from the range ruler, located at the right side of the editor pane.
- Clicking the **Next** and **Previous** buttons ( ) from the bottom of the range ruler, located at the right side of the editor pane.

  Note: When there are multiple types of highlights in the document, the **Next** and **Previous** buttons ( ) navigate through highlights of the same type.
- Clicking the messages displayed in the **Results** view at the bottom of the editor.

To remove the highlights, you can do the following:

- Click the **Remove all** button from bottom of the range ruler, located at the right side of the editor pane.
- Close the results tab at the bottom of the editor that contains the output of the action that generated the highlights.
- Click the **Remove all** button on the right side of the **Results** panel at the bottom of the editor.

Editing Specific Document Types

8

Topics:

- Editing XML Documents
- Editing XSLT Stylesheets
- Editing XML Schemas
- Editing XQuery Documents
- Editing WSDL Documents
- Editing CSS Stylesheets
- Editing Relax NG Schemas
- Editing NVDL Schemas
- Editing JSON Documents
- Editing StratML Documents
- Editing XLIFF Documents
- Editing JavaScript Documents
- Editing XProc Scripts
- Editing Schematron Schemas
- Editing Schematron Quick Fixes
- Editing XHTML Documents
- Editing Markdown Documents

This chapter includes a large amount of information about editing numerous types of documents and various editing features that are provided in Oxygen XML Editor plugin. Each type of document has unique features and options and this chapter includes an extensive collection of topics about editing XML documents in **Text** mode and the visual **Author** mode.

Editing XML Documents

This section explains the various features in Oxygen XML Editor plugin for editing XML documents. It includes information about the user interface components and actions that are available in the various editing modes and numerous features to help you edit XML documents in any mode.

Related Information:

Text Editing Mode on page 139
Author Editing Mode on page 192
Grid Editing Mode on page 184

Editing XML Documents in Text Mode

The Oxygen XML Editor plugin **Text** editing mode is designed to be a simple, yet powerful, XML source editor. You can use this mode to edit XML code, markup, and text and it provides support to help you transform, and debug XML-based documents. It is similar to other common text editors, but Oxygen XML Editor plugin also includes specialized editing actions, a powerful *Content Completion Assistant*, a helpful **Outline** view, and many other unique features.

To switch to this mode, select **Text** at the bottom of the editing area.

Navigating the Document Content in Text Mode

Oxygen XML Editor plugin includes some useful features to help you navigate XML documents in **Text** mode.

Using the Keyboard

Oxygen XML Editor plugin allows you to quickly navigate through a document using the **Ctrl + CloseBracket (Command + CloseBracket on OS X)** key to go to the next XML node and **Ctrl + OpenBracket (Command + OpenBracket on OS X)** to go to the previous one.

To navigate one word forward or backwards, use **Ctrl + RightArrow (Command + RightArrow on OS X)**, and **Ctrl + LeftArrow (Command + LeftArrow on OS X)**, respectively. To position the cursor at the beginning or end of the document you can use **Ctrl + Home (Command + Home on OS X)**, and **Ctrl + End (Command + End on OS X)**, respectively.

Navigation Shortcuts

Oxygen XML Editor plugin includes some keyboard shortcuts to help you quickly navigate to a particular modification. They are also available as actions in the **Navigation** menu.

- **Ctrl+Q - Last Edit Location** - Moves the cursor to the last modification in any opened document.
- **Alt+LeftArrow (Command+OpenBracket on OS X) - Back** - Moves the cursor to the previous position.
- **Alt+RightArrow (Command+CloseBracket on OS X) - Forward** - Moves the cursor to the next position.

Navigating with the Outline View

Oxygen XML Editor plugin includes a very useful **Outline** view that displays a hierarchical tag overview of the currently edited XML Document.

You can use this view to quickly navigate through the current document by selecting nodes in the outline tree. It is synchronized with the editor area, so when you make a selection in the **Outline** view, the corresponding nodes are highlighted in the editor area.

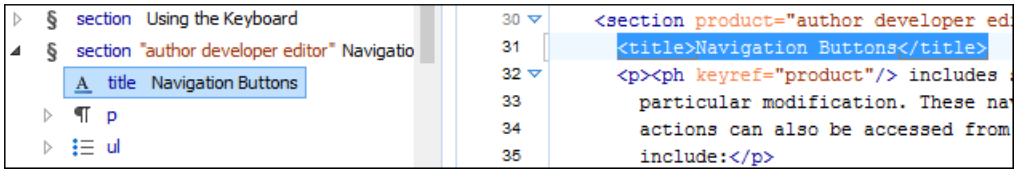


Figure 235: Outline View Navigation in Text Mode

Using the Breadcrumb to Navigate

A *breadcrumb* on the top stripe indicates the path from the document root element to the current element. It can also be used as a helpful tool to navigate to specific elements throughout the structure of the document.

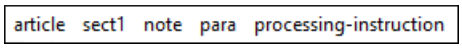


Figure 236: Breadcrumb in Text Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. Clicking an element from the *breadcrumb* selects the entire element and navigates to it in the editor area.

Navigating with the Go To Dialog Box

In **Text** mode, you can navigate precisely to a location in the document you are editing by using the **Go To Line (Ctrl+L (Command+L on OS X))** action that is available in the **Navigation** menu.

Navigating with Bookmarks

By using *bookmarks*, you can mark positions in an edited document so that you can return to it later. This is especially helpful for navigating through large documents or while editing multiple documents.

To insert a *bookmark* in **Text** mode, right-click the desired location in the vertical stripe on the left side of the editor and select **Add Bookmark** (you can remove it by selecting **Remove Bookmark** from the same contextual menu).

You can navigate the *bookmarks* by clicking on their corresponding markers in the vertical stripe on the right side of the editor.

Tip: You can configure the color and how the *bookmarks* are shown from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Smart Editing in Text Mode

Oxygen XML Editor plugin includes *smart editing* features to help you edit XML documents in **Text** mode. The following smart editing features are included:

- **Closing tag auto-expansion** - This feature helps save some keystrokes by automatically inserting a closing tag when you insert a complete start tag and the cursor is automatically placed in between the start and end tags. For instance, after entering a start `<tag>`, the corresponding closing `</tag>` is automatically inserted and the cursor is placed between the two (`<tag>|</tag>`.
- **Auto-rename matching tag** - When you edit the name of a start tag, Oxygen XML Editor plugin will mirror-edit the name of the matching end tag. This feature can be controlled from the **Content Completion** option page.
- **Auto-breaking the edited line** - The **Hard line wrap** option automatically breaks the edited line when its length exceeds the maximum line length defined for the format and indent operation.
- **Indent on Enter** - The **Indent on Enter** option indents the new line inserted when you press **Enter**.
- **Smart Enter** - The **Smart Enter** option inserts an empty line between the start and end tags. If you press **Enter** between a start and end tag, the action places the cursor in an indented position on the empty line between the lines that contain the start and end tag.
- **Double-click** - A double-click selects certain text, depending on the position of the click in the document:
  - If the click position is on a start tag or end tag, then the element name is selected.
  - If the click position is after a start tag or before an end tag, then the entire content of the element without the start and end tags is selected.
  - If the click position is before a start tag or after an end tag, then the entire tag is selected, including the start and end tags, and the content in between.
  - If the click position is immediately before an attribute, then the entire attribute and its value is selected.
  - If the click position is immediately after the opening quote or immediately before the closing quote of an attribute value, then the entire attribute value is selected.
  - Otherwise, a double-click selects contiguous text.
- **Triple-click** - A triple-click selects the entire current line of text.

Shortcut Actions in Text Mode

Oxygen XML Editor plugin includes numerous shortcut actions to help you edit content in the **Text** editing mode.

Undo/Redo Actions

The typical undo and redo actions are available with shortcuts or in the **Edit** menu:

Undo (Ctrl + Z (Command + Z on OS X))

Reverses a maximum of 200 editing actions to return to the preceding state.

Note: Complex operations such as **Replace All** or **Indent selection** count as single undo events.

Redo (Ctrl + Y (Command + Shift + Z on OS X, Ctrl + Shift + Z on Linux/Unix))

Recreates a maximum of 100 editing actions that were undone by the **Undo** function.

Copy and Paste Actions

The typical copying and pasting actions are available with shortcuts or in the contextual menu (or the **Edit** menu):

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Select All (Ctrl + A (Command + A on OS X))

Selects the entire content of the current document.

Moving XML Nodes

You can use the following shortcuts to move XML elements or XSLT variables up or down in **Text** mode:

Ctrl + Alt + UpArrow (Command + Alt + UpArrow on OS X)

Moves the node up one line.

Ctrl + Alt + DownArrow (Command + Alt + DownArrow on OS X)

Moves the node down one line.

Note: The requirements for these node moving actions to work are as follows:

- The mechanism is designed to work without a selection. If you use these actions on a selection of content, it moves the entire selection. To make this mechanism work as intended, simply position the cursor somewhere on the line that you want to move.
- A start tag must be the first text occurrence on the line where the cursor is positioned.
- On the line where the element ends, only whitespaces are allowed after the end tag.

Miscellaneous Shortcut Actions in Text Mode

Oxygen XML Editor plugin also includes the following other miscellaneous shortcut actions in **Text** mode:

Ctrl + Delete (Command + Delete on OS X)

Deletes the next word.

Ctrl + Backspace (Command + Backspace on OS X)

Deletes the previous word.

Ctrl + W (Command + W on OS X)

Cuts the previous word.

Ctrl + K (Command + K on OS X)

Cuts to end of line.

Ctrl + Single-Click (Command + Single-Click on OS X)

Use this shortcut to open any of the following:

- Any absolute URL (URLs that have a protocol), regardless of their location in the document.
- URI attributes such as: `schemaLocation`, `noNamespaceSchemaLocation`, `href` and others.
- Processing instructions used for associating resources, xml-models, xml-stylesheets.

Ctrl + Shift + Y (Command + Shift + Y on OS X) (Document > Edit > Toggle Line Wrap)

Enables or disables line wrapping. When enabled, if text exceeds the width of the displayed editor, content is wrapped so that you do not have to scroll horizontally.

Editing XML Markup in Text Mode

Oxygen XML Editor plugin includes some useful actions that allow you to easily edit XML markup in **Text** mode. These actions are available in the **Refactoring** submenu of the contextual menu, and many of the actions can also be done with simple keyboard shortcuts.

Using the Breadcrumb

A *breadcrumb* on the top stripe indicates the path from the document root element to the current element. It can also be used as a helpful tool to insert and edit specific elements in the document structure.

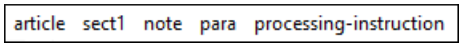


Figure 237: Breadcrumb in Text Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. Clicking an element in the *breadcrumb* selects the entire element in the editor area. Also, each element provides a contextual menu with access to the following actions:

Append Child

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it as a child of the current element.

Insert Before

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately before the current element, as a sibling.

Insert After

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately after the current element, as a sibling.

Edit Attributes

Opens an editing window that allows you to edit the attributes of the currently selected element.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Cut

Removes the selected element and copies it to the clipboard.

Copy

Copies the selected element to the clipboard.

Delete

Deletes the currently selected element.

Move Nodes

You can easily move XML nodes in the current document by using the following shortcut keys:

Alt + UpArrow

Moves the current node or selected nodes in front of the previous node.

Alt + DownArrow

Moves the current node or selected nodes after the subsequent node.

Rename Elements

You can rename elements by using the following actions in the **Refactoring** submenu of the contextual menu:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Rename Prefix (Alt + Shift + P (Command + Shift + P on OS X))

The prefix of the element from the cursor position, and any elements with the same prefix, can be renamed according with the options from the **Rename** dialog box.

- If you select the **Rename current element prefix** option, the application will recursively traverse the current element and all its children. *For example*, to change the `xmlns:p1="ns1"` association in the current element to `xmlns:p5="ns1"`, if the `xmlns:p1="ns1"` association is applied on the parent element, then Oxygen XML Editor plugin will introduce `xmlns:p5="ns1"` as a new declaration in the current element and will change the prefix from `p1` to `p5`. If `p5` is already associated with another namespace in the current element, then the conflict will be displayed in a dialog box. By pressing **OK**, the prefix is modified from `p1` to `p5` without inserting a new declaration.
- If you select the **Rename current prefix in all document** option, the application will apply the change on the entire document.
- To also apply the action inside attribute values, select the **Rename also attribute values that start with the same prefix** checkbox.

Surround Content with Tags (Wrap)

You can surround a selection of content with tags (*wrap* the content) by using the following action in the **Refactoring** submenu of the contextual menu:

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag that encloses a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Surround with <![CDATA]]> (Alt + Shift + C (Command + Alt + C on OS X))

Surround the selected content with a `CDATA` tag so that the parser will interpret it as textual data rather than markup.

Unwrap the Content of Elements

You can unwrap the content of an element by using the following action in the **Refactoring** submenu of the contextual menu:

Delete element tags (Alt + Shift + Comma)

Deletes the start and end tag of the current element.

Join or Split Elements

You can join or split elements in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Join elements (Alt + Shift + F (Command + Alt + F on OS X))

Joins the left and right elements relative to the current cursor position. The elements must have the same name, attributes, and attributes values.

Split element

Split the element from the cursor position into two identical elements. The cursor must be inside the element.

Other Refactoring Actions

You can also manage the structure of the markup by using the other specific XML refactoring actions that are available in the **Refactoring** submenu of the contextual menu:

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Related Information:

Refactoring XML Documents on page 596
Contextual Menu Actions in Text Mode on page 429

Folding XML Elements in Text Mode

When working with a large document, the *folding* support in Oxygen XML Editor plugin can be used to collapse some element content leaving only those that you need to edit in focus. Expanding and collapsing works on individual elements. Expanding an element leaves the child elements unchanged.

Figure 238: Folding of XML Elements in Text Mode

Folding Actions in Text Mode

Element folds are marked with a small icon (/) in the left stripe. To toggle the fold, simply click the icon. Also, if you right-click the icon, the following actions are available in the **Folding** sub-menu:

Toggle Fold

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the child elements that are indented one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

For more information about the *folding* support in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/eR9HfN_peAE

Drag and Drop in Text Mode

To move a whole region of text to other location in the same edited document, just select the text, drag the selection by holding down the left mouse button and drop it to the target location.

You can also copy content from other applications and paste it into the document.

Selecting Content in Text Mode

Oxygen XML Editor plugin includes a variety of keyboard shortcuts that allow you to select content in **Text** mode. These include numerous standard continuous selection possibilities that are common to many text editors.

Standard Continuous Selection Shortcuts

Ctrl + A (Meta + A on Mac OS X)

Selects all content in the document.

Shift + Left/Right Arrow Keys

Begins a continuous selection at the cursor position and extends it one character at a time in the direction that you press the arrow keys.

Shift + Up/Down Arrow Keys

Begins a continuous selection at the cursor position and extends it one line at a time in the direction that you press the arrow keys.

Ctrl + Shift + Left/Right Arrow Keys (Meta + Shift + Left/Right Arrow Keys on Mac OS X)

Begins a continuous selection at the cursor position and extends it one word at a time in the direction that you press the arrow keys.

Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the current line (on Mac OS X, it extends to the beginning of the document).

Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the current line (on Mac OS X, it extends to the end of the document).

Ctrl + Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the document.

Ctrl + Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the document.

Shift + PageUp

Begins a continuous selection at the cursor position and extends it up one screen page.

Shift + PageDown

Begins a continuous selection at the cursor position and extends it down one screen page.

Double-Click

Selects certain text, depending on the position of the click in the document. See Smart Editing Double-Click for the specifics.

Triple-Click

Selects entire regions of text, depending on the position of the click in the document. See the Smart Editing Triple-Click for the specifics.

Right-Click > Select > Element

Selects the entire element at the current cursor position.

Right-Click > Select > Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Right-Click > Select > Attributes

Selects all the attributes of the element at the current cursor position.

Right-Click > Select > Parent

Selects the entire parent element at the current cursor position.

Content Completion Assistant in Text Mode

Oxygen XML Editor plugin includes an intelligent *Content Completion Assistant* that offers rapid, inline identification and insertion of structured language elements, attributes, and attribute values. Oxygen XML Editor plugin shows the available entries that are valid in the current editing context.

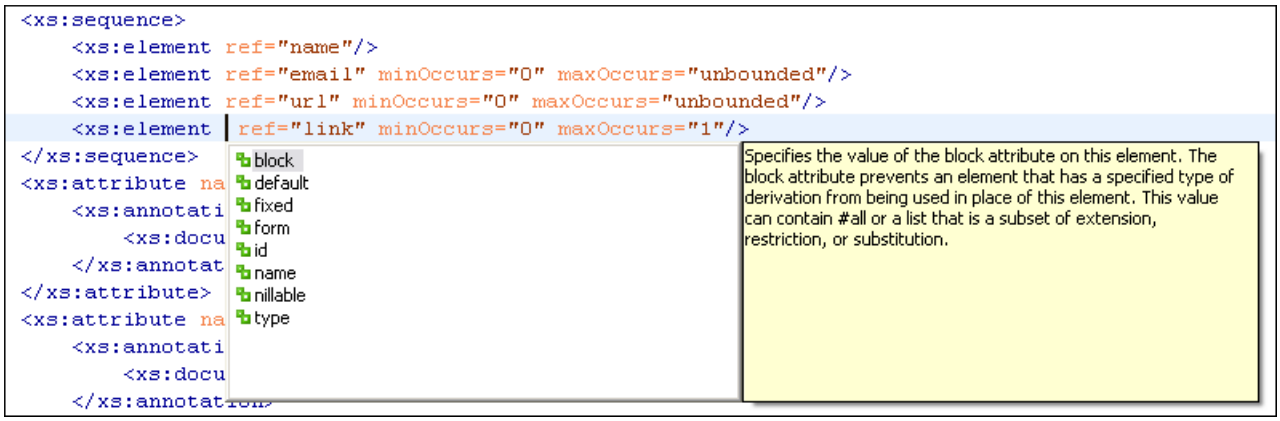


Figure 239: Content Completion Assistant

The *Content Completion Assistant* feature is schema-driven (XML Schema, DTD, and RELAX NG) and status information about the detected schema is logged in the Status view.

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

Using the Content Completion Assistant in Text Mode

The feature is activated in **Text** mode in the following situations:

- After you press the **<** character when inserting an element, it is automatically activated after a short delay. You can adjust the activation delay with the **Activation delay of the proposals window (ms)** option from the **Content Completion** preferences page.
- After typing a partial element or attribute name, you can manually activate it by pressing **Ctrl + Space (Command + Space on OS X)** or **Alt + ForwardSlash (Command + Alt + ForwardSlash on OS X)**. If there is only one valid proposal at the current location, it is inserted without displaying the list of proposals.

You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. In same cases, the *Content Completion Assistant* displays a documentation window with information about the particular proposal and some of them have links to additional information (for example, DITA elements might have a link to the DITA Style Guide). You can also change the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Text** mode, do one of the following:

- Press **Enter** or **Tab** to insert both the start and end tags and position the cursor inside the start tag in a position suitable for inserting attributes.
- Press **Ctrl + Enter (Command + Enter on OS X)** to insert both the start and end tags and positions the cursor between the tags in a position where you can start typing content.

Note: When the DTD, XML Schema or RELAX NG schema specifies required child elements for the newly added element, they are inserted automatically only if the **Add Element Content** option (in the **Content Completion** preferences page) is selected. The *Content Completion Assistant* can also add optional content and first choice particle, as specified in the DTD, XML Schema, or RELAX NG schema. To activate these features, select the **Add optional content** and **Add first Choice particle** options in the **Content Completion** preferences page.

After inserting an element, the cursor is positioned:

- Before the > character of the start tag, if the element allows attributes, to allow rapid insertion of any of the attributes supported by the element. Pressing the space bar displays the Content Completion list once again. This time it contains the list of allowed attribute names. If the attribute supports a fixed set of parameters, the assistant list displays the list of valid parameters. If the parameter setting is user-defined and therefore variable, the assistant is closed to allow manual insertion. The values of the attributes can be learned from the same elements in the current document
- After the > character of the start tag if the element has no attributes.

Where the Content Completion Assistant is Displayed

The *Content Completion Assistant* is displayed:

- Anywhere within a tag name or at the beginning of a tag name in an XML document, XML Schema, DTD,or Relax NG (full or compact syntax) schema.
- Anywhere within an attribute name or at the beginning of an attribute name in any XML document with an associated schema.
- Within attribute values or at the beginning of attribute values in XML documents where lists of possible values have been defined for that element in the schema associated with the document.

Types of Proposals Listed in the Content Completion Assistant

The following things are considered for determining the proposals that are listed in the content completion window:

Element Structure Specified in DTD or Schema

The proposals that populate the *Content Completion Assistant* depend on the element structure specified in the DTD, XML Schema, Relax NG (full or compact syntax) schema, or NVDL schema associated with the edited document.

Note: The *Content Completion Assistant* is able to offer elements defined both by XML Schemas version 1.0 and 1.1.

Current Cursor Position

The number and type of elements displayed by the *Content Completion Assistant* is dependent on the cursor's current position in the structured document. The child elements displayed within a given element are defined by the structure of the specified DTD, XML Schema, Relax NG (full or compact syntax) schema, or NVDL schema.

Unique ID Attribute Values

A schema may declare certain attributes as *ID* or *IDREF/IDREFS*. When the document is validated, Oxygen XML Editor plugin checks the uniqueness and correctness of the `ID` attributes. It also collects the attribute values declared in the document to prepare the list of proposals. This is available for documents that use DTD, XML Schema, and Relax NG schema.

Values for *xml:id* Attributes

Values of all the `xml:id` attributes are handled as `ID` attributes. They are collected and displayed by the *Content Completion Assistant* as possible values for *anyURI* attributes defined in the schema of the edited document. This works only for XML Schema and Relax NG schemas.

Links/References in DITA

When entering values for the various types of links and references in DITA (for example, values for `href` or `conref` elements), the *Content Completion Assistant* will propose potential targets when you use the forward slash key (*/*).

ID Values for DITA Key References

In DITA, when inserting key references (`keyref`) or content key references (`conkeyref`), the ID values that are defined in the key reference are presented as possible targets. The *Content Completion Assistant* will only propose targets that are valid in the current context.

Element and Attribute Values

For documents that use an XML Schema or Relax NG schema, the *Content Completion Assistant* offers proposals for attribute and element values as long as the allowed values are defined in the schema. Also, if a default value or fixed value is defined in the schema, then that value is offered in the *Content Completion Assistant*.

Related Information:

Customizing the Content Completion Assistant on page 1300

Set Schema to be Used for Content Completion in Text Mode

The list of proposals in the *Content Completion Assistant* depend on the associated schemas. The DTD, XML Schema, Relax NG, or NVDL schema used to populate the *Content Completion Assistant* is specified in the following methods, in the order of their precedence:

- The schema specified explicitly in the document. In this case, Oxygen XML Editor plugin reads the beginning of the document and resolves the location of the DTD, XML Schema, Relax NG schema, or NVDL schema.
- The default schema declared in the **Document Type** configuration dialog box that matches the edited document type.
- For XSLT stylesheets, the schema specified in the Oxygen XML Editor plugin **XSL** preferences page. Oxygen XML Editor plugin will read the content completion settings when the prolog fails to provide or resolve the location of a DTD, XML Schema, Relax NG, or NVDL schema.
- For XML Schemas, the schema specified in the Oxygen XML Editor plugin **XSD** preferences page. Oxygen XML Editor plugin will read the content completion settings and the specified schema will enhance the content completion inside the `xs:annotation/xs:appinfo` elements of the XML Schema.

Oxygen XML Editor plugin creates the content completion lists by analysing the detected schema and the current context (the position in the editor). If you change the schema, then the list of tags to be inserted is also updated.

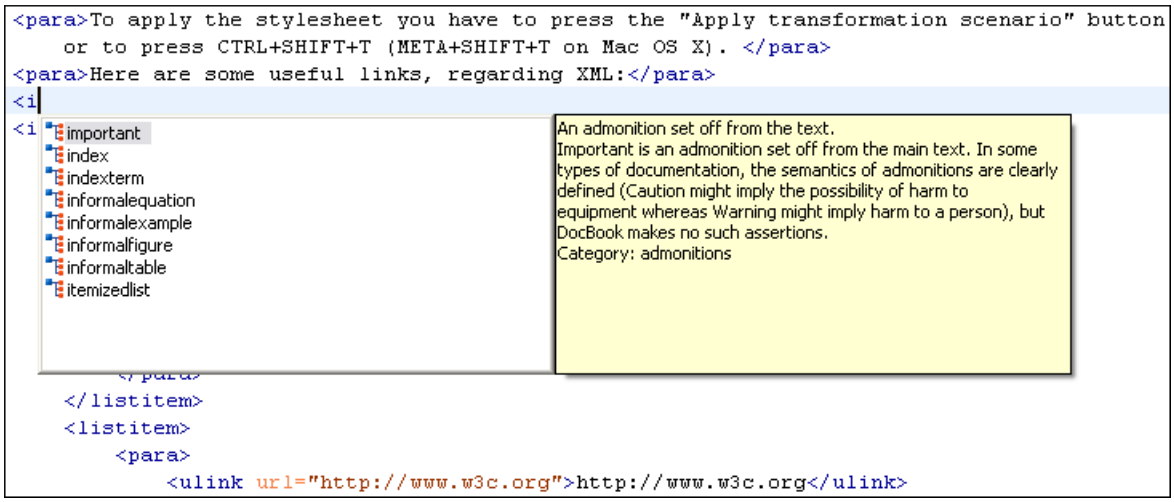


Figure 240: Example: Content Completion Driven by DocBook DTD

Schema Annotations in Text Mode

A schema annotation is a documentation snippet associated with the definition of an element or attribute in a schema. If such a schema is associated with an XML document, the annotations are displayed in:

- The *Content Completion Assistant*.
- A small tooltip window shown when the mouse hovers over an element or attribute.

The schema annotations support is available if the schema type is one of the following:

- XML Schema
- Relax NG
- NVDL schema
- DTD

This feature is enabled by default, but you can disable it by deselecting the **Show annotations in Content Completion Assistant** option in the **Annotations** preferences page.

Styling Annotations with HTML

You can use HTML format in the annotations you add in an XML Schema or Relax NG schema. This improves the visual appearance and readability of the documentation window displayed when editing XML documents validated against such a schema. An annotation is recognized and displayed as HTML if it contains at least one HTML element (such as `div`, `body`, `p`, `br`, `table`, `ul`, or `ol`).

The HTML rendering is controlled by the **Show annotations using HTML format, if possible** option in the **Annotations** preferences page. When this options is deselected, the annotations are converted and displayed as plain text and if the annotation contains one or more HTML tags (p, `br`, `ul`, `li`), they are rendered as an HTML document loaded in a web browser. For example, p begins a new paragraph, `br` breaks the current line, `ul` encloses a list of items, and `li` encloses an item of the list.

Collecting Annotations from XML Schemas

In an XML Schema, the annotations are specified in an `<xs:annotation>` element like this:

```
<xs:annotation>
  <xs:documentation>
            Description of the element.
  </xs:documentation>
</xs:annotation>
```

If an element or attribute does not have a specific annotation, then Oxygen XML Editor plugin looks for an annotation in the type definition of that element or attribute.

Collecting Annotations from Relax NG Schemas

For Relax NG schema, element and attribute annotations are made using the `<documentation>` element from the `http://relaxng.org/ns/compatibility/annotations/1.0` namespace like this:

```
<define name="person" >
  <element name="person">
    <a:documentation xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0">
            Information about a person. </a:documentation>
      <ref name="name"/>
        <zeroOrMore>
      <ref name="email"/>
        </zeroOrMore>
  </element>
</define>
```

However, any element outside the Relax NG namespace (`http://relaxng.org/ns/structure/1.0`) is handled as annotation and the text content is displayed in the annotation window. To activate this behavior, select the **Use all Relax NG annotations as documentation** option in the **Annotations** preferences page.

Collecting Annotations from Relax NG Compact Syntax Schemas

For Relax NG Compact Syntax schema, annotations are made using comments like this:

```
##  Information about a person.
element person { name, email*}
```

Collecting Annotation from DTDs

For DTD, Oxygen XML Editor plugin defines a custom mechanism for annotations using comments enabled by the **Prefer DTD comments that start with "doc:" as annotations** option in the **Annotations** preferences page. The following is an example of a DTD annotation:

```
<!--doc:Description of the element. -->
```

Content Completion Helper Views

Information about the current element being edited is also available in various *dockable* views, such as the **Model** view, **Attributes** view, **Elements** view, and **Entities** view. By default, they are located on the right-hand side of the main editor window. These views, along with the powerful **Outline** view, provide spatial and insight information about the edited document and the current element. If any particular view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

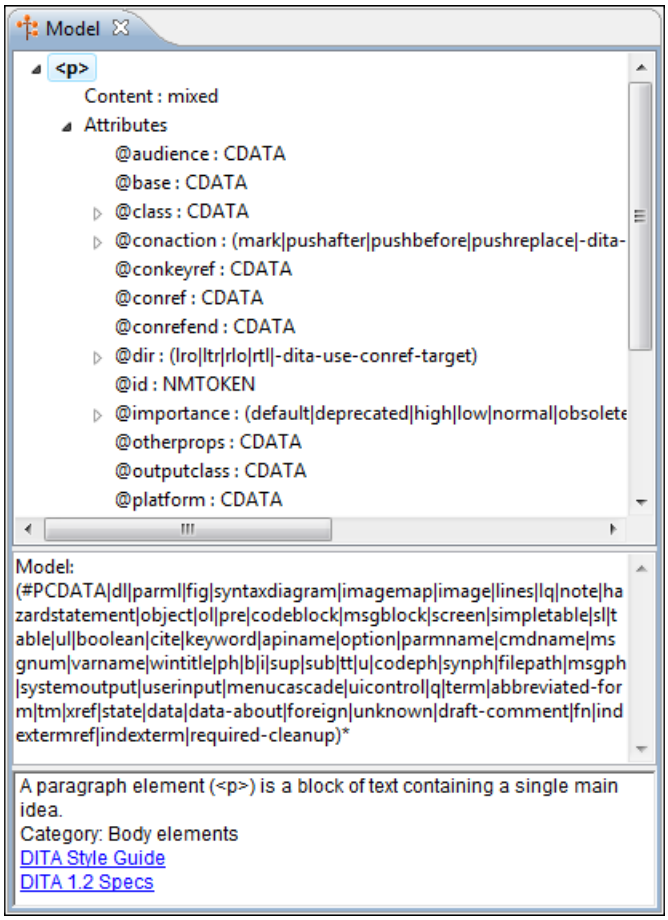


Figure 241: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

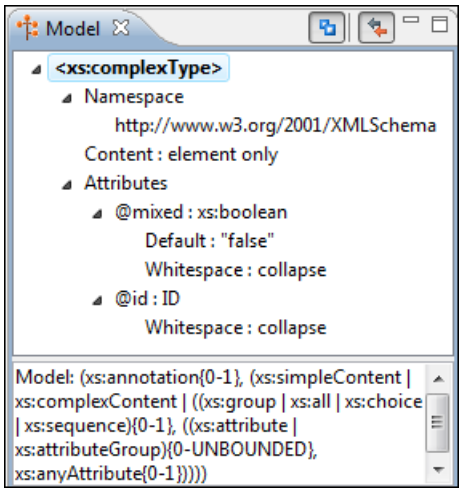


Figure 242: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

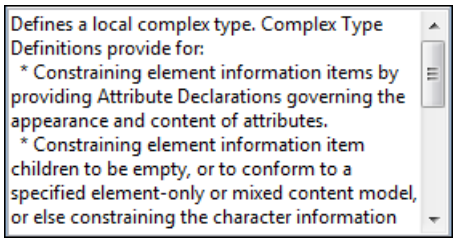


Figure 243: Annotation panel

Attributes View in Text Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use the **Attributes** view to insert attributes, edit their values, or add values to existing attributes.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.
- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

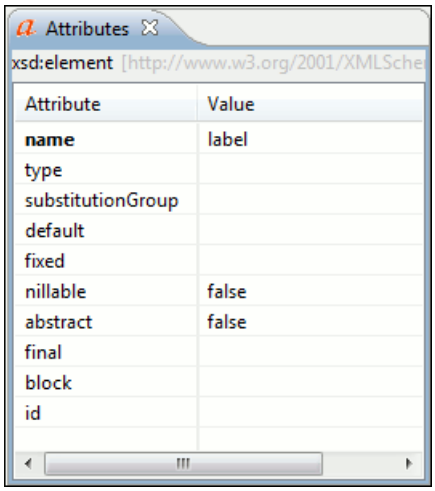


Figure 244: Attributes View

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Text** mode:

Add

Allows you to insert a new attribute. Adding an attribute that is not in the list of all defined attributes is not possible when the Allow only insertion of valid elements and attributes schema-aware option is selected.

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.
- If the clipboard only contains text, the value of the selected attribute is modified.

Elements View in Text Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking any of the listed elements inserts that element into the edited document, at the current cursor position. Pressing **F2** with an element selected will display information about that particular element.

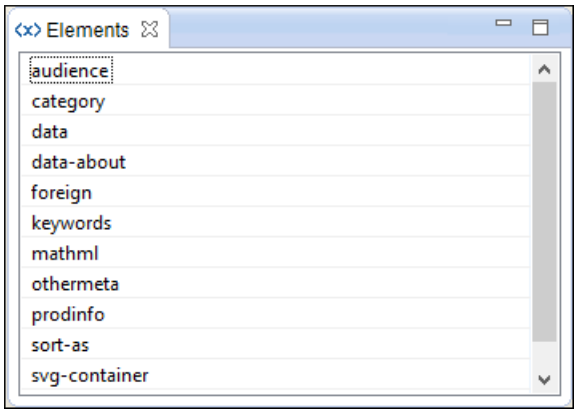


Figure 245: Elements View in Text Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

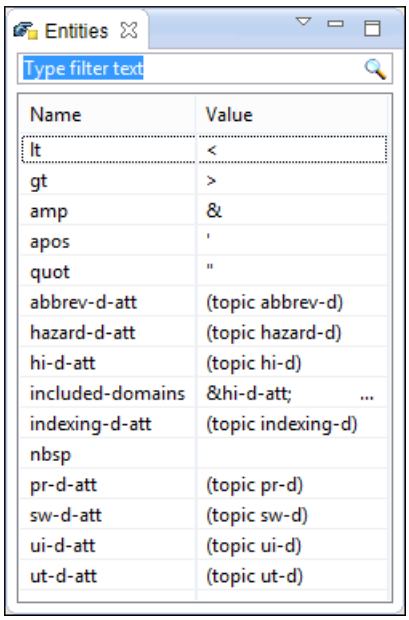


Figure 246: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Code Templates

Code templates are code fragments that can be inserted quickly at the current editing position . Oxygen XML Editor plugin includes a set of built-in code templates for CSS, Schematron, XSL, XQuery, and XML Schema document types. You can also define your own code templates for any type of file and share them with others.

To get a complete list of available code templates, press **Ctrl + Shift + Space** in **Text** mode. To enter the code template, select it from the list or type its code and press **Enter**. If a shortcut key has been assigned to the code template, you can also use the shortcut key to enter it. Code templates are displayed with a symbol in the content completion list.

When the *Content Completion Assistant* is invoked (**Ctrl + Space (Command + Space on OS X)** in **Text** mode or **Enter** in **Author** mode), it also presents a list of code templates specific to the type of the active editor.

For more information about code templates, watch our video demonstration:

https://www.youtube.com/embed/eNOMCJSzIu8

Syntax Highlighting in XML Documents

Oxygen XML Editor plugin supports syntax highlighting in XML documents to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for XML files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Customize Syntax Highlight colors on page 92

Outline View in Text Mode

The **Outline** view in **Text** mode displays a general tag overview of the currently edited XML Document. When you edit a document, the **Outline** view dynamically follows the changes that you make, displaying the node that you modify. This functionality gives you great insight on the location of your modifications in the current document. It also shows the correct hierarchical dependencies between elements. This makes it easy for you to be aware of the document structure and the way element tags are nested.

Outline View Features

The **Outline** view allows you to:

- Quickly navigate through the document by selecting nodes in the **Outline** tree.
- Insert or delete nodes using contextual menu actions.
- Move elements by dragging them to a new position in the tree structure.
- Highlight elements in the editor area. It is synchronized with the editor area, so when you make a selection in the editor area, the corresponding nodes are highlighted in the **Outline** view, and vice versa.
- View document errors, as they are highlighted in the **Outline** view. A tooltip also provides more information about the nature of the error when you hover over the faulted element.

Outline View Interface

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

It also includes a **View menu** in the top-right corner that presents a variety of options to help you filter the view even further.

Drop and Drop Actions in the Outline View

Entire XML elements can be moved or copied in the edited document using only the mouse in the **Outline** view with drag-and-drop operations. Several drag and drop actions are possible:

- If you drag an XML element in the **Outline** view and drop it on another node, then the dragged element will be moved after the drop target element.
- If you hold the mouse pointer over the drop target for a short time before the drop then the drop target element will be expanded first and the dragged element will be moved inside the drop target element after its opening tag.

- You can also drop an element before or after another element if you hold the mouse pointer towards the upper or lower part of the targeted element. A marker will indicate whether the drop will be performed before or after the target element.
- If you hold down the **(Ctrl (Command on OS X))** key after dragging, a copy operation will be performed instead of a move.

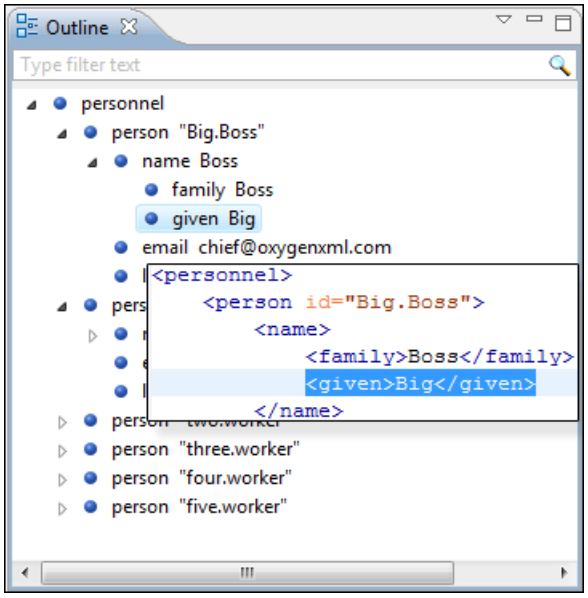


Figure 247: Outline View in Text Mode

Related Information:

Outline View in Author Mode on page 199

Outline View Filters in Text Mode

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

The following actions are available in the **View menu** of the **Outline** view when editing in **Text** mode:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Selection update on cursor move

Controls the synchronization between **Outline** view and source document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes in the editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the **XML Structured Outline** preferences page.

Outline View Contextual Menu Actions in Text Mode

The following actions are available from the contextual menu in the **Outline** view in **Text** mode:

Append Child

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it as a child of the current element.

Insert Before

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately before the current element, as a sibling.

Insert After

Allows you to select an element (from a drop-down list) that is allowed by the associated schema and inserts it immediately after the current element, as a sibling.

Edit Attributes

Opens a dialog box that allows you to edit the attributes of the currently selected component.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

Formatting and Indenting XML Documents

Oxygen XML Editor plugin creates XML documents using several edit modes. In **Text** mode, you as the author decide how the XML file is formatted and indented. In the other modes, and when you switch between modes, Oxygen XML Editor plugin must decide how to format and indent the XML. Oxygen XML Editor plugin will also format and indent your XML for you in **Text** mode if you use one of the Format and Indent options:

- **Document** > **Source** > **Format and Indent** - Formats and indents the whole document.
- **Document** > **Source** > **Indent Selection** - Indents the current selection (but does not add line breaks). This action is also available in the **Source** submenu of the contextual menu.
- **Document** > **Source** > **Format and Indent Element** - Formats and indents the current element (the inmost nested element that currently contains the cursor) and its child-elements. This action is also available in the **Source** submenu of the contextual menu.

A number of settings affect how Oxygen XML Editor plugin formats and indents XML. Many of these settings have to do with how whitespace is handled.

Significant and insignificant whitespace in XML

XML documents are text files that describe complex documents. Some of the white space (spaces, tabs, line feeds, etc.) in the XML document belongs to the document it describes (such as the space between words in a paragraph) and some of it belongs to the XML document (such as a line break between two XML elements). Whitespace belonging to the XML file is called *insignificant whitespace*. The meaning of the XML would be the same if the insignificant whitespace were removed. Whitespace belonging to the document being described is called *significant whitespace*.

Knowing when whitespace is significant or insignificant is not always easy. For instance, a paragraph in an XML document might be laid out like this:

```
<p>NO Free man shall be taken or imprisoned, or be stripped of his Freedom,
or Liberties, or free Customs, or be outlawed, or exiled, or any otherwise
destroyed; nor will we not pass upon him, nor condemn him, but by lawful
judgment of his Peers, or by the <xref
href="http://en.wikipedia.org/wiki/Law_of_the_land" format="html"
scope="external">Law of the land</xref>.
We will sell to no man, we will not deny to any man either Justice or Right.</p>
```

By default, XML considers a single whitespace between words to be significant, and all other whitespace to be insignificant. The paragraph above could have been written on one line because the XML parser would see it as exactly the same paragraph since all multiple consecutive whitespaces will be replaced with a single whitespace. Removing the insignificant space in markup like this is called *normalizing space*.

In some cases, all the spaces inside an element should be treated as significant. For example, in a code sample:

```
<codeblock>
class HelloWorld
{
   public static void main(String args[])
   {
      System.out.println("Hello World");
   }
}
</codeblock>
```

Here every whitespace character between the `codeblock` tags should be treated as significant.

How Oxygen XML Editor plugin determines when whitespace is significant

When Oxygen XML Editor plugin formats and indents an XML document, it introduces or removes insignificant whitespace to produce a layout with reasonable line lengths and elements indented to show their place in the hierarchy of the document. To correctly format and indent the XML source, Oxygen XML Editor plugin needs to know when to treat whitespace as significant and when to treat it as insignificant. However it is not always possible to tell this from the XML source file alone. To determine what whitespace is significant, Oxygen XML Editor plugin assigns each element in the document to one of four categories:

Ignore space

In the ignore space category, all whitespace is considered insignificant. This generally applies to content that consists only of elements nested inside other elements, with no text content.

Normalize space

In the normalize space category, a single whitespace character between character strings is considered significant and all other spaces are considered insignificant. Therefore, all consecutive whitespaces will be replaced with a single space. This generally applies to elements that contain text content only.

Mixed content

In the mixed content category, a single whitespace between text characters is considered significant and all other spaces are considered insignificant. However,

- Whitespace between two child elements embedded in the text is normalized to a single space (rather than to zero spaces as would normally be the case for a text node with only whitespace characters, or the space between elements generally).
- The lack of whitespace between a child element embedded in the text and either adjacent text or another child element is considered significant. That is, no whitespace can be introduced here when formatting and indenting the file.

For example:

```
<p>The file is located in <i>HOME</i>/<i>USER</i>/hello.
     This is a <strong>big</strong>

<emphasis>deal</emphasis>.
</p>
```

In this example, whitespace should not be introduced around the i tags as it would introduce extra significant whitespace into the document. The space between the end `</strong>` tag and the beginning `<emphasis>` tag should be normalized to a single space, not zero spaces.

Preserve space

In the preserve space category, all whitespace in the element is regarded as significant. No changes are made to the spaces in elements in this category. However, child elements may be in another category, and may be treated differently.

Attribute values are always in the preserve space category. The spaces between attributes in an element tag are always in the default space category.

Oxygen XML Editor plugin consults several pieces of information to assign an element to one of these categories. An element is always assigned to the most restrictive category (from Ignore to Preserve) that it is assigned to by any of the sources Oxygen XML Editor plugin consults. For instance, if the element is named on the **Default elements** list (as described below) but it has an `xml:space="preserve"` attribute in the source file, it will be assigned to the preserve space category. If an element has the `xml:space="default"` attribute in the source, but is listed on the **Mixed content** elements list, it will be assigned to the mixed content category.

To assign elements to these categories, Oxygen XML Editor plugin consults information from the following sources:

`xml:space`

If the XML element contains the `xml:space` attribute, the element is promoted to the appropriate category based on the value of the attribute.

CSS whitespace property

If the CSS stylesheet controlling the **Author** mode editor applies the `whitespace: pre` setting to an element, it is promoted to the preserve space category.

CSS display property

If a text node contains only white-spaces:

- If the node has a parent element with the CSS `display` property set to `inline` then the node is promoted to the mixed content category.
- If the left or right sibling is an element with the CSS `display` property set to `inline` then the node is promoted to the mixed content category.
- If one of its ancestors is an element with the CSS `display` property set to `table` then the node is assigned to the ignore space category.

Schema aware formatting

If a schema is available for the XML document, Oxygen XML Editor plugin can use information from the schema to promote the element to the appropriate category. For example:

- If the schema declares an element to be of type `xs:string`, the element will be promoted to the preserve space category because the string built-in type has the whitespace facet with the value preserve.
- If the schema declares an element to be mixed content, it will be promoted to the mixed content category.

Schema aware formatting can be turned on and off.

- To turn it on or off for **Author** mode, open the **Preferences** dialog box , go to **Editor** > **Edit modes** > **Author** > **Schema aware**, and select/deselect the **Schema aware normalization, format and indent** option.
- To turn it on or off for the **Text** editing mode ,open the **Preferences** dialog box , go to **Editor** > **Format** > **XML**, and select/deselect the **Schema aware format and indent** option.

Preserve space elements list

If an element is listed in the **Preserve space** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the preserve space category.

Default space elements list

If an element is listed in the **Default space** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the default space category

Mixed content elements list

If an element is listed in the **Mixed content** tab of the **Element Spacing** list in the XML formatting preferences, it is promoted to the mixed content category.

Element content

If an element contains mixed content, that is, a mix of text and other elements, it is promoted to the mixed content category. (Note that, in accordance with these rules, this happens even if the schema declares the element to have element only content.)

If an element contains text content, it is promoted to the default space category.

Text node content

If a text node contains any non-whitespace characters then the text node is promoted to the normalize space category.

Exception to the Rule

In general, a element can only be promoted to a more restrictive category (one that treats more whitespace as significant). However, there is one exception. In **Author** mode, if an element is marked as mixed content in the schema, but the actual element contains no text content, it can be demoted to the space ignore category if all of its child elements are displayed as *blocks* by the associated CSS (that is, they have a CSS property of `display: block`). For example, in some schemas, a section or a table entry can be defined as having mixed content but in many cases they contain only *block elements*. In these cases, any whitespace they contain cannot be significant and they can be treated as space ignore elements. This exception can be turned on or off using the **Schema Aware Editing** option in the **Schema-Aware** preferences page.

How Oxygen XML Editor plugin formats and indents XML

You can control how Oxygen XML Editor plugin formats and indents XML documents. This can be particularly important if you store your XML document in a version control system, as it allows you to limit the number of trivial changes in spacing between versions of an XML document. The following preference pages include options that control how XML documents are formatted:

- **Format** preferences page
- **XML Formatting** preferences page
- **Whitespaces** preferences page

When Oxygen XML Editor plugin formats and indents XML

Oxygen XML Editor plugin formats and indents a document, or part of it, on the following occasions:

- In **Text** mode when you select one of the format and indent actions (**Document** > **Source** > **Format and Indent**, **Document** > **Source** > **Indent Selection**, or **Document** > **Source** > **Format and Indent Element**).
- When saving documents in **Author** mode.
- When switching from **Author** mode to another mode.
- When saving documents in **Design** mode.
- When switching from **Design** mode to another mode.
- When saving or switching to **Text** mode from **Grid** mode, if the **Format and indent when passing from grid to text or on save** option is selected in the **Grid** preferences page.

Setting an Indent Size to Zero

Oxygen XML Editor plugin will automatically format and indent documents at certain times. This includes indenting the content from the margin to reflect its structure. In some cases, you may not want your content indented. To avoid your content being indented, you can set an indent size of zero.

Note: Changing the indent size does not override the rules that Oxygen XML Editor plugin uses for handling whitespace when formatting and indenting XML documents. Therefore, changing the indent size will have no effect on elements that require whitespaces to be maintained.

There are two cases to consider.

Maintaining zero indent in documents with zero indent

If you have existing documents with zero indent and you want Oxygen XML Editor plugin to maintain a zero indent when editing or formatting those documents:

1. Open the **Preferences** dialog box and go to **Editor** > **Format**.
2. Select **Detect indent on open**.
3. Select **Use zero-indent if detected**.

Oxygen XML Editor plugin will examine the indent of each document as it is opened and if the indent is zero for all lines, or for nearly all lines, a zero indent will be used when formatting and indenting the document. Otherwise, Oxygen XML Editor plugin will use the indent closest to what it detects in the document.

Enforcing zero indent for all documents

If you want all documents to be formatted with zero indent, regardless of their current indenting:

1. Open the **Preferences** dialog box and go to **Editor** > **Format**.
2. Deselect **Detect indent on open**.
3. Set **Indent size** to `0`.

All documents will be formatted and indented with an indent of zero.

Warning: Setting the indent size to zero can change the meaning of some file types, such as Python source files.

Format and Indent (Pretty-Print) Multiple Files

Oxygen XML Editor plugin provides support for formatting and indenting (*pretty-print*) multiple files at once. This action is available for any document in XML format, as well as for XQuery, CSS, JavaScript, and JSON documents.

To format and indent multiple files, use the **Format and Indent Files** action that is available in the contextual menu of the **Navigator** view. This opens the **Format and Indent Files** dialog box that allows you to configure options for the action.

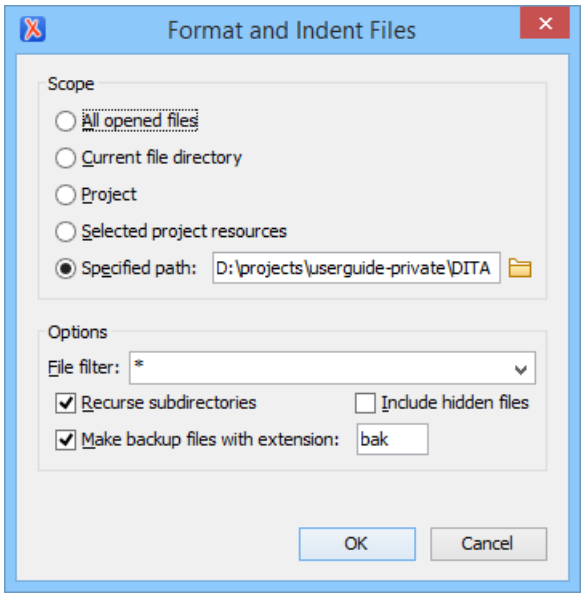


Figure 248: Format and Indent Files Dialog Box

The **Scope** section allows you choose from the following scopes:

- **All opened files** - The *pretty-print* is performed in all opened files.
- **Directory of the current file** - All the files in the folder of the current edited file.
- **Project files** - All files from the current project.
- **Selected project files** - The selected files from the current project.
- **Specified path** - the *pretty-print* is performed in the files located at a specified path.

The **Options** section includes the following options:

- **File filter** - Allow you to filter the files from the selected scope.
- **Recurse subdirectories** - When selected, the *pretty-print* is performed recursively for the specified scope. The one exception is that this option is ignored if the scope is set to **All opened files**.
- **Include hidden files** - When selected, the *pretty-print* is also performed in the hidden files.
- **Make backup files with extension** - When selected, Oxygen XML Editor plugin makes backup files of the modified files. The default extension is `.bak`, but you can change the extension as you prefer.

Managing Highlighted Content

While working with XML documents you often have frequent changes to the structure and content. You are often faced with a situation where you need to make a slight change in multiple places in the same document. Oxygen XML Editor plugin includes a feature, **Manage Highlighted Content**, that is designed to help you achieve this.

When you are in **Text** mode and you perform a search operation or apply an XPath that highlights multiple results, you can select the **Manage Highlighted Content** action from the contextual menu of any highlight in the document, and the following options are available in its submenu:

- **Modify All** - Use this option to modify (in-place) all the occurrences of the selected content. When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

  Note: If you select a very large number of highlights that you want to modify using this feature, a dialog box informs you that you may experience performance issues. You have the option to either use the **Find/Replace** operation, or continue the operation.
- **Surround All** - Use this option to surround the highlighted content with a specific tag. This option opens the **Tag** dialog box. The **Specify the tag** drop-down menu presents all the available elements that you can choose from.
- **Remove All** - Removes all the highlighted content.

If you right-click content in another part of the document, other than a highlight, you have the option to select the following option:

- **Modify All Matches** - Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment in which the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Quick Assist Support for IDs and IDREFS

The *Quick Assist* support is activated automatically when you place the cursor inside an ID or IDREF in **Text** mode. To access it, click the yellow bulb help marker placed on the current line, in the line number stripe of the editor. You can also invoke the *Quick Assist* menu from the contextual menu or by pressing **Ctrl+1** **(Command+1 on Mac OS X)** on your keyboard.

The following actions are available:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation. For a preview of the changes you are about to make, click **Preview**. This opens the **Preview** dialog box, which presents a list with the files that contain changes and a preview zone of these changes.

Search Declarations

Searches for the declaration of the ID reference. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Change scope

Opens the **Select the scope for the Search and Refactor operations** dialog box.

Rename in File

Renames the ID you are editing and all its occurrences from the current file.

Search Occurrences

Searches for the declaration an references of the ID located at the cursor position in the current document.

Related Information:

Highlight ID Occurrences in Text Mode

To see the occurrences of an ID in an XML document in the **Text** mode, place the cursor inside the ID declaration or reference. The occurrences are marked in the vertical side bar at the right of the editor. Click a marker on the side bar to jump to the occurrence that it corresponds to. The occurrences are also highlighted in the editing area.

Note: Highlighted ID declarations are rendered with a different color than highlighted ID references. To customize these colors or disable this feature, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**.

Related Information:

Contextual Menu Actions in Text Mode

When editing XML documents in **Text** mode, Oxygen XML Editor plugin provides the following actions in the contextual menu (many of them also appear in the submenus of the **Document** menu):

Cut, **Copy,** **Paste**

Executes the typical editing actions on the currently selected content.

Copy XPath

Copies the XPath expression of the current element or attribute from the current editor to the clipboard.

Toggle Comment (Ctrl + Shift + Comma (Command + Shift + Comma on OS X))

Comments the current selection of the current editor. If the selection already contains a comment the action removes the comment from around the selection. If there is no selection in the current editor and the cursor is not positioned inside a comment the current line is commented. If the cursor is positioned inside a comment then the commented text is uncommented.

Go to submenu

This submenu includes the following actions:

Go to Matching Tag (Ctrl + Shift + G)

Moves the cursor to the end tag that matches the start tag, or vice versa.

Go after Next Tag (Ctrl + CloseBracket (Command + CloseBracket on OS X))

Moves the cursor to the end of the next tag.

Go after Previous Tag (Ctrl + OpenBracket (Command + OpenBracket on OS X))

Moves the cursor to the end of the previous tag.

Select submenu

This submenu allows you to select the following:

Element

Selects the entire element at the current cursor position.

Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Attributes

Selects all the attributes of the element at the current cursor position.

Parent

Selects the parent element at the current cursor position.

Source submenu

This submenu includes the following actions:

Shift Right

Shifts the currently selected block to the right.

Shift Left

Shifts the currently selected block to the left.

Indent selection (Ctrl + I (Command + I on OS X))

Corrects the indentation of the selected block of lines if it does not follow the current indenting preferences.

Escape Selection

Escapes a range of characters by replacing them with the corresponding character entities.

Unescape Selection

Replaces the character entities with the corresponding characters.

Format and Indent Element (Ctrl + Shift + I (Command + Shift + I on OS X))

Pretty-prints the element that surrounds the current cursor position.

Convert Hexadecimal Sequence to Character (Ctrl + Shift + H (Command + Shift + H on OS X))

Converts a sequence of hexadecimal characters to the corresponding Unicode character. The action can be invoked if there is a selection containing a valid hexadecimal sequence or if the cursor is placed at the right side of a valid hexadecimal sequence. A valid hexadecimal sequence can be composed of 2 to 4 hexadecimal characters and may or may not be preceded by the `0x` or `0X` prefix. Examples of valid sequences and the characters they will be converted to:

- `0x0045` will be converted to E
- `0X0125` to ĥ
- `265` to #
- `2190` to #

Base64 Encode/Decode submenu

This submenu include the following actions for encoding or decoding **base64** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Base32 Encode/Decode submenu

This submenu include the following actions for encoding or decoding **base32** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Hex Encode/Decode submenu

This submenu include the following actions for encoding or decoding **hex** schemes:

Import File to Encode and Insert

Encodes a file and then inserts the encoded content into the current document at the cursor position.

Decode Selection and Export to File

Decodes a selection of text from the current document and then exports (saves) the result to another file.

Encode Selection

Replaces a selection of text with the result of encoding that selection.

Decode Selection

Replaces a selection of text with the result of decoding that selection.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Join and Normalize Lines

For the current selection, this action joins the lines by replacing the *line separator* with a single space character. It also normalizes the whitespaces by replacing a sequence of such characters with a single space.

Insert XInclude

Displays a dialog box that allows you to browse and select the content to be included and automatically generates the corresponding XInclude instruction.

Note: In the **Author** mode, this dialog box presents a preview of the inserted document as an author page in the **Preview** tab and as a text page in the **Source** tab. In the **Text** mode, the **Source** tab is presented.

Import entities list

Displays a dialog box that allows you to select a list of files as sources for external DTD entities. The internal subset of the DOCTYPE declaration of your document will be updated with the chosen entities. For instance, choosing the files `chapter1.xml` and `chapter2.xml` inserts the following section in the DOCTYPE:

```
<!ENTITY chapter1 SYSTEM "chapter1.xml">
<!ENTITY chapter2 SYSTEM "chapter2.xml">
```

Canonicalize

Opens the **Canonicalize** dialog box that allows you to select a *canonicalization* algorithm to standardize the format of the document.

Sign

Opens the **Sign** dialog box that allows you to configure a digital signature for the document.

Verify Signature

Allows you to specify the location of a file to verify its digital signature.

Manage Highlighted Content submenu

This submenu is available from the contextual menu when it is invoked from a highlight after you perform a search operation or apply an XPath expression that highlights more than one result. The following options are available in this submenu:

Modify All

Allows you to modify (in-place) all the occurrences of the selected content. A thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Surround All

Surround the highlighted content with a specific tag. This option opens the **Tag** dialog box. The **Specify the tag** drop-down menu presents all the available elements that you can choose from.

Remove All

Removes all the highlighted content.

Modify All Matches

Use this option to modify (in-place) all the occurrences of the selected content (or the contiguous fragment where the cursor is located). When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Go to Definition (Ctrl + Shift + Enter)

Moves the cursor to the definition of the current element or attribute in the schema (DTD, XML Schema, Relax NG schema) associated with the edited XML document. If the current attribute is a “type” belonging to the “http://www.w3.org/2001/XMLSchema-instance” namespace, the cursor is moved in the XML schema to the definition of the type referenced in the value of the attribute.

Refactoring submenu

This submenu includes the following actions:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Rename Prefix (Alt + Shift + P (Command + Shift + P on OS X))

The prefix of the element from the cursor position, and any elements with the same prefix, can be renamed according with the options from the **Rename** dialog box.

- If you select the **Rename current element prefix** option, the application will recursively traverse the current element and all its children. *For example*, to change the `xmlns:p1="ns1"` association in the current element to `xmlns:p5="ns1"`, if the `xmlns:p1="ns1"` association is applied on the parent element, then Oxygen XML Editor plugin will introduce `xmlns:p5="ns1"` as a new declaration in the current element and will change the prefix from `p1` to `p5`. If `p5` is already associated with another namespace in the current element, then the conflict will be displayed in a dialog box. By pressing **OK**, the prefix is modified from `p1` to `p5` without inserting a new declaration.
- If you select the **Rename current prefix in all document** option, the application will apply the change on the entire document.
- To also apply the action inside attribute values, select the **Rename also attribute values that start with the same prefix** checkbox.

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag that encloses a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Surround with <![CDATA]]> (Alt + Shift + C (Command + Alt + C on OS X))

Surround the selected content with a CDATA tag so that the parser will interpret it as textual data rather than markup.

Delete element tags (Alt + Shift + Comma)

Deletes the start and end tag of the current element.

Split element

Split the element from the cursor position into two identical elements. The cursor must be inside the element.

Join elements (Alt + Shift + F (Command + Alt + F on OS X))

Joins the left and right elements relative to the current cursor position. The elements must have the same name, attributes, and attributes values.

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Manage IDs submenu

This submenu is available for XML documents that have an associated DTD, XML Schema, or Relax NG schema. It includes the following actions:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation. For a preview of the changes you are about to make, click **Preview**. This opens the **Preview** dialog box, which presents a list with the files that contain changes and a preview zone of these changes.

Rename in File

Renames the ID you are editing and all its occurrences from the current file.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References in

Searches for the references of the ID. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Declarations

Searches for the declaration of the ID reference. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search Declarations in

Searches for the declaration of the ID reference. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Occurrences in file

Searches for the declaration an references of the ID in the current document.

Quick Assist (Ctrl + 1 (Command + 1 on OS X))

Available when the cursor is inside an ID or IDREF, this action opens the *Quick Assist* window that allows you to select some search and refactoring actions for the selected ID or IDREF.

Open File at Cursor

Opens the file at the cursor position in a new panel. If the file path represents a directory path, it will be opened in system file browser. If the file at the specified location does not exist, an error dialog box is displayed and it includes a **Create new file** button that starts the **New document** wizard. This allows you to choose the type or the template for the file. If the action succeeds, the file is created with the referenced location and name and is opened in a new editor panel.

Resource Hierarchy

Opens the **Resource Hierarchy/Dependencies** view that allows you to see the resource hierarchy for an XML document.

Resource Dependencies

Opens the **Resource Hierarchy/Dependencies** view that allows you to see the resource dependencies for an XML document.

Editing XML Documents in Grid Mode

The **Grid** mode in Oxygen XML Editor plugin displays the XML document as a structured grid of nested tables where the text content can be modified without directly interacting with the XML markup. This is helpful for non-technical users who want to edit text content without modifying the XML markup. You can easily expand or collapse elements within the table and the document structure can be changed with simple contextual menu actions, drag/drop, or copy/paste operations. The text content can be modified simply by editing the value of cells that contain the text and a useful *Content Completion Assistant* is also available to help you edit or insert XML elements.

To switch to this mode, select **Grid** at the bottom of the editing area.

For more information about some of the features available in the **Grid** editor, watch our video demonstration:

https://www.youtube.com/embed/PoYm2VqisWk

Editing Actions in Grid Mode

Since **Grid** mode presents XML content in a structured grid of nested tables, editing content in this mode can be done with a combination of the *Content Completion Assistant* and actions that allow you to work with the structure or content of the nested tables much like you would with any table. Oxygen XML Editor plugin provides ways to edit content in the cells of the nested tables or to edit the structure of the tables.

Tip: There are two different types of layouts available in **Grid** mode. Most people prefer to leave it on the default **Grid mode** layout, but there is also a **Tree mode** layout that presents the structure of the document in more of a vertical tree-like manner. You can switch between the two layouts to see which one works best for you particular situation from the **Document** > **Grid Layout** menu.

Expanding/Collapsing Nodes

An arrow sign ( ) displayed at the left of a node indicates that it has child nodes. To display the children, click this arrow sign. To collapse a node, click the reverse arrow sign ( ). The expand/collapse actions can also be invoked with the **NumPad+** and **NumPad-** keys, or from the **Expand/Collapse** submenu of the contextual menu.

To expand all child nodes, right-click the cell that contains the parent node and select **Expand All** from the **Expand/Collapse** submenu. To collapse all node, right-click any cell and select **Collapse All** from the **Expand/Collapse** submenu.

Editing Elements or Attributes

To edit elements or attributes in **Grid** mode, simply double-click the cell that contains the element or attribute (or select the cell and press **(Enter)**) to invoke the *Content Completion Assistant*. This opens a pop-up window that offers a list of proposals that are valid for that particular node.

Editing Text Content in Cells

To edit the text value of a cell, simply select the grid cell and press **Enter** (or double-click the cell), and start editing.

To stop editing a cell value, press **Enter** again.

To cancel the editing without saving the current changes in the document, press the **Esc** key.

Editing the Structure of the Nested Tables

To edit the structure of the nested tables in **Grid** mode, Oxygen XML Editor plugin provides the following actions in the contextual menu (many of them also appear in the submenus of the **Document** menu, or the toolbar):

Cut, **Copy,** **Paste,** **Delete common editing actions**

Executes the typical editing actions on the currently selected elements. The **Cut** and **Copy** operations preserve the styles of the copied content.

Paste as Child

Pastes the copied content as the last child of the current selection.

Duplicate

Creates a new node by duplicating the currently selected one.

Insert Before

Offers a list of valid nodes, depending on the context, and inserts your selection before the currently selected node, as a sibling.

Insert After

Offers a list of valid nodes, depending on the context, and inserts your selection after the currently selected node, as a sibling.

Append Child

Offers a list of valid nodes, depending on the context, and appends your selection as a child of the currently selected node.

Sort Ascending, **Sort Descending**

The sorting result depends on the data type of the column content. It could be a numerical sorting for numbers or an alphabetical sorting for text information. The editor automatically analyzes the content and decides what type of sorting to apply. When a mixed set of values is present in the sorted column, a dialog box is displayed that allows you to choose the desired type of sorting between *numerical* and *alphabetical*.

Insert Row

Inserts a new row below the current selection. To insert a new row, you could also select the row header (the zone to the left of the row that holds the row number) and press **Enter**.

Insert Column

Inserts a column after the current selection.

Clear Content

Removes all content from the current cell.

Expand/Collapse > Expand All

Expands the selection and all its children.

Expand/Collapse > Collapse All

Collapses the selection and all its children.

Expand/Collapse > Expand Children

Expands all the children of the selection but not the selection.

Expand/Collapse > Collapse Children

Collapses all the children of the selection but not the selection.

Expand/Collapse > Collapse Others

Collapses all the siblings of the current selection but not the selection.

Refresh Selected

Forces the layout to be recomputed.

Related Information:

Grid Mode Navigation on page 185
Copy and Paste in the Grid Editing Mode on page 439
Drag and Drop in the Grid Editing Mode on page 438
Content Completion Assistant in Grid Mode on page 441

Drag and Drop in the Grid Editing Mode

You can easily arrange sections in your XML document in the **Grid** mode by using drag and drop actions.

You can do the following with drag and drop:

- Copy or move a set of nodes.

- Change the order of columns in the tables.
- Move the rows from the tables.

These operations are available for both single and multiple selections. To deselect one of the selected fragments, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.

While dragging, the editor paints guide-lines showing the locations where you can drop the nodes. You can also drag nodes outside the **Grid** editor and text from other applications into the **Grid**.

Tip: When using drag and drop to reorganize the document, the resulting layout can be different from what you expected. For instance, the layout can contain a set of sibling tables that can be joined together. To force the layout to be recomputed, you can use the **Refresh Selected** action that is available in the contextual menu and in the **Document** > **Grid Edit** menu.

Copy and Paste in the Grid Editing Mode

Selecting content in the **Grid** mode is similar to working with any table with a little more complexity. Specifically, depending on the type of node, when you select a cell, the selection may automatically include additional cells that are implied by the currently selected node. For example, if you click a node that contains any child nodes, all cells that contain the parent and child nodes will be selected. In this case, the currently selected cell is painted with a color that is different from the rest of the selection.

You can also select discontinuous regions of nodes and place them in the clipboard with the copy action. To deselect one of the selected fragments, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.

Pasting Content Within Grid Mode

You can paste copied nodes relative to the currently selected cell using one of the following actions (available in the contextual menu):

- **Paste (Ctrl + V (Command + V on OS X))** - Pastes copied content, as a sibling, just below (after) the current selection.
- **Paste as Child** - Pastes copied content as the last child of the current selection.

Pasting Content from Grid Mode to Other Editors

Nodes that are copied from the **Grid** editor can also be pasted into **Text** mode or other external applications. When pasting copied content from **Grid** mode, the inserted string represents the nodes serialization. The nodes from tables can be copied using HTML or RTF in table format. The resulting cells contain only the concatenated values of the text nodes.

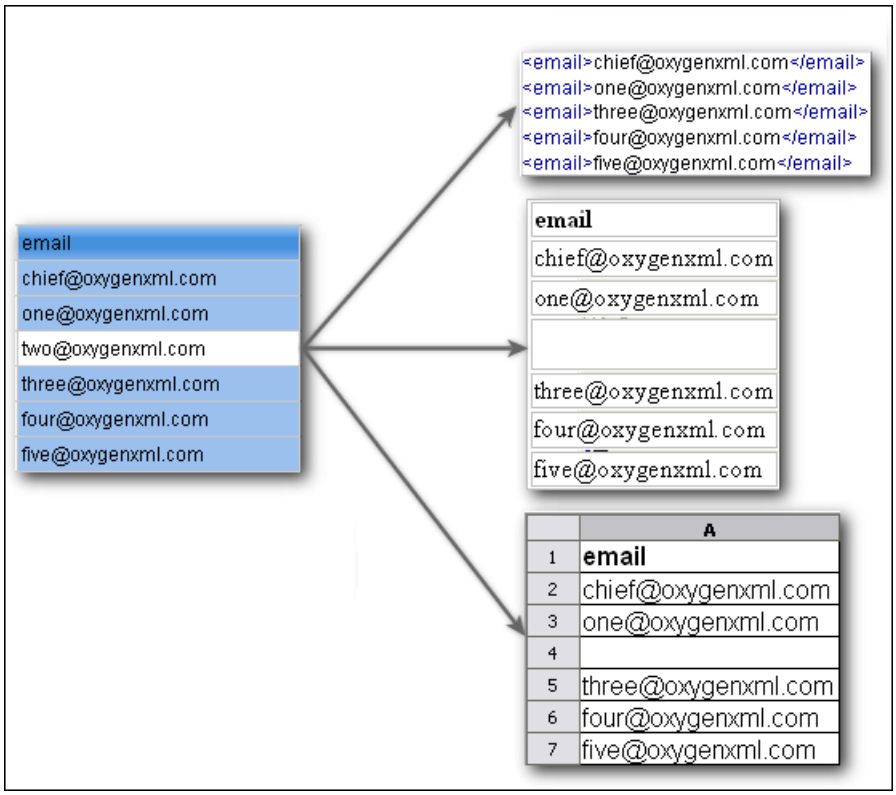


Figure 249: Copying from Grid to Other Editors

Pasting Content from Other Editors into Grid Mode

You can also paste well-formed XML content or tab-separated values from other editors into the **Grid** editor. If you paste XML content, the result will be the insertion of the nodes obtained by parsing this content.

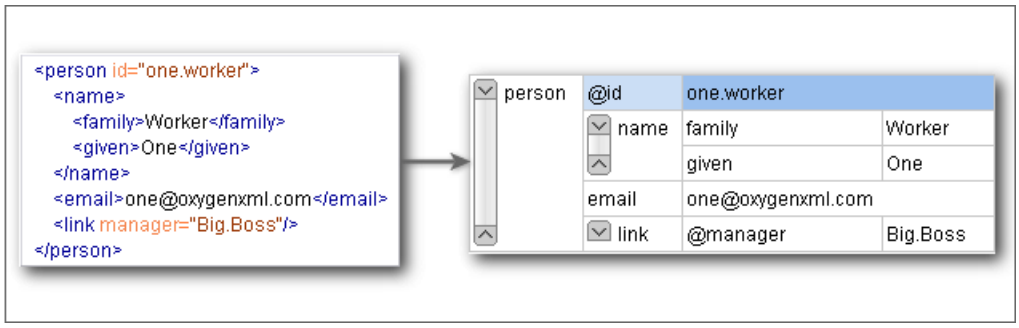


Figure 250: Pasting XML Data into Grid

If the pasted text contains multiple lines of tab-separated values, it can be considered as a matrix of values. By pasting this matrix of values into the **Grid** editor, the result will be a matrix of cells. If the operation is performed inside existing cells, the existing values will be overwritten and new cells will be created when needed.

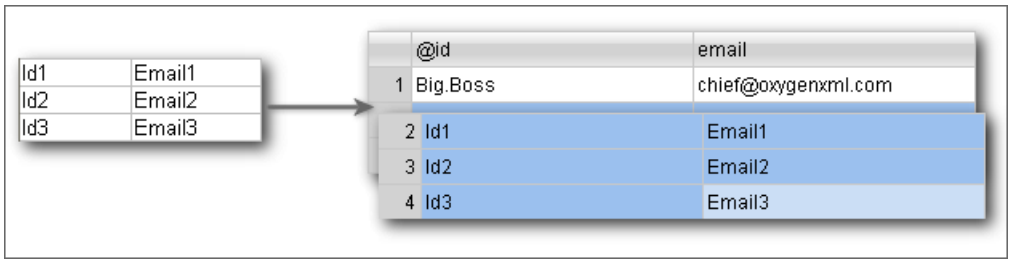


Figure 251: Pasting Tab-Separated Values into Grid

If you need to add copied content to your existing content (rather than overwriting existing cells), you need to first insert new cells by using the **Insert row** or **Insert column** actions from the contextual menu. This is useful, for example, when trying to transfer data from spreadsheet-like editors to the **Grid** editor.

Content Completion Assistant in Grid Mode

If the edited document is associated with a schema (DTD, XML Schema, Relax NG, etc.), the **Grid** editing mode offers a *Content Completion Assistant* for the names and values of elements and attributes. If you choose to insert an element that has required content, the sub-tree of needed elements and attributes are also automatically included.

To display the content completion pop-up menu, simply double-click a cell that contains an element or attribute (or press **Enter** on your keyboard).

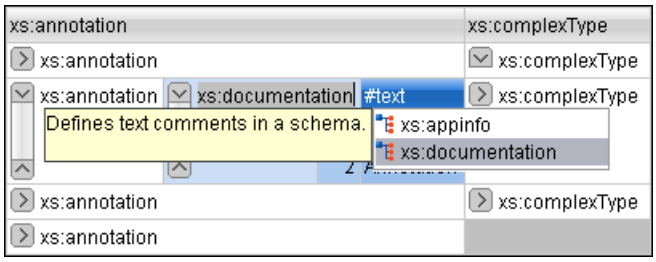


Figure 252: Content Completion in Grid Editing Mode

Exporting XML Content to Excel

For use-cases where you have XML content that needs to be exported to Excel (or any other spreadsheet application) but the content is not already in some sort of table format, **Grid** mode offers you a way to display the content of an XML document as a structured grid of nested tables and you can work with the cells in those tables much like you would with any spreadsheet application. This makes it possible to export content to Excel by copying cells that contain the specific content and then pasting the copied cells in Excel the same as you would when working with any table or spreadsheet.

To export XML content from **Grid** mode to Excel or other spreadsheet applications, follow this procedure:

1. Open the XML document in Oxygen XML Editor plugin and switch to **Grid** mode.
2. Expand the nodes to gain access to the particular nested table that contains the content you want to export.
3. Copy the cells that contain the content you want to export (**Copy** from the contextual menu or **Ctrl+C**).
4. Switch to your spreadsheet application and paste the copied cells.
5. You may need to make some manual adjustments depending on the complexity of the structure in the original XML document.

Note that Oxygen XML Editor plugin also supports the reverse scenario (copying cells from a spreadsheet application and pasting them in **Grid** mode). For more information, see Import from MS Excel Files – Grid Mode Method.

For more information about exchanging data between Oxygen XML Editor plugin and spreadsheet applications, watch our video demonstration:

https://www.youtube.com/embed/8VwsF58zLkU

Related Information:

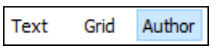
Import from MS Excel Files - Grid Mode Method on page 1197
Pasting Content from Other Editors into Grid Mode on page 440

Editing XML Documents in Author Mode

The **Author** editing mode in Oxygen XML Editor plugin allows you to visually edit XML documents in a user-friendly interface that is similar to a WYSIWYG word processor. This makes structured authoring easier for people who are not familiar with XML and it also provides easier access to the XML structure for XML experts. Oxygen XML Editor plugin provides support for visually editing the most commonly used XML vocabularies in **Author** mode, including DITA, DocBook, TEI, and XHTML.

Adding text content in **Author** mode is as simple as doing so in a standard text editor but the content is rendered similar to how you will see it in the output. Tables, images, and media objects (such as videos) are also rendered comparable to the output. You can even play audio and video objects directly in **Author** mode and it includes an intuitive Image Map Editor. You can easily change the rendering by selecting one of the preset *main styles* from the **Styles** drop-down menu (available on the toolbar) and combine multiple *alternate styles* that behave like layers. You can also use the options in the **Tags Display Mode** drop-down menu to control how much XML markup is displayed in **Author** mode and there are various features and views that provide information about the XML structure based upon your current location within the document.

Author mode provides numerous helpful editing actions, many of which are specific to the type of document you are editing and it includes a variety of other powerful editing features, such as keyboard shortcuts, drag and drop support, a *Smart Paste* mechanism, and an intelligent *Content Completion Assistant*. **Author** mode also allows you to visualize and manage profiled content, you can collaborate with others with various review features (such as the ability to add comments, track changes, or highlight content), and includes many other unique features.

To switch to this mode, click the **Author** button at the bottom of the editing area. 

For more information about some of the features available in the visual **Author** editing mode, watch our video demonstration:

https://www.youtube.com/embed/bnQwJZD58wY

Author Mode User Roles

There are two main types of users for the **Author** mode: *framework developers* and *content authors*.

Framework Developers

A *framework developer* is a technical person with advanced XML knowledge who defines the *framework* for authoring XML documents in the visual editor. Once the *framework* is created or edited by the developer, it is distributed as a deliverable component ready to plug into the application for the content authors.

The *framework* (document type) configuration defines a type of XML document by specifying all the details needed for editing the content of XML documents in **Author** mode.

The *framework* details that are created and customized by the developer include:

- The CSS stylesheet that drives the visual rendering of the document.
- The rules for associating an XML schema with the document, which is needed for the content completion assistance and validation of the document.
- Transformation scenarios for the document.
- Configuration of *XML Catalogs*.
- Custom actions available as buttons on the toolbar or in menus.

Oxygen XML Editor plugin includes some ready-to-use predefined document types for XML *frameworks*, such as DocBook, DITA, TEI, JATS, and XHTML.

Content Authors

A *content author* does not need to have advanced knowledge about XML markup, operations such as validation of XML documents, or applying XPath expressions to an XML document. The content author just uses the *framework* set up by the developer in the application and starts editing the content of XML documents without editing the XML tags directly.

Styling XML Documents in Author Mode

The structure of an XML document and the required restrictions on its elements and their attributes are defined with an XML schema. This makes it easier to edit XML documents in a visual editor. For more information about schema association, see Associating a Schema to XML Documents on page 579. The **Author** mode renders the content of the XML documents visually, based on a CSS stylesheet associated with the document.

Associating a Stylesheet with an XML Document

The rendering of an XML document in the **Author** mode is driven by a CSS stylesheet that conforms to the version 2.1 of the CSS specification from the W3C consortium. Some CSS 3 features, such as namespaces and custom extensions, of the CSS specification are also supported.

There are several methods for associating a stylesheet (CSS) with an XML document:

1. Insert the `xml-stylesheet` processing instruction with the `type` attribute at the beginning of the XML document. If you do not want to alter your XML documents, you should create a new document type (*framework*).

   CSS example:

   ```
   <?xml-stylesheet type="text/css" href="test.css"?>
   ```

   Note: XHTML documents need a `link` element, with the `href` and `type` attributes in the `head` child element, as specified in the W3C CSS specification. XHTML example:

   ```
   <link href="/style/screen.css" rel="stylesheet" type="text/css"/>
   ```

   Tip: You can also insert the `xml-stylesheet` processing instruction by using the **Associate XSLT/CSS Stylesheet** action that is available on the toolbar or in the **XML** menu.
2. Add a new CSS file to a *framework* (document type). To do so, open the **Preferences** dialog box and go to **Document Type Association**. Edit the appropriate *framework*, open the **Author** tab, then the **CSS** subtab. Press the **New** button to add a new CSS file.

   Note: The predefined *frameworks* are read-only, so you need to **Extend** or **Duplicate** them to configure them as custom *frameworks*.

You can read more about associating a CSS to a document type in Customizing the Main CSS of a Framework on page 1297.

If a document has no CSS association or the referenced stylesheet files cannot be loaded, a default one is used. A warning message is also displayed at the beginning of the document, presenting the reason why the CSS cannot be loaded.

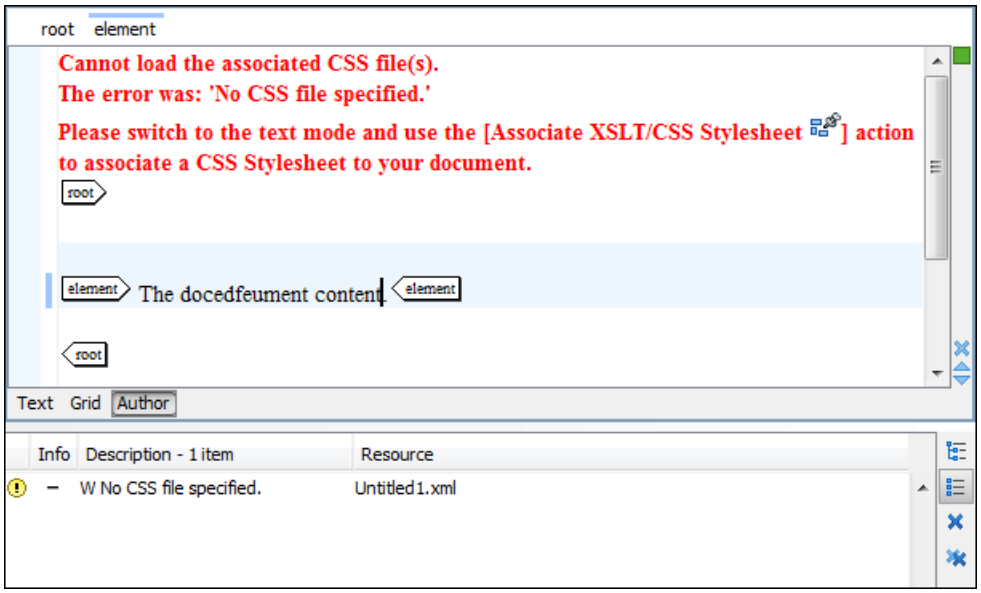


Figure 253: Document with no CSS association default rendering

Selecting and Combining Multiple CSS Styles

Oxygen XML Editor plugin provides a **Styles** drop-down menu on the toolbar that allows you to select one *main (non-alternate) CSS style* and multiple *alternate CSS styles*. This makes it easy to change the look of the document as it appears in **Author** mode and the output without having to continually edit the CSS stylesheets.

Tip: For information about configuring the **Styles** drop-down menu, see Configuring and Managing Multiple CSS Styles on page 1315.

You can select a *main CSS style* that applies to the whole document and then *alternate styles* that are applied as layers to specific parts of the document. For example, in the subsequent figure, a DITA document has the **Century** style selected for the *main CSS* and the *alternate styles* **Full width**, **Show table column specification**, **Hints**, and **Inline actions** are combined for additive styling to specific parts of the document.

The selections from the **Styles** drop-down menu are persistent, meaning that Oxygen XML Editor plugin will remember the selections when subsequent documents are opened.

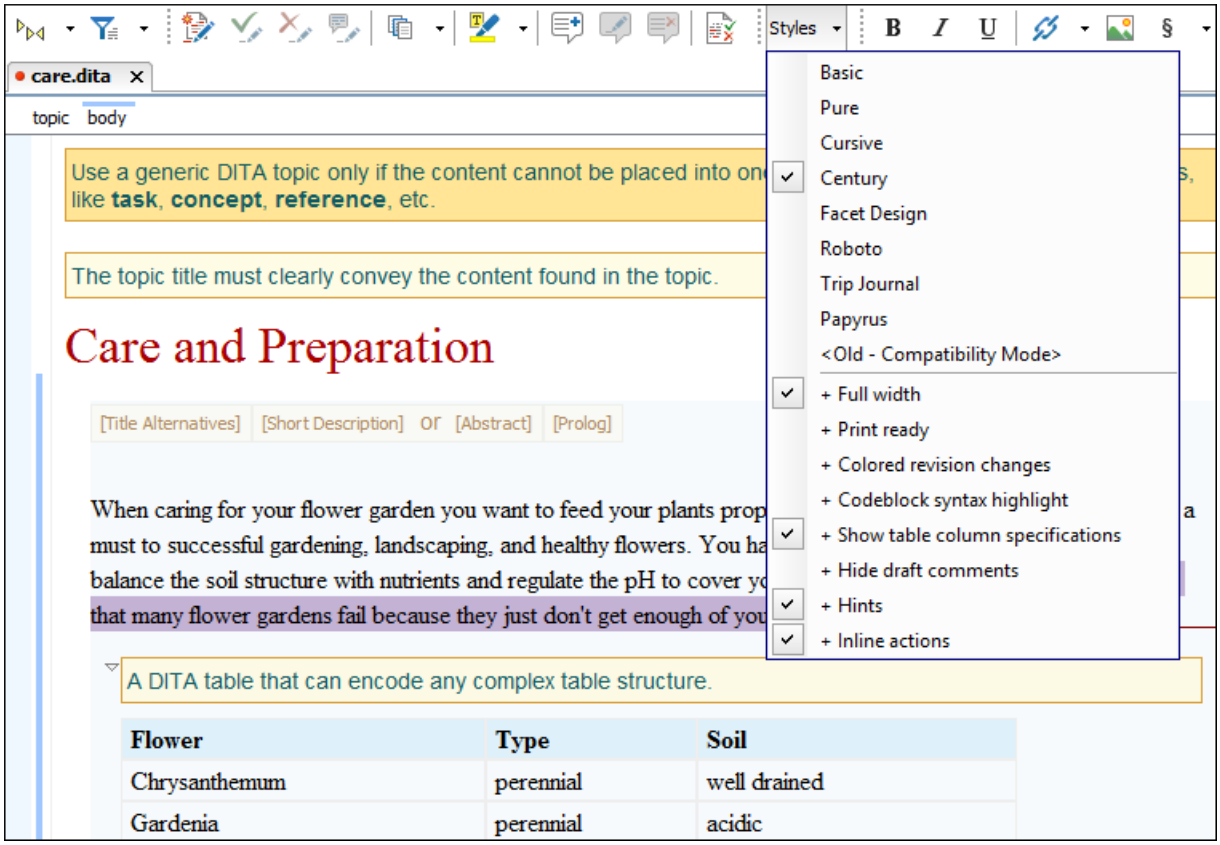


Figure 254: Styles Drop-down Menu in a DITA Document

Related Information:

Associating a Schema to XML Documents on page 579
Configuring and Managing Multiple CSS Styles on page 1315

Navigating the Document Content in Author Mode

Oxygen XML Editor plugin includes some useful features to help you navigate XML documents.

Using the Keyboard

Oxygen XML Editor plugin allows you to quickly navigate through a document using the **Tab** key to move the cursor to the next XML node and **Shift + Tab** to go to the previous one. If you encounter a *space-preserved element* when you navigate through a document and you do not press another key, pressing the **Tab** key will continue the navigation. However, if the cursor is positioned in a *space-preserved element* and you press another key or you position the cursor inside such an element using the mouse, the **Tab** key can be used to arrange the text.

To navigate one word forward or backwards, use **Ctrl + RightArrow (Command + RightArrow on OS X)**, and **Ctrl + LeftArrow (Command + LeftArrow on OS X)**, respectively. Entities and hidden elements are skipped. To position the cursor at the beginning or at the end of the document you can use **Ctrl + Home (Command + Home on OS X)**, and **Ctrl + End (Command + End on OS X)**, respectively.

Navigation Shortcuts

Oxygen XML Editor plugin includes some keyboard shortcuts to help you quickly navigate to a particular modification. They are also available as actions in the **Navigation** menu.

- **Ctrl+Q - Last Edit Location** - Moves the cursor to the last modification in any opened document.
- **Alt+LeftArrow (Command+OpenBracket on OS X) - Back** - Moves the cursor to the previous position.
- **Alt+RightArrow (Command+CloseBracket on OS X) - Forward** - Moves the cursor to the next position.

Navigating with the Outline View

Oxygen XML Editor plugin includes a very useful **Outline** view that displays a hierarchical tag overview of the currently edited XML Document.

You can use this view to quickly navigate through the current document by selecting nodes in the outline tree. It is synchronized with the editor area, so when you make a selection in the **Outline** view, the corresponding nodes are highlighted in the editor area.

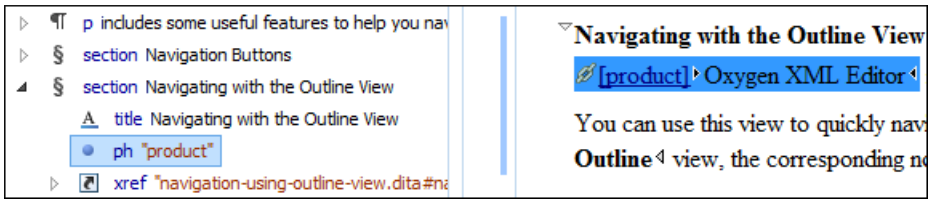


Figure 255: Outline View Navigation in Author Mode

Using the Breadcrumb to Navigate

A *breadcrumb* on the top stripe indicates the path from document root to the current element. It can also be used as a helpful tool to navigate to specific elements throughout the structure of the document.

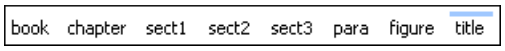


Figure 256: Breadcrumb in Author Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. The last element is also highlighted by a thin light blue bar for easier identification. Clicking an element from the *breadcrumb* selects the entire element and navigates to it in the editor area.

Using the Linking Support

When working on multiple documents that reference each other (references, external entities, XInclude, DITA conref, etc), the **linking support** is useful for navigating between the documents. In the predefined customizations that are bundled with Oxygen XML Editor plugin, links are marked with an icon representing a chain link ( ). When hovering over the icon, the mouse pointer changes its shape to indicate that the link can be accessed and a tooltip presents the destination location. Click the link to open the referenced resource in the editor or system browser. The same effect can be obtained by pressing the **F3** key when the cursor is in a link element.

Note: Depending on the referenced file type, the target link will either be opened in the Oxygen XML Editor plugin or in the default system application. If the target file does not exist, Oxygen XML Editor plugin prompts you to create it.

Displaying the Markup

You can control the amount of markup that is displayed in the **Author** mode with various levels of tag modes for both *block* and *in-line* elements.

The following dedicated tag modes are available from the **Tags Display Mode** drop-down menu (available on the toolbar):

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline* elements.

Full Tags

Displays full tag names without attributes for both *block* and *inline* elements.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Opens the **Author** preferences page where you can configure options in regards to *tags*, such as the default **Tags Display Mode**, **Tags Background Color**, **Tags Foreground Color**, **Tags Font**, and whether or not Oxygen XML Editor plugin will use a **Compact Tag Layout** for displaying the tags (this option tries to group consecutive block tags on the same line).

Note: The associated CSS information is used to determine whether a tag should be considered *inline* or *block*. If the current document does not have an associated CSS stylesheet, then the **Full Tags** mode will be used.

Displaying Referenced Content

The references to entities, XInclude, DITA conrefs, and constructs in other vocabularies with displayable referenced content are expanded by default in **Author** mode and the referenced content is displayed. You can control this behavior from the **Author** preferences page. The referenced resources are loaded and displayed inside the element or entity that references them, but the displayed content cannot be modified directly in current document.

When the referenced resource cannot be resolved, an error will be presented inside the element that refers them instead of the content.

If you want to make modifications to the referenced content, you must open the source where the referenced resource resides. The referenced resource can be opened quickly by clicking the link (marked with the icon) that is displayed before the referenced content or by using the **Edit Reference** action from the contextual menu (in this case, the cursor is placed at the precise location where the action was invoked). The referenced resource is resolved through the *XML Catalog* set in the **XML Catalog** preferences page.

The referenced content is refreshed as follows:

- Automatically, when it is modified and saved from Oxygen XML Editor plugin.
- On demand, by using the **Refresh references** action. This is useful when the referenced content is modified outside the Oxygen XML Editor plugin scope.

Related Information:

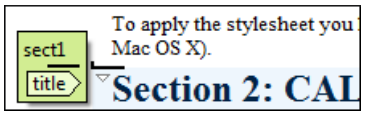
Configuring a References Resolver on page 1286

Visual Hints for the Cursor Position

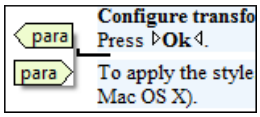
When the cursor is positioned inside a new context, a tooltip will be shown for a couple of seconds displaying the position of the cursor relative to the context of the current element.

Here are some of the common situations that can be encountered:

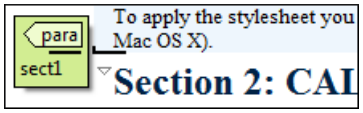
- **Before first *block*** - The cursor is positioned before the first *block* child of the current node.



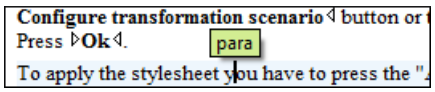
- **Between two *block elements*** - The cursor is positioned between two *block elements*.



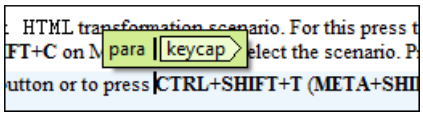
- **After last *block*** - The cursor is positioned after the last *block element* child of the current node.



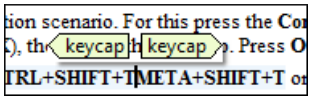
- **Inside a node** - The cursor is positioned inside a node.



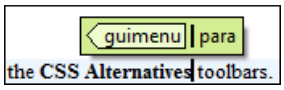
- **Before an *inline element*** - The cursor is positioned inside an element, before a child *inline element*.



- **Between two inline elements** - The cursor is positioned between two *inline elements*.



- **After an inline element** - The cursor is positioned inside an element, after an child *inline element*.



The nodes in these cases are displayed in the tooltip window using the element names.

To deactivate this feature, open the **Preferences** dialog box , go to **Author** > **Cursor Navigation**, and deselect the **Show cursor position tooltip** option. Even if this option is deselected, you can still display the position tooltip by pressing **Shift+F2**.

Note: The position information tooltip is not displayed if **Full Tags with Attributes** or **Full Tags** is selected in the **Tags display mode** drop-down menu.

Location Tooltip

When editing XML documents in a visual environment, you might find it difficult to position the cursor between certain tags that do not have a visual representation. To counterbalance this, Oxygen XML Editor plugin displays a transparent preview of the position information, called the **Location Tooltip**:

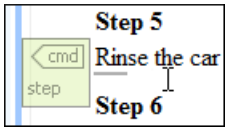


Figure 257: Location Tooltip

Oxygen XML Editor plugin displays a **Location Tooltip** when the following conditions are met:

- You are editing the document in one of the following tags display modes: **Inline Tags**, **Partial Tags**, **No Tags**.
- The mouse pointer is moved between *block elements*.

To activate or deactivate this feature, use the **Show location tooltip on mouse move** option in the **Cursor Navigation** preferences page.

Whitespace Handling in Author Mode

When you edit a document in **Author** mode, Oxygen XML Editor plugin must serialize the resulting document as XML. Oxygen XML Editor plugin serializes the document when you save it or switch to another editing mode. When the document is serialized, Oxygen XML Editor plugin formats and indents the XML document according to the current format and indent settings.

Minimizing Whitespace Differences Between Versions

When serializing a document to XML, **Author** mode will only format and indent those elements of the document that have been edited. Any element that has not been edited will be serialized exactly as it was loaded from disk. This is useful when your content is managed in a version control systems, as it avoids introducing insignificant whitespace differences between version, which in turn makes diff output easier to read.

Entering Whitespace in Author Mode

Oxygen XML Editor plugin controls the entry of whitespace characters in **Author** mode according the XML whitespace rules, which means it will not let you insert insignificant whitespace. This means that it will not let you insert extra line-breaks or spaces inside a typical paragraph element, for instance. (Any such whitespace would be normalized away when the document was serialized to XML, so Oxygen XML Editor plugin is saving you from any surprises when this happens.)

Of course, you will legitimately want to enter additional spaces and returns in some cases, such as code samples. Oxygen XML Editor plugin will allow this in elements that are configured as preserve space elements according to the XML whitespace rules. For all of its predefined document types, Oxygen XML Editor plugin is correctly configured to recognize preserve space elements and to allow you to enter additional spaces in them.

If you are using a predefined document type and you are unable to enter additional whitespace, make sure that you are using an element from that document type that is intended to be a preserve-space element.

If you are using a custom document type, make sure that it is configured correctly so that Oxygen XML Editor plugin recognizes that the current element is a preserve-space element.

Serialization Options for Author Mode

The **Author** preferences page (open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author**) includes a **Serialization** section that contains some options that control how the formatting and indenting is applied when a document is saved in **Author** mode or when switching from **Author** to **Text** mode. It also includes a **Compatibility with other tools** option that controls how line breaks are handled when a document is serialized to help obtain better compatibility with other applications.

Editing Content in Author Mode

The **Author** mode includes a large variety of user-friendly authoring features to help you work with XML content, including numerous toolbar, menu, and shortcut actions and some specialized content editing features.

Undo/Redo Actions

The typical undo and redo actions are available with shortcuts or in the **Edit** menu:

Undo (Ctrl + Z (Command + Z on OS X))

Reverses a maximum of 200 editing actions to return to the preceding state.

Note: Complex operations such as **Replace All** or **Indent selection** count as single undo events.

Redo (Ctrl + Y (Command + Shift + Z on OS X, Ctrl + Shift + Z on Linux/Unix))

Recreates a maximum of 100 editing actions that were undone by the **Undo** function.

Copy and Paste Actions

The typical copying and pasting actions are available with shortcuts or in the contextual menu (or the **Edit** menu):

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Select All (Ctrl + A (Command + A on OS X))

Selects the entire content of the current document.

Entering Text in Elements

By default, you can only enter text in elements that accept text content. If the element is declared as *empty* or *element only* in the associated schema, you are not allowed to insert text in it. Instead, a warning message is displayed.

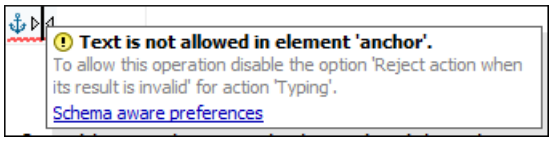


Figure 258: Editing in empty element warning

To allow text to be inserted in these instances, go to the **Schema-Aware** preferences page and deselect the **Reject action when its result is invalid** option in the **Typing** actions section.

Editing Text Content Without Modifying the XML Markup

You can use the options in the **Tags Display Mode** drop-down menu (available on the toolbar) to control how tags are displayed in **Author** mode. This can help you to clearly see where the current cursor position is within the tag structure so that you can avoid making unintended modifications to the XML markup. You can also switch to the **Grid** editing mode to modify text content without affecting the XML tags.

Related Information:

Editing XML Markup in Author Mode on page 449
Drag and Drop in Author Mode on page 457
Smart Paste Mechanism on page 457
Content Completion Assistant in Author Mode on page 459
Contextual Menu Actions in Author Mode on page 552

Editing XML Markup in Author Mode

Oxygen XML Editor plugin includes some useful actions that allow you to easily edit XML markup in **Author** mode. Most of these actions are available in the contextual menu and some of them have simple keyboard shortcuts.

Selecting XML Markup in Author Mode

Selecting XML tags in Oxygen XML Editor plugin is very simple with several methods for selecting entire elements:

- **Breadcrumb** - Click the element (XML tag) on the breadcrumb displayed at the top of the editing window.
- **Outline View** - Click the element name in the **Outline** view.
- **Full Tags Mode** - While editing in **Full Tags** mode, click the start or end tag of the element in the editor.
- **Mouse Selection** - While editing in **Full Tags** mode, click before the start tag of the element, drag the selection, and release the mouse button after the end tag.
- **Shift + Arrow Keys** - While editing in **Full Tags** mode, place the cursor before the start tag of the element, press and hold **Shift**, and use the arrow keys to make the selection (including the end tag).

Note: If the selection does not include the entire element (for example you do not include the end tag of the element), Oxygen XML Editor plugin will automatically close the appropriate tags when pasting the copied selection. This ensures that the pasted content will always result in well-formed XML.

Using the Breadcrumb in Author Mode

A *breadcrumb* on the top stripe indicates the path from document root to the current element. It can also be used as a helpful tool to insert and edit specific elements in the document structure.

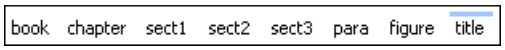


Figure 259: Breadcrumb in Author Mode

The last element listed in the *breadcrumb* is the element at the current cursor position. The last element is also highlighted by a thin light blue bar for easier identification. Clicking an element from the *breadcrumb* selects the entire element in the editor area and each element provides a contextual menu with access to the following actions:

Edit Attributes
: Opens the in-place attributes editor that allows you to easily edit the attributes of an element.

Edit Profiling Attributes
: Allows you to select the profiling attributes that apply to a certain element.

Append child
: Opens a content completion list that allows you to select an element to be inserted as a child of the selected element.

Insert before
: Opens a content completion list that allows you to select an element to be inserted (as a sibling) before the selected element.

Insert after
: Opens a content completion list that allows you to select an element to be inserted (as a sibling) after the selected element.

Cut
: Removes the selected element and copies it to the clipboard, while preserving the styles of the content.

Copy
: Copies the selected element to the clipboard, while preserving the styles of the copied content.

Paste
: Pastes a well-formed element from the clipboard at currently selected position in the breadcrumb.

Paste before
: Insert a well-formed element (from the clipboard) before the currently selected element.

Paste after
: Insert a well-formed element (from the clipboard) after the currently selected element.

Paste as XML
: Inserts clipboard content that is considered to be well-formed XML content, preserving its XML structure.

Delete
: Deletes the currently selected element.

Toggle Comment
: Encloses the currently selected element in an XML comment, if the element is not commented, or removes the comment if it is commented.

Rename Element
: Opens the **Rename** dialog box that allows you to rename the currently selected element and other elements with the same name.

Tip: The tag names displayed in the *breadcrumb* can be customized with an **Author** mode extension class that implements the *AuthorBreadCrumbCustomizer* API. See the Oxygen SDK for more details.

Move Nodes

You can move XML nodes in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Move Up (Alt + UpArrow)

Moves the current node or selected nodes in front of the previous node.

Move Down (Alt + DownArrow)

Moves the current node or selected nodes after the subsequent node.

Tip: The easiest way to move nodes is to use the **Alt + UpArrow** and **Alt + DownArrow** shortcut keys.

Promote/Demote List Item Nodes

You can easily promote or demote selected list item nodes within ordered lists or unordered lists by using the following keyboard shortcuts:

Promote (Shift + Tab)

Promotes an entirely selected list item node to be a sibling of its parent node (the list item is moved to the left). It also works for selections of multiple list item nodes as long as all the selected nodes are siblings (on the same hierarchical level).

Demote (Tab)

Demotes an entirely selected list item node (the list item is moved to the right). It also works for selections of multiple list item nodes as long as all the selected nodes are siblings (on the same hierarchical level).

Join or Split Elements

You can join or split elements in the current document by using the following actions in the **Refactoring** submenu of the contextual menu:

Join Elements

Joins two adjacent *block elements* that have the same name. The action is available only when the cursor position is between the two adjacent *block elements*. Also, joining two *block elements* can be done by pressing the **Delete** or **Backspace** keys and the cursor is positioned between the boundaries of these two elements.

Tip: Specifically, the **Delete** or **Backspace** keys can be used to join *block elements* in the following situations:

- The cursor is located before the end position of the first element and **(Delete)** key is pressed.
- The cursor is located after the end position of the first element and **(Backspace)** key is pressed.
- The cursor is located before the start position of the second element and **(Delete)** key is pressed.
- The cursor is located after the start position of the second element and **(Backspace)** key is pressed.

If the element has no sibling or the sibling element has a different name, an **Unwrap** operation will be performed.

Split Element

Splits the content of the closest element that contains the position of the cursor. Thus, if the cursor is positioned at the beginning or at the end of the element, the newly created sibling will be empty.

Rename Elements

You can rename elements by using the following action in the **Refactoring** submenu of the contextual menu:

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Surround Content with Tags (Wrap)

You can surround a selection of content with tags (*wrap* the content) by using the following action in the **Refactoring** submenu of the contextual menu:

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag to enclose a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Unwrap the Content of Elements

You can unwrap the content of an element by using the following action in the **Refactoring** submenu of the contextual menu:

Delete Element Tags

Deletes the tags of the closest element that contains the position of the cursor. This operation is also executed if the start or end tags of an element are deleted by pressing the **Delete** or **Backspace** keys.

Tip: Specifically, the **Delete** or **Backspace** keys can be used to unwrap the content of an element in the following situations:

- The cursor is located before the start position of the element and **(Delete)** key is pressed.
- The cursor is located after the start position of the element and **(Backspace)** key is pressed.
- The cursor is located before the end position of the element and **(Delete)** key is pressed.
- The cursor is located after the end position of the element and **(Backspace)** key is pressed.

If the element has no sibling or the sibling element has a different name, an **Unwrap** operation will be performed.

Remove Markup from Blocks of Content

You can remove the markup from the current element by highlighting the appropriate block of content and using the following action in the **Refactoring** submenu of the contextual menu:

Remove All Markup

Removes all the XML markup inside the selected block of content and keeps only the text content.

Tip: You can use the **(Delete)** or **(Backspace)** keys to remove markup, in which case the elements in the selected block will be unwrapped or joined with their sibling, or if the current element is empty, the element tags will be deleted.

Remove Text from Selected Markup

You can remove the text from elements by highlighting the appropriate block of content and using the following action in the **Refactoring** submenu of the contextual menu:

Remove Text

Removes the text content of the selected block of content and keeps the markup in tact with empty elements.

Other Refactoring Actions

You can also manage the structure of the markup by using the other specific XML refactoring actions that are available in the **Refactoring** submenu of the contextual menu:

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Related Information:

Editing Content in Author Mode on page 448
Displaying the Markup on page 211
Refactoring XML Documents on page 596
Selecting Content in Author Mode on page 458
Content Completion Assistant in Author Mode on page 459
Contextual Menu Actions in Author Mode on page 552

Editing Attributes in Author Mode

You can easily edit attributes in **Author** mode by using the **Attributes View** and Oxygen XML Editor plugin also allows you to edit attribute and element values in-place, directly in the **Author** mode, using an in-place attribute editor.

In-place Attributes Editor

Oxygen XML Editor plugin includes an in-place attributes editor in **Author** mode. To edit the attributes of an XML element in-place, do one of the following:

- Select an element or place the cursor inside it and then press the **Alt + Enter** keyboard shortcut.
- Double-click any named start tag when the document is edited in one of the following display modes.: **Full Tags with Attributes**, **Full Tags**, **Block Tags**, or **Inline Tags**.

This opens an in-place attributes editor that contains the same content as the **Attributes** view. By default, this editor presents the **Name** and **Value** fields, with the list of all the possible attributes collapsed.

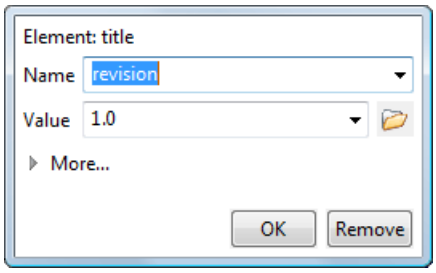


Figure 260: In-place Attributes Editor

Name Combo Box

Use this combo box to select an attribute. The drop-down list displays the list of possible attributes allowed by the schema of the document, as in the **Attributes** view.

Value Combo Box

Use this combo box to add, edit, or select the value of an attribute. If the selected attribute has predefined values in the schema, the drop-down list displays those possible values. You can use the **Browse** button to select a URL for the value of an attribute. You can also press **Ctrl + Space** to open a content completion window that offers a list of possible choices and allows you to select multiple values.

If you click **More** while in the collapsed version, it is expanded to the full version of the in-place attribute editor.

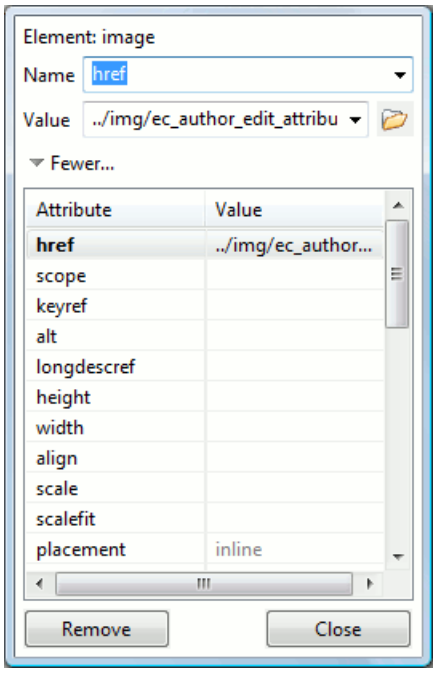


Figure 261: In-place Attributes Editor (Full Version)

The full version includes a table grid, similar to the **Atributes** view, that presents all the attributes for the selected element.

Note: If the cursor is located inside read-only content, the attribute names and values are faded and you cannot add, edit, or remove values.

Related Information:

Attributes View in Author Mode on page 202

Folding XML Elements in Author Mode

When working with a large document, the *folding* support in Oxygen XML Editor plugin can be used to collapse some element content leaving only the parts that you need to edit in focus. Expanding and collapsing works on individual elements. Expanding an element leaves the child elements unchanged.

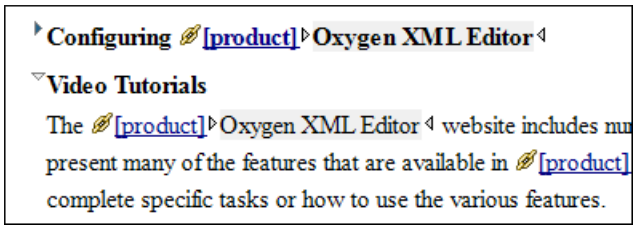


Figure 262: Folding of XML Elements in Author Mode

Folding Actions in Author Mode

Foldable elements are marked with a small triangle (/) on the left side of the editor panel. If you hover over that arrow, the entire content of the element is highlighted by a dotted border for quick identification of the *foldable* area. To toggle the fold, simply click the icon. Also, the following actions are available in the **Folding** sub-menu of the contextual menu:

Toggle Fold (or you can simply click on the / arrow)

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the child elements that are indented one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

For more information about the *folding* support in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/eR9HfN_peAE

Related Information:

Folding Elements: -oxy-foldable on page 1338

Drag and Drop in Author Mode

The Oxygen XML Editor plugin **Author** mode includes support for dragging and dropping content in XML documents.

When editing content in **Author** mode, entire sections or chunks of data can be moved or copied by using the drag and drop feature. The following situations can be encountered:

- When both of the drag and drop sources are from the **Author** mode editor, a well-formed XML fragment is transferred. The section is balanced before dropping it by adding matching tags when needed.
- When the drag source is from the **Author** mode editor but the drop target is a text-based editor, only the text inside the selection is transferred as it is.
- The text dropped from another text editor or another application into the **Author** mode editor is inserted without changes.

Related Information:

Smart Paste Mechanism on page 457

Smart Paste Mechanism

The **Author** editing mode includes a *Smart Paste* feature that preserves certain style and structure information when copying content and pasting it into document types that support the feature. You can copy content from various sources, including web pages, external applications (such as Office-type applications), or other document types within Oxygen XML Editor plugin, and then paste it into DITA, TEI, DocBook, JATS, and XHTML documents. Oxygen XML Editor plugin preserves the original text styling (such as bold, italics, underline) and formatting (such as lists, tables, paragraphs) and considers various pasting solutions to keep the resulting document valid.

The styles and general layout of the pasted content are converted to the equivalent XML markup for the target document type while preserving certain style and structure information. For example, if you copy content that includes multiple paragraphs and then paste it in **Author** mode, the multiple paragraph structure is preserved. If you paste the content in a location where the resulting XML would not be valid, Oxygen XML Editor plugin will attempt to place it in a valid location, and may prompt you with one or more choices for where to place it.

Tip: When pasting text fragments formatted with the *Courier New* font, the *Smart Paste* mechanism will wrap it in an inline code element (for example, in DITA it would be wrapped in a `codeph` element).

Smart Paste Options

By default, the *Smart Paste* feature is enabled in Oxygen XML Editor plugin. There are several options in the **Schema Aware** preferences page that control the *Smart Paste* mechanism:

- **Smart paste and drag and drop** - This option determines whether or not Oxygen XML Editor plugin will try to find an appropriate insert position when the current location is not valid for the pasted content. This option is selected by default.
- **Reject action when its result is invalid** - If you select this option, Oxygen XML Editor plugin will not let you paste content into a position where it would be invalid. This option is deselected by default.

- **Convert external content on paste** - This option determines whether or not Oxygen XML Editor plugin will convert the styling and formatting of copied content from external sources when pasting it into a document type that supports the feature. This option is selected by default.
- **Convert even when pasting inside space-preserve elements** - If you select this option, the *Smart Paste* feature will also work when pasting external content into a *space-preserve* element (such as a `codeblock`). This option is deselected by default.

Smart Paste Supported Document Types

The *Smart Paste* feature is supported for the following document types (*frameworks*):

- DITA
- DocBook 4
- DocBook 5
- TEI
- XHTML
- JATS

For more information about the *Smart Paste* support, watch our video demonstration:

https://www.youtube.com/embed/bpiXZQwzBfA

Related Information:

Customizing Smart Paste Support on page 1271

Selecting Content in Author Mode

Oxygen XML Editor plugin includes a variety of keyboard shortcuts that allow you to easily select content in **Author** mode.

Selection Shortcuts in Author Mode

Ctrl + A (Meta + A on Mac OS X)

Selects all content in the document.

Shift + Left/Right Arrow Keys

Begins a continuous selection at the cursor position and extends it one character at a time in the direction that you press the arrow keys.

Shift + Up/Down Arrow Keys

Begins a continuous selection at the cursor position and extends it one line at a time in the direction that you press the arrow keys.

Ctrl + Shift + Left/Right Arrow Keys (Meta + Shift + Left/Right Arrow Keys on Mac OS X)

Begins a continuous selection at the cursor position and extends it one word at a time in the direction that you press the arrow keys.

Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the current line (on Mac OS X, it extends to the beginning of the document).

Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the current line (on Mac OS X, it extends to the end of the document).

Ctrl + Shift + Home

Begins a continuous selection at the cursor position and extends it to the beginning of the document.

Ctrl + Shift + End

Begins a continuous selection at the cursor position and extends it to the end of the document.

Shift + PageUp

Begins a continuous selection at the cursor position and extends it up one screen page.

Shift + PageDown

Begins a continuous selection at the cursor position and extends it down one screen page.

Double-Click

Selects the word at the cursor position.

Triple-Click

Selects the node at the cursor position.

Right-Click > Select > Element

Selects the entire element at the current cursor position.

Right-Click > Select > Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Right-Click > Select > Parent

Selects the entire parent element at the current cursor position.

Content Completion Assistant in Author Mode

One of the most useful features in **Author** mode is the *Content Completion Assistant*. It offers a list of elements, attributes, attribute values, and other options that are valid in the current editing context.

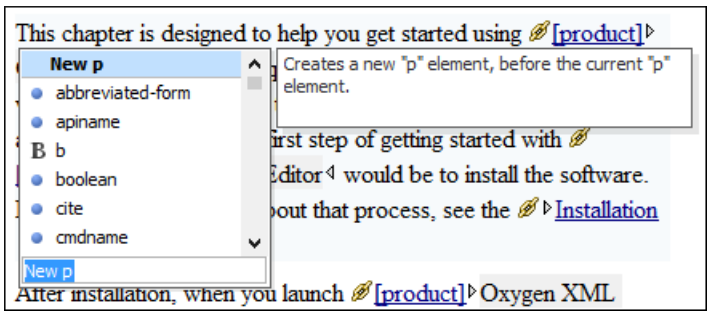


Figure 263: Content Completion Assistant in Author Mode

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

Using the Content Completion Assistant in Author Mode

To activate the feature in **Author** mode, use any of the following shortcut keys:

- **Enter**
- **Ctrl + Space (Command + Space on OS X)**
- **Alt + ForwardSlash (Command + Alt + ForwardSlash on OS X)**

You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. In same cases, the *Content Completion Assistant* displays a documentation window with information about the particular proposal and some of them have links to additional information (for example, DITA elements might have a link to the DITA Style Guide). You can use **Tab** and **Shift + Tab** to navigate to those links and **Space** to trigger them. You can also change the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Author** mode, simply press **Enter**.

Types of Proposals Listed in the Content Completion Assistant

The *Content Completion Assistant* offers the following types of proposed actions depending on the current context:

- Insert allowed elements for the current context schema and the list of proposals contains elements depending on the elements inserted both before and after the cursor position.
- Insert element values if such values are specified in the schema for the current context.

- Insert new undeclared elements by entering their name in the text field.
- Insert CDATA sections, comments, processing instructions.
- Insert code templates.
- If invoked on a selection that only contains an element start or end tag (remember that you can see all element tags while working in **Full Tags** mode), it will allow you to rename the element.
- If invoked on a selection of multiple elements or other content, it will allow you to surround the content with certain tags.
- If invoked on an empty list item that is the last element of the list, it will allow you to convert the list item to a paragraph.
- If the **Show all possible elements in the content completion list** option from the **Schema-Aware** preferences page is selected, the content completion pop-up window will present all the elements defined by the schema. When choosing an element from this section, the insertion will be performed using the schema-aware smart editing features.

  Note: By default, you are not allowed to insert element names that are not defined by the schema. This can be changed by deselecting the **Allow only insertion of valid elements and attributes** check box from the **Schema-Aware** preferences page.

Examples of How the Content Completion Assistant Works

To illustrate how the feature works, consider the following examples of invoking the *Content Completion Assistant* in certain contexts:

- If the cursor is positioned at the beginning or at the end of the element, the first item offered in the *Content Completion Assistant* is a **New <Element>** item. Selecting this item will insert an empty element.

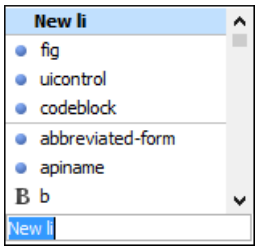


Figure 264: Example (New [Element Name])

- If the cursor is positioned somewhere inside the element, the first entry in the *Content Completion Assistant* is a **Split <Element>** item. In most cases, you can only split the closest *block element* to the cursor position, but if it is inside a list item, the list item will also be proposed for split. Selecting **Split <Element>** splits the content of the specified element around the cursor position.

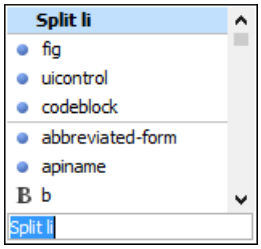


Figure 265: Example (Split [Element Name])

- If the cursor is positioned inside a *space-preserved element* (for example, a *codeblock*), the first choice in the *Content Completion Assistant* is **Enter**, which will insert a new line in the content of the element, followed by **New <Element>**.

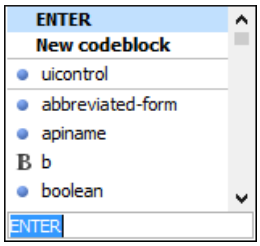


Figure 266: Example ('ENTER' New Line)

- If invoked on a selection that only contains an element start or end tag (remember that you can see all element tags while working in **Full Tags** mode), it will allow you to rename the element.

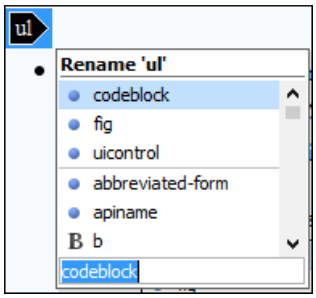


Figure 267: Example (Rename)

- If invoked on a selection of multiple elements or other content, it will allow you to surround the content with certain tags.

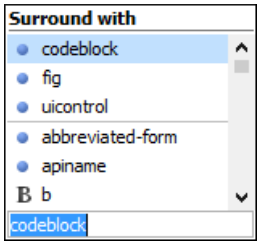


Figure 268: Example (Surround)

Related Information:

Customizing the Content Completion Assistant on page 1300

Set the Schema to be Used for Content Completion

The proposals that are presented in the *Content Completion Assistant* depend on the associated schemas. The DTD, XML Schema, Relax NG, or NVDL schema used to populate the *Content Completion Assistant* is specified in the following methods, in the order of their precedence:

- The schema specified explicitly in the document. In this case, Oxygen XML Editor plugin reads the beginning of the document and resolves the location of the DTD, XML Schema, Relax NG schema, or NVDL schema.
- The default schema declared in the **Schema** tab of the **Document Type** configuration dialog box for the particular document type.

Schema Annotations in Author Mode

A *schema annotation* is a documentation snippet associated with the definition of an element or attribute in a schema. If such a schema is associated with an XML document, the annotations are displayed in the *Content Completion Assistant*.

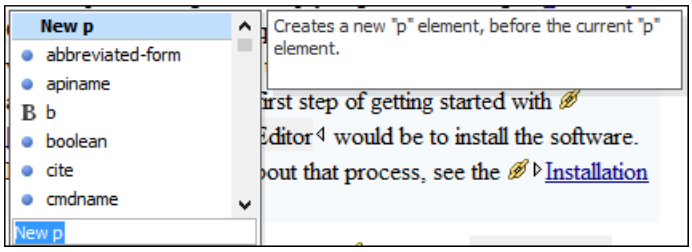


Figure 269: Schema Annotation in the Content Completion Assistant

The schema annotations support is available if the schema type is one of the following:

- XML Schema
- Relax NG
- NVDL schema
- DTD

This feature is enabled by default, but you can disable it by deselecting the **Show annotations in Content Completion Assistant** option in the **Annotations** preferences page.

Styling Annotations with HTML

You can use HTML format in the annotations you add in an XML Schema or Relax NG schema. This improves the visual appearance and readability of the documentation window displayed when editing XML documents validated against such a schema. An annotation is recognized and displayed as HTML if it contains at least one HTML element (such as `div`, `body`, `p`, `br`, `table`, `ul`, or `ol`).

The HTML rendering is controlled by the **Show annotations using HTML format, if possible** option in the **Annotations** preferences page. When this options is deselected, the annotations are converted and displayed as plain text and if the annotation contains one or more HTML tags (`p`, `br`, `ul`, `li`), they are rendered as an HTML document loaded in a web browser. For example, `p` begins a new paragraph, `br` breaks the current line, `ul` encloses a list of items, and `li` encloses an item of the list.

Collecting Annotations from XML Schemas

In an XML Schema, the annotations are specified in an `<xs:annotation>` element like this:

```
<xs:annotation>
  <xs:documentation>
            Description of the element.
  </xs:documentation>
</xs:annotation>
```

If an element or attribute does not have a specific annotation, then Oxygen XML Editor plugin looks for an annotation in the type definition of that element or attribute.

Collecting Annotations from Relax NG Schemas

For Relax NG schema, element and attribute annotations are made using the `<documentation>` element from the `http://relaxng.org/ns/compatibility/annotations/1.0` namespace like this:

```
<define name="person" >
  <element name="person">
    <a:documentation xmlns:a="http://relaxng.org/ns/compatibility/annotations/1.0">
            Information about a person. </a:documentation>
      <ref name="name"/>
        <zeroOrMore>
      <ref name="email"/>
        </zeroOrMore>
  </element>
</define>
```

However, any element outside the Relax NG namespace (`http://relaxng.org/ns/structure/1.0`) is handled as annotation and the text content is displayed in the annotation window. To activate this behavior, select the **Use all Relax NG annotations as documentation** option in the **Annotations** preferences page.

Collecting Annotations from Relax NG Compact Syntax Schemas

For Relax NG Compact Syntax schema, annotations are made using comments like this:

```
##  Information about a person.
element person { name, email*}
```

Collecting Annotation from DTDs

For DTD, Oxygen XML Editor plugin defines a custom mechanism for annotations using comments enabled by the **Prefer DTD comments that start with "doc:" as annotations** option in the **Annotations** preferences page. The following is an example of a DTD annotation:

```
<!--doc:Description of the element. -->
```

Related Information:

Customizing the Rendering of Elements on page 1307
Annotations for XML Elements and Attributes in Content Completion Assistant on page 1309

Content Completion Helper Views

Information about the current element being edited is also available in various *dockable* views, such as the **Model** view, **Attributes** view, **Elements** view, and **Entities** view. By default, they are located on the right-hand side of the main editor window. These views, along with the powerful **Outline** view, provide spatial and insight information about the edited document and the current element. If any particular view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Model View

The **Model** view presents the structure of the currently selected tag, and its documentation, defined as annotation in the schema of the current document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

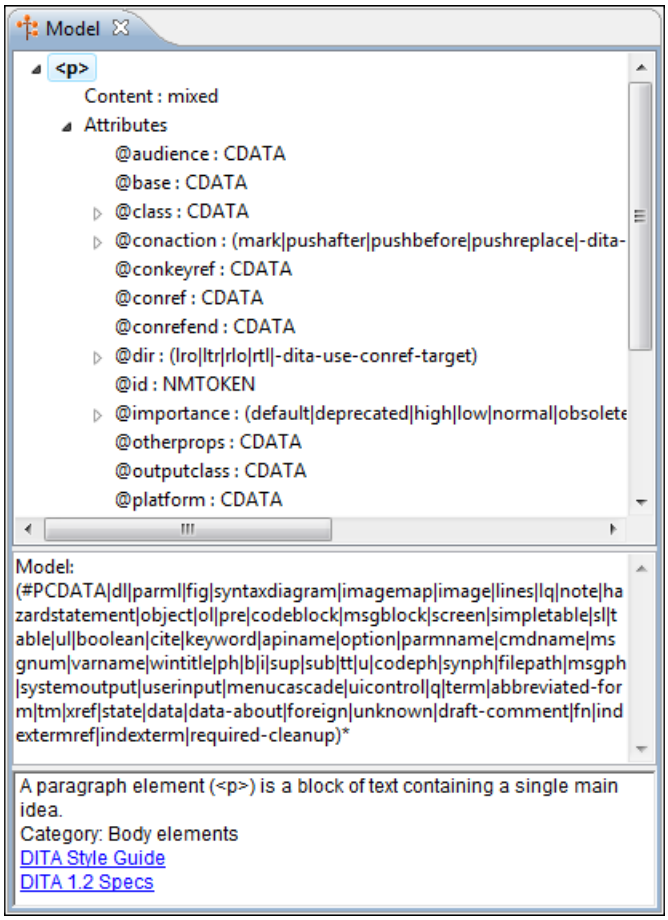


Figure 270: Model View

The **Model** view is comprised of two sections, an element structure panel and an annotations panel.

Element Structure Panel

The element structure panel displays the structure of the currently edited or selected tag in a tree-like format. The information includes the name, model, and attributes of the current tag. The allowed attributes are shown along with imposed restrictions, if any.

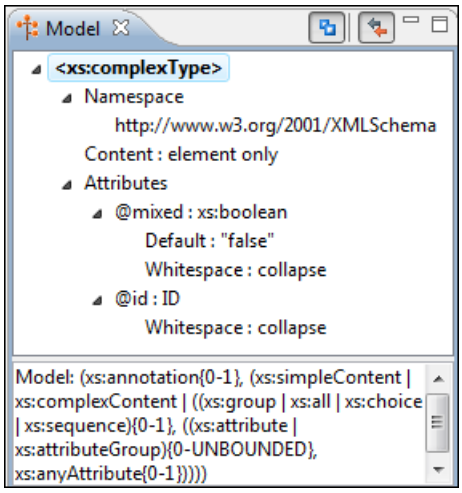


Figure 271: Element Structure Panel

Annotation Panel

The **Annotation** panel displays the annotation information for the currently selected element. This information is collected from the XML schema.

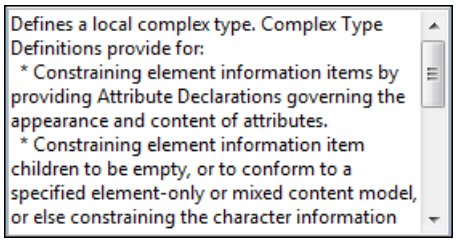


Figure 272: Annotation panel

Attributes View in Author Mode

The **Attributes** view presents all the attributes of the current element determined by the schema of the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened from the **Window** > **Show View** menu.

You can use this view to edit or add attribute values. The attributes of an element are editable if any one of the following is true:

- The CSS stylesheet associated with the document does not specify a **false** value for the -oxy-editable property associated with the element.
- The element is entirely included in a deleted *Track Changes* marker.
- The element is part of a content fragment that is referenced in **Author** mode from another document.

The attributes are rendered differently depending on their state:

- The names of the attributes are rendered with a bold font, and their values with a plain font.
- Default values are rendered with a plain font, painted gray.
- Empty values display the text "[empty]", painted gray.
- Invalid attributes and values are painted red.

To edit the value of the corresponding attribute, double-click a cell in the **Value** column . If the possible values of the attribute are specified as `list` in the schema of the edited document, the **Value** column acts as a combo box that allows you to either select the value from a list or manually enter it.

Note: If the cursor is located inside read-only content, the attribute names and values are faded and you cannot add, edit, or remove values.

You can sort the attributes table by clicking the **Attribute** column header. The table contents can be sorted as follows:

- By attribute name in ascending order.
- By attribute name in descending order.
- Custom order, where the used attributes are displayed at the beginning of the table sorted in ascending order, followed by the rest of the allowed elements sorted in ascending order.

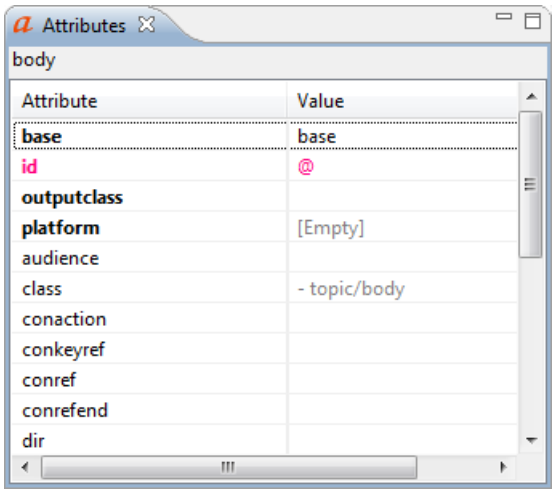


Figure 273: Attributes View

A drop-down list located in the upper part of the view allows you to select the current element or its ancestors.

Contextual Menu Actions in the Attributes View

The following actions are available in the contextual menu of the **Attributes** view when editing in **Author** mode:

Set empty value

Specifies the current attribute value as empty.

Remove

Removes the attribute (action available only if the attribute is specified). You can invoke this action by pressing the **(Delete)** or **(Backspace)** keys.

Copy

Copies the `attrName="attrValue"` pair to the clipboard. The `attrValue` can be:

- The value of the attribute.
- The value of the default attribute, if the attribute does not appear in the edited document.
- Empty, if the attribute does not appear in the edited document and has no default value set.

Paste

Depending on the content of the clipboard, the following cases are possible:

- If the clipboard contains an attribute and its value, both of them are introduced in the **Attributes** view. The attribute is selected and its value is changed if they exist in the **Attributes** view.
- If the clipboard contains an attribute name with an empty value, the attribute is introduced in the **Attributes** view and you can start editing it. The attribute is selected and you can start editing it if it exists in the **Attributes** view.
- If the clipboard only contains text, the value of the selected attribute is modified.

In-place Attributes Editor

Oxygen XML Editor plugin includes an in-place attributes editor in **Author** mode. To edit the attributes of an XML element in-place, do one of the following:

- Select an element or place the cursor inside it and then press the **Alt + Enter** keyboard shortcut.
- Double-click any named start tag when the document is edited in one of the following display modes.: **Full Tags with Attributes**, **Full Tags**, **Block Tags**, or **Inline Tags**.

This opens an in-place attributes editor that contains the same content as the **Attributes** view. By default, this editor presents the **Name** and **Value** fields, with the list of all the possible attributes collapsed.

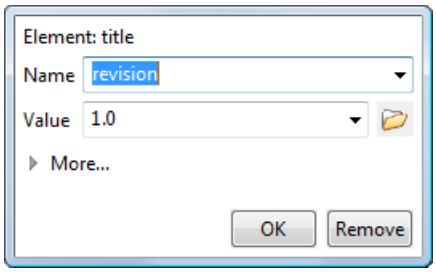


Figure 274: In-place Attributes Editor

Name Combo Box

Use this combo box to select an attribute. The drop-down list displays the list of possible attributes allowed by the schema of the document, as in the **Attributes** view.

Value Combo Box

Use this combo box to add, edit, or select the value of an attribute. If the selected attribute has predefined values in the schema, the drop-down list displays those possible values. You can use the **Browse** button to select a URL for the value of an attribute. You can also press **Ctrl + Space** to open a content completion window that offers a list of possible choices and allows you to select multiple values.

If you click **More** while in the collapsed version, it is expanded to the full version of the in-place attribute editor.

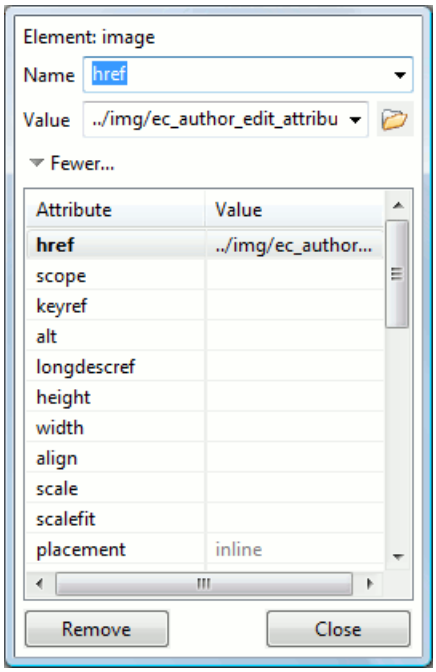


Figure 275: In-place Attributes Editor (Full Version)

The full version includes a table grid, similar to the **Atributes** view, that presents all the attributes for the selected element.

Elements View in Author Mode

The **Elements** view presents a list of all defined elements that are valid at the current cursor position according to the schema associated to the document. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the view features a combo box that contains the ordered ancestors of the current element. Selecting a new element in this combo box updates the list of the allowed elements. By default, only the elements that are allowed at the current cursor position are listed. However, if the **Show only items allowed at cursor position** option is not selected in the **View** preferences page, two additional tabs (**Before** and **After**) will be

displayed at the bottom of the view and they list elements that are allowed before or after the element at the current cursor position.

Double-clicking any of the listed elements inserts that element into the edited document and its position depends on the tab.

- **Cursor** tab - Double-clicking an element inserts it at the current cursor position.
- **Before** tab - Double-clicking an element inserts it before the element at the cursor position.
- **After** tab - Double-clicking an element inserts it after the element at the cursor position.

Pressing **F2** with an element selected will display information about that particular element.

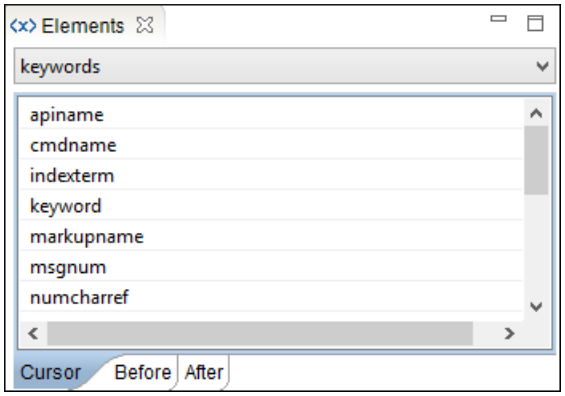


Figure 276: Elements View in Author Mode

Entities View

Entities provide abbreviated entries that can be used in XML files when there is a need of repeatedly inserting certain characters or large blocks of information. An *entity* is defined using the `ENTITY` statement either in the DOCTYPE declaration or in a DTD file associated with the current XML file.

There are three types of entities:

- **Built-in** or **Predefined** - Entities that are part of the predefined XML markup (`<`, `>`, `&`, `'`, `"`).
- **Internal** - Defined in the DOCTYPE declaration header of the current XML.
- **External** - Defined in an external DTD module included in the DTD referenced in the XML DOCTYPE declaration.

Note: If you want to add internal entities, you would need to switch to the Text editing mode and manually modify the DOCTYPE declaration. If you want to add external entities, you need to open the DTD module file and modify it directly.

The **Entities** view displays a list with all entities declared in the current document, as well as built-in ones. By default, it is located on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Double-clicking one of the entities will insert it at the current cursor position in the XML document. You can also sort entities by name and value by clicking the column headers.

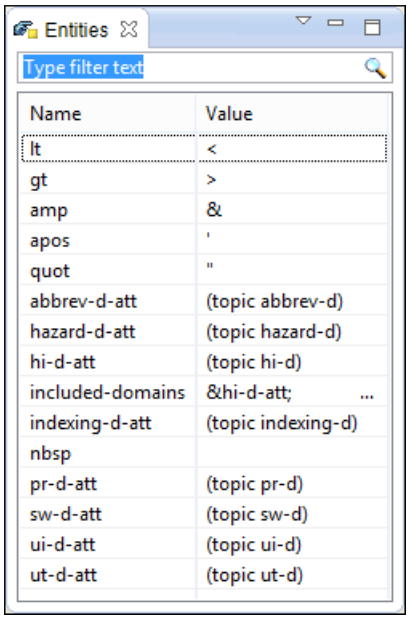


Figure 277: Entities View

The view features a filtering capability that allows you to search an entity by name, value, or both. Also, you can choose to display the internal or external entities.

Note: When entering filters, you can use the *?* and *** wildcards. Also, you can enter multiple filters by separating them with a comma.

Code Templates

Code templates are code fragments that can be inserted quickly at the current editing position . Oxygen XML Editor plugin includes a set of built-in code templates for CSS, Schematron, XSL, XQuery, and XML Schema document types. You can also define your own code templates for any type of file and share them with others.

To get a complete list of available code templates, press **Ctrl + Shift + Space** in **Text** mode. To enter the code template, select it from the list or type its code and press **Enter**. If a shortcut key has been assigned to the code template, you can also use the shortcut key to enter it. Code templates are displayed with a symbol in the content completion list.

When the *Content Completion Assistant* is invoked (**Ctrl + Space (Command + Space on OS X)** in **Text** mode or **Enter** in **Author** mode), it also presents a list of code templates specific to the type of the active editor.

For more information about code templates, watch our video demonstration:

https://www.youtube.com/embed/eNOMCJSzlu8

Outline View in Author Mode

The **Outline** view in **Author** mode displays a general tag overview of the currently edited XML Document. When you edit a document, the **Outline** view dynamically follows the changes that you make, displaying the node that you modify. This functionality gives you great insight on the location of your modifications in the current document. It also shows the correct hierarchical dependencies between elements. This makes it easy for you to be aware of the document structure and the way element tags are nested.

Outline View Features

The **Outline** view allows you to:

- Quickly navigate through the document by selecting nodes in the **Outline** tree.
- Insert or delete nodes using contextual menu actions.
- Move elements by dragging them to a new position in the tree structure.
- Highlight elements in the editor area. It is synchronized with the editor area, so when you make a selection in the editor area, the corresponding nodes are highlighted in the **Outline** view, and vice versa.

- View document errors, as they are highlighted in the **Outline** view. A tooltip also provides more information about the nature of the error when you hover over the faulted element.

Outline View Interface

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

It also includes a **View menu** in the top-right corner that presents a variety of options to help you filter the view even further.

Drop and Drop Actions in the Outline View

Entire XML elements can be moved or copied in the edited document using only the mouse in the **Outline** view with drag-and-drop operations. Several drag and drop actions are possible:

- If you drag an XML element in the **Outline** view and drop it on another node, then the dragged element will be moved after the drop target element.
- If you hold the mouse pointer over the drop target for a short time before the drop then the drop target element will be expanded first and the dragged element will be moved inside the drop target element after its opening tag.
- You can also drop an element before or after another element if you hold the mouse pointer towards the upper or lower part of the targeted element. A marker will indicate whether the drop will be performed before or after the target element.
- If you hold down the **(Ctrl (Command on OS X))** key after dragging, a copy operation will be performed instead of a move.

Tip: You can select and drag multiple nodes in the **Outline** view when editing in **Author** mode.

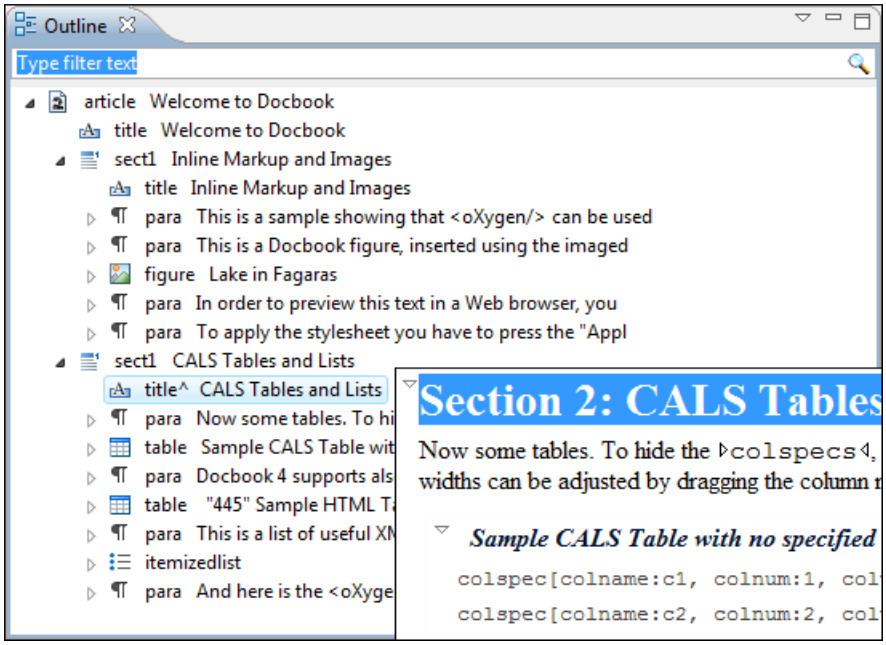


Figure 278: Outline View

Outline View Filters in Author Mode

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

The following actions are available in the **View menu** of the **Outline** view when editing in **Author** mode:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the XML Structured Outline preferences page.

Outline View Contextual Menu Actions in Author Mode

The contextual menu of the **Outline** view in **Author** mode contains the following actions:

Edit Attributes

Displays an in-place attributes editor that allows you to edit the attributes of a selected node.

Edit Profiling Attributes

Allows you to change the profiling attributes defined on all selected elements.

Append Child

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection as a child of the current element.

Insert Before

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection immediately before the current element, as a sibling.

Insert After

Invokes a content completion list with the names of all the elements that are allowed by the associated schema and inserts your selection immediately after the current element, as a sibling.

Cut, Copy, Paste, Delete common editing actions

Executes the typical editing actions on the currently selected elements. The **Cut** and **Copy** operations preserve the styles of the copied content.

Paste before

Inserts a well-formed copied element before the currently selected element.

Paste after

Inserts a well-formed copied element after the currently selected element.

Paste as XML

Pastes copied content that is considered to be valid XML, preserving its XML structure.

Toggle Comment

Encloses the currently selected element in an XML comment, if the element is not already commented. If it is already commented, this action will remove the comment.

Rename Element

Invokes a **Rename** dialog box that allows you to rename the currently selected element, siblings with the same name, or all elements with the same name.

Expand All

Expands the structure tree of the currently selected element.

Collapse All

Collapses all of the structure tree of the currently selected node.

Tip: You can copy, cut or delete multiple nodes in the **Outline** by using the contextual menu after selecting multiple nodes in the tree.

Related Information:

Attributes View in Author Mode on page 202

Reviewing Documents

Oxygen XML Editor plugin includes a variety of helpful review tools that improve your ability to collaborate with other members of your team, track changes, mark content for various reasons, add comments in your content, and to manage the review features.

Tracking Document Changes

The *Track Changes* feature is a way to keep track of the changes you make in a document. The *Track Changes* feature highlights changes that you make to the content in a document, as well as changes to attributes. Changes can be tracked for insertions and deletions. When the *Track Changes* feature is activated, insertions are rendered in **Author** mode with an underline while deletions are rendered with a strike through.

The *tracked changes* are also displayed in the **Review** view and you can also choose to present the changes in callouts by selecting the **Track Changes Deletions** and **Track Changes Insertions** options in the **Callouts** preferences page.

Adding Comments in Documents

You can associate a comment to a selected area of content. Comments can highlight virtually any content from your document, with the exception of *read-only* text. The difference between using comments and *change tracking* is that a comment can be associated to an area of text without modifying or deleting the text.

Comments are presented in callouts with persistent highlights and a colored background. The background color is assigned automatically by the application, but it can also be customized from the **Review** preferences page.

Highlighting Content

Oxygen XML Editor plugin includes a highlighting feature that allows you to create digital markers to emphasise important fragments of your documents. This is especially useful when you want to mark content that needs additional work or the attention of others.

Using the Review View

Oxygen XML Editor plugin includes a **Review** view that provides a simplified way of monitoring all the insertions, deletions, comments, and highlights in an XML document. This handy tool is especially useful for large teams that need to gather and manage all the edits from all team members who are working on the same project.

The **Review** view is also useful for managing *tracked changes* and comments in a single panel. In this view, the changes and comments are presented in a compact form, in the order they appear in the document, and they are synchronized with the changes and comments in the main editing area.

You can use this view to quickly navigate through changes, accept or reject them, or to view and manage comments or highlights. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

Printing Review Information

When you print a document from **Author** mode, whatever review information is shown in the main editing area will be included in the printed output. For example, *tracked changes* will be included and as long as the **Comments** option is selected in the **Callouts** preferences page, comment callouts will also be included (same with *tracked change* callouts if their corresponding options are selected in the **Callouts** preferences page.

Managing Tracked Changes

Oxygen XML Editor plugin includes a *Track Changes* feature that allows you to review changes that you or other authors have made and then accept or reject them. You can also manage the visualization mode of the tracked changes, add comments to changes, and mark them as being done. These actions are easily accessible from contextual menus, the toolbar, or the **Review** view.

The *Track Changes* feature is also able to keep track of changes you make to attributes in a document and the changes are presented in the **Review** view and **Attributes** view.

Types of Tracked Changes

The types of *tracked changes* include:

- Inserting, deleting content (text or elements)
- Drag and drop content (text or elements)
- Cutting or pasting content (text or elements)
- Inserting, deleting, and changing the structure of tables
- Inserting and editing lists and their content
- Inserting and deleting entities
- Inserting and deleting element tags
- Editing attributes
- Performing a **Split** operation
- Performing a **Surround with** operation
- Changes in referenced content (for example, XInclude fragments or DITA conrefs)

Important: If you copy content in **Author** mode that contains *tracked changes*, the changes will automatically be accepted prior to the content being copied to the clipboard. This filtering is performed only if the selection is not entirely inside a tracked change.

Activating the Change Tracking Feature

To activate the *Track Changes* feature for the current document, use any of the following methods:

- Click the **Track Changes** button on the toolbar.
- Select **Track Changes** from the **Review** submenu of the contextual menu in the main editing area in **Author** mode.
- Select **Track Changes** from the **Edit** > **Review** menu.

To activate the *Track Changes* feature globally for all documents that you open in Oxygen XML Editor plugin, change the **Initial State** option to **Always On** in the **Review** preferences page.

Rendering Tracked Changes in Author Mode

When *Track Changes* is enabled, your modifications are highlighted using a distinctive color. The colors can be customized from the **Review** preferences page, along with the name of the author and the initial state of the feature when you open a document. Insertions are rendered with an underline while deletions are rendered with a strike through.

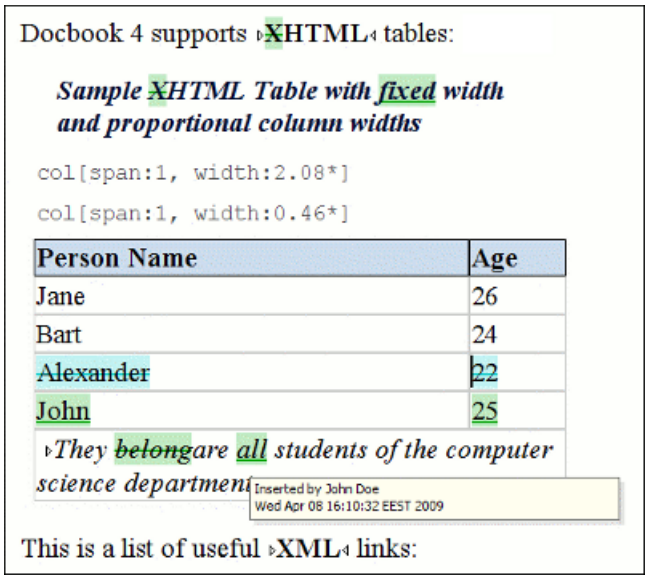


Figure 279: Change Tracking in Author Mode

When hovering over a change a tooltip displays information about the author and modification time.

Change Tracking Contextual Menu Actions

You can right-click any change in **Author** mode to access the following contextual menu actions:

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes, all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Change Tracking Toolbar Actions

By default, the toolbar includes the following actions and options for reviewing or *tracking changes* (similar actions are also available in the **Edit** > **Review** menu and the **Review** submenu of the contextual menu):

Track Changes

Enables or disables the *Track Changes* support for the current document.

Accept Change(s) combo box

This combo box is both a button and a drop-down menu that includes the following actions (when you select an action from the drop-down menu, that action becomes the default action for the combo box button):

- **Accept Change(s) and Move to Next** - Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted.

- **Accept Change(s)** - Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection.
- **Accept All Changes** - Accepts all *Tracked Changes* in the current document.

Reject Change(s) combo box

This combo box is both a button and a drop-down menu that includes the following actions (when you select an action from the drop-down menu, that action becomes the default action for the combo box button):

- **Reject Change(s) and Move to Next** - Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected.
- **Reject Change(s)** - Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection.
- **Reject All Changes** - Rejects all *Tracked Changes* in the current document.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Track Changes Visualization Modes Drop-Down Menu

This drop-down menu includes specialized actions that allow you to switch between the following visualization modes:

- **View All Changes/Comments** - This mode is active by default. When you use this mode, all tracked changes are represented in the **Author** mode.
- **View only Changes/Comments by** - Only the tracked changes made by the author you select are presented.
- **View Final** - This mode offers a preview of the document as if all tracked changes (both inserted and deleted) were accepted.
- **View Original** - This mode offers a preview of the document as if all tracked changes (both inserted and deleted) were rejected. If you attempt to edit the document in this mode, the view mode will switch to **View All Changes/Comments**.

Note: If you use **View Final** mode and **View Original** mode, *callouts* are not displayed for comments or changes. To display callouts, use the **View All Changes/Comments** mode.

Highlight

Enables or disables the **Highlight** tool. Use the **Highlight** drop-down menu to select a new color.

Add Comment

Inserts a comment at the cursor position. The comment appears in a callout box and a tooltip (when hovering over the change).

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Manage Reviews

Opens the **Review** view.

Tracked Change Callouts

You can also choose to display insertion and deletion changes in *callouts* in **Author** mode. By default, tracked changes are not displayed in callouts, but you can change this behavior by selecting the **Track Changes Deletions** and **Track Changes Insertions** options in the **Callouts** preferences page. You can also choose to display the actual content of the deletion or insertion.

By displaying the changes in callouts, you then have access to even more actions, such as the ability to reply or mark them as being done. For more information, see Author Callouts on page 482.

Tracked Changes in the Review View

The **Review** view is also useful for managing tracked changes and comments. In this view, the edits are presented in a compact form, in the order they appear in the document and each edit is marked with a type-specific icon. You can use this view to quickly navigate through changes, accept or reject them, or to add and manage comments for the changes. You can also search for specific changes and it includes some filtering options (for example, you can filter it to only show certain types of changes or to only show changes for a particular author).

For more information, see Review View on page 486.

Tracked Changes XML Source Code

The changes are stored in the document source code as processing instructions and they do not interfere with validations or transformations. For each change, the author name and the modification time are preserved.

Example - Insertion Change: The following processing instruction is an example of how an *insertion* change is stored in a document:

```
<?oxy_insert_start author="John Doe" timestamp="20090408T164459+0300"?>all<?
oxy_insert_end?>
```

Example - Deletion Change: The following processing instruction is an example of how a *deletion* change is stored in a document:

```
<?oxy_delete author="John Doe" timestamp="20090508T164459+0300" content="belong"?>
```

For more information about the *Track Changes* support, watch our video demonstration:

https://www.youtube.com/embed/L_ESxRMfnek

Related Information:

Managing Comments on page 479
Author Callouts on page 482
Review View on page 486

Tracked Changes Behavior

The behavior of the *Track Changes* feature depends on the context, the type of change, and whether or not it is activated.

Inserting Content

If the *Track Changes* feature is disabled and you insert content, the following behavior is possible:

- Making an insertion in a **Delete** change results in the change being split in two and the content is inserted without being marked as change.
- Making an insertion in an **Insert** change results in the change being split in two and the content is inserted without being marked as change.
- Making an insertion in regular content results in a regular insertion.

If the *Track Changes* feature is enabled and you insert content, the following behavior is possible:

- Making an insertion in a **Delete** change results in the change being split in two and the current inserted content appears marked as an INSERT.
- Making an insertion in an **Insert** change results in the following:

    - If the original insertion was made by another user, the change is split in two and the current inserted content appears marked as an INSERT by the current author.
    - If the original **Insert** change was made by the same user, the change is just expanded to contain the inserted content. The creation time-stamp of the previous insert is preserved.
- If we insert in regular content, the current inserted content appears marked as an **Insert** change.

Surrounding Content

If the *Track Changes* feature is enabled and you surround content in a new XML element, the following behavior is possible:

- Making a surround in a **Delete** change results in nothing happening.
- Making a surround in an **Insert** change results in the following:
    - If the original insertion was made by another user, the change is split in two and the surround operation appears marked as being performed by the current author.
    - If the original **Insert** change was made by the same user, the existing change is just expanded to contain the surrounded content.
- Making a surround in regular content results in the operation being marked as a surround change.

Deleting Characters

If the *Track Changes* feature is disabled and you delete content character by character, the following behavior is possible:

- Deleting content in an existing **Delete** change results in nothing happening.
- Deleting content in an existing **Insert** change results in the content being deleted without being marked as a deletion and the INSERT change shrinks accordingly.
- Deleting in regular content results in a regular deletion.

If the *Track Changes* feature is enabled and you delete content character by character, the following behavior is possible:

- Deleting content in an existing **Delete** change results in the following:
    - If the same author created the **Delete** change, the previous change is marked as deleted by the current author.
    - If another author created the **Delete** change, nothing happens.
- Deleting content in an existing **Insert** change results in the following:
    - If the same author created the **Insert** change, the content is deleted and the **Insert** change shrinks accordingly.
    - If another author created the **Insert** change, the **Insert** change is split in two and the deleted content appears marked as a **Delete** change by the current author.
- Deleting in regular content results in the content being marked as a **Delete** change by the current author.

Deleting Selections of Content

If the *Track Changes* feature is disabled and you delete a selection of content, the following behavior is possible:

- If the selection contains an entire **Delete** change, the change disappears and the content is deleted.
- If the selection intersects with a **Delete** change (starts or ends in one), it results in nothing happening.
- If the selection contains an entire **Insert** change, the change disappears and the content is deleted.
- If the selection intersects with an **Insert** change (starts or ends in one), the **Insert** change is shrunk and the content is deleted.

If the *Track Changes* feature is enabled and you delete a selection of content, the following behavior is possible:

- If the selection contains an entire **Delete** change, the change is considered as rejected and then marked as deleted by the current author, along with the other selected content.
- If the selection intersects a **Delete** change (starts or ends in one), the change is considered as rejected and marked as deleted by the current author, along with the other selected content.

- If the selection contains an entire **Insert** change, the following is possible:
  - If the **Insert** is made by the same author, the change disappears and the content is deleted.
  - If the **Insert** is made by another author, the change is considered as accepted and then marked as deleted by the current author, along with the other selected content.
- If the selection intersects an **Insert** change (starts or ends in one), the **Insert** change shrinks and the part of the **Insert** change that intersects with the selection is deleted.

Deleting Tags

Assuming you are using any of the *Tag Display Modes* other than **No Tags** and the *Track Changes* feature is disabled, the following behavior is possible:

- If you delete a start or end tag, both the start and end tag will be removed, while any content that was inside the element is preserved.

Assuming you are using any of the *Tag Display Modes* other than **No Tags** and the *Track Changes* feature is enabled, the following behavior is possible:

- If you delete a start tag of an *inline element*, both the start and end tag are marked as a **Delete** change by the current author, while any content that was inside the element is preserved.

Copying Content

If the *Track Changes* feature is disabled and you copy content, the following behavior is possible:

- If the copied area contains **Insert** or **Delete** changes (or attribute edits), these are also copied to the clipboard.

If the *Track Changes* feature is enabled and you copy content, the following behavior is possible:

- If the copied area contains **Insert** or **Delete** changes (or attribute edits), these are all accepted in the content of the clipboard (the changes will no longer be in the clipboard).

Pasting Content

If the *Track Changes* feature is disabled and you paste content, the following behavior is possible:

- If the clipboard content contains **Insert** or **Delete** changes (or attribute edits), they will be preserved on paste.

If the *Track Changes* feature is enabled and you paste content, the following behavior is possible:

- If the clipboard content contains **Insert** or **Delete** changes (or attribute edits), all the changes are accepted and then the paste operation proceeds according to the insertion rules.

Tracked Changes Limitations

There are some inherent limitations to the *Change Tracking* feature. These limitations include the following:

- **Limitations to rejected changes** - Recording changes has limitations and there is no guarantee that rejecting all changes will return the document exactly to its original state.
- **Limitations to hierarchical changes** - Recorded changes are not hierarchical, a change cannot contain other changes inside. For example, if you delete an insertion made by another user, then reject the deletion, the information about the author who made the previous insertion is not preserved.
- **Limitations to using certain actions** - Some actions cannot be implemented with the *Track Changes* feature enabled. For example, some of the table-related actions (**Delete Row(s)**, **Delete Column(s)**, **Join Cells**, **Split Cell**) ignore the *Track Changes* feature when executing the action.

Tracked Changes XML Markup

Depending on the type of edits, the following markup appears in the document source code when you activate the *Track Changes* feature:

Edit Type	Processing Instruction Start Marker	Processing Instruction End Marker	Attributes
Insertion	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`
Split	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`, `type="split"`
Surround	`<?oxy_insert_start?>`	`<?oxy_insert_end?>`	`author`, `timestamp`, `type="surround"`
Deletion	`<?oxy_delete?>`	_	`author`, `timestamp`, `content`
Comment	`<?oxy_comment_start?>`	`<?oxy_comment_end?>`	`author`, `timestamp`, `comment`, `mid`
Attribute Change	`<?oxy_attributes?>`	_	`id`, `type`, `oldValue`, `author`, `timestamp`

If a comment intersects another, the `mid` attribute is used to correctly identify start and end processing instruction markers.

Managing Comments

You can add comments to any selected area of content within XML documents, with the exception of *read-only* content. The difference between using comments and *tracked changes* is that a comment is associated to a selection without modifying or deleting the content.

By default, when you annotate your XML documents, the comments are displayed in the **Author** mode as *callouts* (balloons) and they are rendered with a unique name and background for each user. If comments are not currently displayed in callouts, select the **Comments** option in the **Callouts** preferences page. Comments are also displayed in the **Review** view.

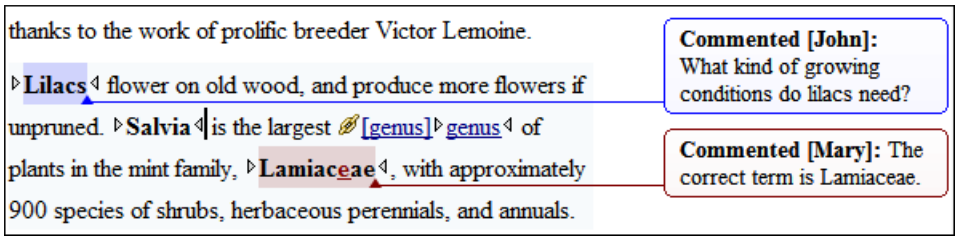


Figure 280: Comments in Author Mode

Managing Comments in the Main Editor

You can insert and manage comments directly in the main editing area in **Author** mode.

Add Comment

To insert a comment at the cursor position or on a specific selection of content, select the **Add Comment** action from the toolbar (or in the **Review** submenu of the contextual menu).

Tip: When adding or editing a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

Show/Edit Comments

To edit an existing comment that you have added in the main editing area in **Author** mode, select the **Show/Edit Comments** action from the toolbar (or in the **Review** submenu of the contextual menu). The action opens a dialog box that allows you to see and edit your comment at the cursor position. Note that you cannot edit a comment that was added by another user, so in that case, the dialog box just displays the comment without the possibility of editing it.

Remove Comments

To remove a comment at the cursor position or multiple comments in a selection, select **Remove Comment(s)** from the toolbar (or in the **Review** submenu of the contextual menu).

Copy/Paste

If you copy content that includes comments, they will be preserved when you paste it.

Managing Comments in Callouts

As long as the **Comments** option is selected in the **Callouts** preferences page, comments are also displayed in callouts. By displaying the comments in callouts, you then have access to even more actions, such as the ability to reply or mark them as being done. When you right-click a specific comment in its callout, the contextual menu includes the following actions.

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Tip: When adding, editing, or replying to a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

Managing Comments in the Review View

The **Review** view is also useful for managing comments. In this view, comments are presented in a compact form, in the order they appear in the document, along with tracked changes. You can also use this view to search for specific comments and it includes some filtering options (for example, you can filter it to only show comments for a particular author). When you right-click a specific comment in the **Review** view, the contextual menu includes the following actions.

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to

the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Show only reviews by '<author name>'

Filters the comments to only show comments for the particular author.

Remove all Comments

Removes all comments from the document.

Comments XML Source Code

The comments are stored in the document source code as processing instructions that contain information about the author name and the comment time:

```
<?oxy_comment_start author="John Doe" timestamp="20090508T164459+0300"
 comment="Do not change this content"?>
    Important content
<?oxy_comment_end?>
```

Replies to comments are stored in the document source code as a comment (with information about the author name and time), but with a `parentID` attribute and its value is the same as the `id` value of the parent comment.

```
<?oxy_comment_start author="Tom" timestamp="20160217T102630+0200"
comment="We should not forget about recycling the oil and oil filter!"
parentID="vws_x4l_1v" mid="4"?>
```

Related Information:

Author Callouts on page 482
Review View on page 486

Managing Highlights

Use the **Highlight** tool to mark fragments in your document using various colors. This is especially useful when you want to mark sections that needs additional editing or to draw the attention of others to particular content.

Using the Highlight Tool

You can find the **Highlight** action on the main toolbar, in the **Edit** > **Review** menu, or in the **Review** submenu of the contextual menu of a document. You can also choose the color to use for the highlight or choose to **Stop highlighting** from the same menus.

To highlight content, follow these steps:

1. Click the **Highlight** icon on the toolbar.

   Step Result: The highlighting mode is on and the cursor changes to a dedicated symbol.
2. Click the small arrow next to the **Highlight** icon and select the color that you want to use for the highlighting.
3. Select the content you want to highlight. To mark multiple parts of a document, press and hold **Ctrl (Meta on Mac OS)** and select the parts you want to highlight.
4. To exit the highlighting mode, press **Esc**, click the **Highlight** icon, or start editing the document.

To remove highlighting from a document, follow these steps:

1. Either select the text you want to remove highlighting from using your cursor, or press **Ctrl + A (Command + A on OS X)** if you want to select all of the text.
2. Click the small arrow next to the **Highlight** icon and select **No color (erase)**, or right-click the highlighted content and select **Remove highlight(s)**.
3. To exit the highlighting mode, press **Esc**, click the **Highlight** icon, or start editing the document.

Note: Oxygen XML Editor plugin preserves the highlighting of a document between working sessions. Also, if you copy content that includes highlights, the highlighting will be preserved when you paste it.

Review View

The **Review** view is also useful for managing highlights. In this view, the highlights are presented in a compact form, in the order they appear in the document, along with *tracked changes* and comments. The following actions are available in the contextual menu of each highlight in the **Review** view:

Change Color
Allows you to change the color of an existing highlight by selecting the new color from this menu.

Remove Highlight
Removes the selected highlight.

Remove Highlights with the Same Color
Removes the selected highlight and all others that have the same color.

Remove All Highlights
Removes all highlights from the document.

Highlights XML Source Code

The highlights are stored in the document source code as processing instructions that contain information about the color:

```
<?oxy_custom_start type="oxy_content_highlight" color="0,128,255"?>
  The highlights are stored<?oxy_custom_end?>
```

For more information about using the **Highlight** tool, watch our video demonstration:

https://www.youtube.com/embed/RMFyuMfisZY

Related Information:
Review View on page 486

Author Callouts

Oxygen XML Editor plugin uses *callouts* to present comments and *tracked change* modifications that you or other members of your team have added to the document.

Displaying Callouts in Author Mode

The callouts are displayed in the right side of the editing area in **Author** mode. They are decorated with a colored border and also have a colored background. The background color is assigned automatically by the application depending on the user who is editing the document and the type of change, but it can also be customized from the **Review** preferences page. This preferences page allows you to configure the colors for tracked change insertions or deletions, and for comments.

You can also choose to use the same color for all changes of that particular type of change, regardless of who makes the change. To do this, select the **Fixed** option for the particular type of change and choose a color from the color box. If the **Automatic** option is selected, Oxygen XML Editor plugin automatically assigns a color based upon the **Colors for automatic assignment** list.

The horizontal line that connects the callouts to their corresponding text fragments has the same color as the border. If this horizontal line is not visible, select the **Show all connecting lines** option in the **Callouts** preferences page. If you hover over a callout, it is highlighted and a tooltip is displayed that contains additional information.

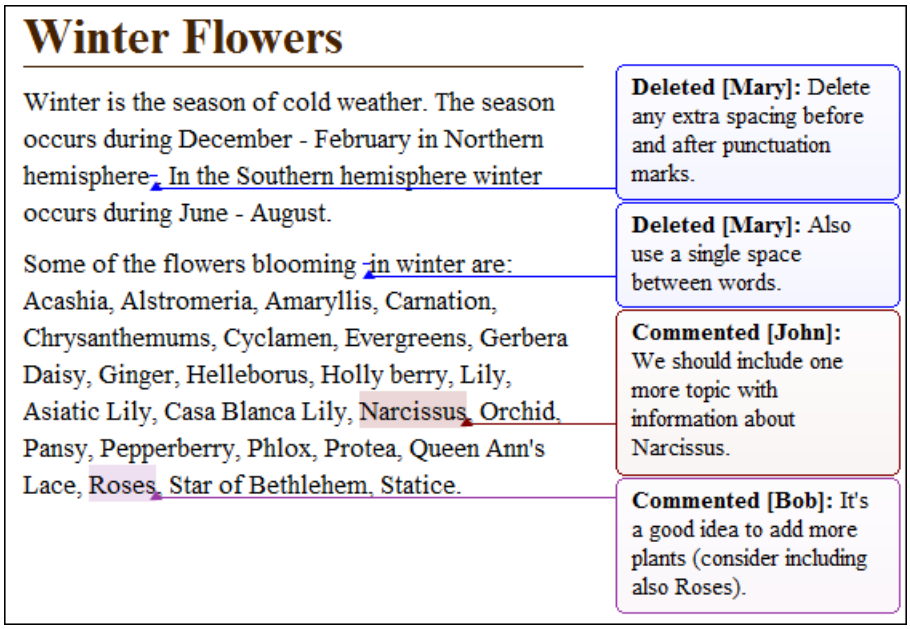


Figure 281: Multiple Author Callouts

Note: Oxygen XML Editor plugin displays callouts only if **View All Changes/Comments** or **View Only Changes/Comments by** is selected in the **Track Changes Visualization Modes** drop-down menu. Oxygen XML Editor plugin does not display callouts in **View Final** and **View Original** modes.

In some cases, the text you are editing can span into the callouts area. For example, this situation can appear for callouts associated with wide images or *space-preserved elements* that contain long fragments (such as a DITA *codeblock* element or `programlisting` in DocBook). To help you view the text under the covered area, Oxygen XML Editor plugin applies transparency to these callouts. When the cursor is located under a callout, the transparency is enhanced, allowing you to both edit the covered content and access the contextual menu of the editing area.

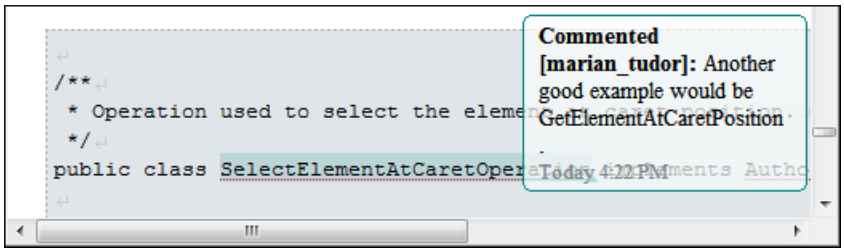


Figure 282: Transparent Callout

Adjusting Callout Width

To display more of the content in all the callouts in the current document, you can adjust the width by dragging the left side of any of the callouts. This will adjust the width for all comments in the current document. When you end the current editing session, the width of all callouts will revert back to the default value, which is the value of the **Initial Width** option in the **Callouts** preferences page.

You can also adjust the maximum number of lines to be shown in the callouts using the **Text Lines Count Limit** option. Note that this does not limit the number of lines in the actual comment. It only limits the number of lines shown without opening or editing it.

Type of Callouts in Oxygen XML Editor plugin

Oxygen XML Editor plugin uses callouts to display comments and *Tracked Changes* that you associate with fragments of the document you are editing. You can choose which types of edits will be shown in callouts by

configuring the options in the **Callouts** preferences page. You can choose to enable the following types of review callouts:

- **Comment Callouts** - As long as the **Comments** option is selected in the **Callouts** preferences page, comments are displayed in callouts. A comment callout contains the name of the author who inserts the callout and the comment itself. You can also select the **Show review time** option to include timestamp information in the comment callouts.

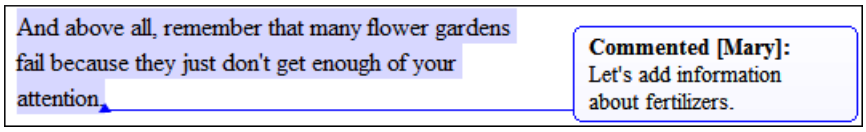


Figure 283: Comment Callouts

There are several types of comments that can be added in **Author** mode:

- *Author Review Comments* - Comments that you associate with specific content. To insert this type of comment, select the content and use the **Add Comment** action that is available on the toolbar (or in the **Review** submenu of the contextual menu).
- *Comments Added to Tracked Changes* - Comments that you add to an already existing *tracked change* insertion or deletion. To insert this type of comment, right-click the change in the main editor or its callout and select **Comment Change**.
- *Replies to Comments* - You can use this type of comment to create discussion threads. To insert this type of comment, right-click the change in the its callout and select **Reply**. A single callout is presented for a root comment or change and its replies. The replies are displayed with an indentation in the callouts and those that are on the same level are sorted depending on the timestamp.

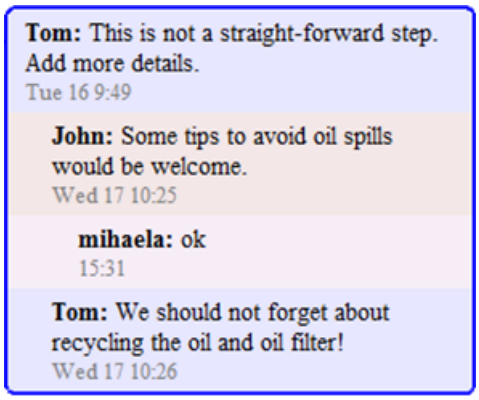


Figure 284: Callout for a Comment with Replies

Tip: When adding, editing, or replying to a comment, you can use **Enter** to insert line breaks and Oxygen XML Editor plugin will take the line breaks into account when presenting the callout. You can also use **Ctrl + Enter** to accept your changes and close the dialog box.

- **Tracked Change Deletion Callouts** - As long as the **Track Changes Deletions** option is selected in the **Callouts** preferences page, deletions that are made while the *Track Changes* feature is enabled are displayed in callouts. A deletion callout contains the type of callout (**Deleted**) and the name of the author that made the deletion. You can also select the **Show deleted content in callout** option to display the actual deleted content in the callout. Additionally, you can select the **Show review time** option to include timestamp information in the deletion callouts.

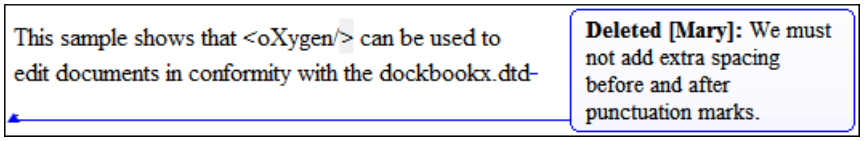


Figure 285: Deletion Callouts

- **Tracked Change Insertion Callouts** - As long as the **Track Changes Insertions** option is selected in the **Callouts** preferences page, insertions that are done while the *Track Changes* feature is enabled are displayed in callouts. An insertion callout contains the type of callout (**Inserted**) and the name of the author that inserted the content. You can also select the **Show inserted content in callout** option to display the actual deleted content in the callout. Additionally, you can select the **Show review time** option to include timestamp information in the deletion callouts.

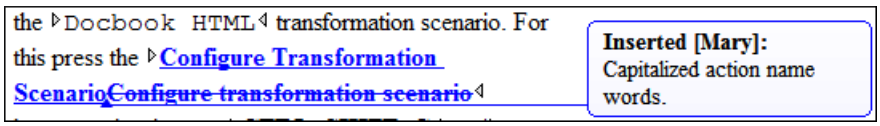


Figure 286: Insertion Callouts

Callout Contextual Menu Actions

Some useful actions are available when the contextual menu is invoked on a callout. The actions depend on the type of callout.

Insertion or Deletion Callout Actions

The following actions are available in the contextual menu of an insertion or deletion callout:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Accept Change

Accepts the tracked change, removes the callout, and moves to the next change. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change

Rejects the tracked change, removes the callout, and moves to the next change. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Comment Callout Actions

The following options are available in the contextual menu of a comment callout:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first

comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Printing Callouts

When you print a document from **Author** mode, all callouts that you or other authors have added to the document are printed. For a preview of the document and its callouts, go to **File** > **Print Preview**.

Review View

The **Review** view is also useful for managing the information in callouts. In this view, changes and comments are presented in a compact form, in the order they appear in the document, and they are synchronized with the changes in the callouts. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

For more information, see Review View on page 486.

To watch our video demonstration about the Callouts support, see our video demonstration:

https://www.youtube.com/embed/kCCWyFqBaUM

Related Information:

Managing Tracked Changes on page 473
Managing Comments on page 479
Review View on page 486

Review View

The **Review** view is an independent panel, available both for built-in and custom XML document *frameworks*. It is designed to offer an enhanced way of monitoring all the changes that you make to a document. This means you can view and manage highlights, comments, and *tracked changes* using a single view.

The **Review** view is useful when you are working with documents that contain large number of edits. The edits are presented in a compact form, in the order they appear in the document. Each type of edit is marked with a specific icon. This view and the editing area are synchronized. When you select an edit listed in the **Review** view, its corresponding fragment of text is highlighted in the editing area and the reverse is also true. For example, when you place the cursor inside an area of text marked as inserted, its corresponding edit is selected in the list.

You can use this view to quickly navigate through changes and it includes some useful hover actions and contextual menu actions to help you manage changes, comments, and highlights. You can also search for specific changes or comments and it includes some filtering options (for example, you can filter it to only show certain types of edits or to only show edits for a particular author).

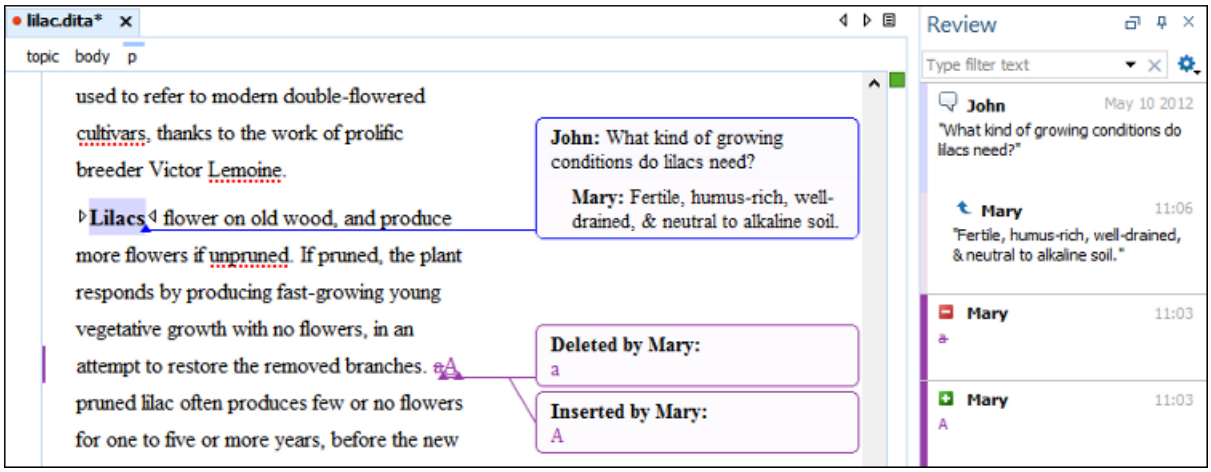


Figure 287: Review View

Activating the Review View

To activate the **Review** view, do one of the following:

- Click the **Manage reviews** button on the toolbar.
- Right-click anywhere in a document and select **Review** > **Manage reviews**.
- Open it from the **Window** > **Show View** menu.

Review View Settings

The upper part of the view contains a filtering area that allows you to search for specific edits. Use the small arrow symbol from the right side of the search field to display the search history.

The **Settings** menu includes the following options:

- **Show highlights** - Controls whether or not the **Review** view displays the highlighting in your document.
- **Show comments** - Controls whether or not the **Review** view displays the comments in the document you are editing.
- **Show track changes** - Controls whether or not the **Review** view displays the inserted and deleted content in your document.
- **Show review time** - Displays the time when the edits from the **Review** view were made.
- **Configure review options** - Opens the **Review** preferences page where you can configure various options for review information.

Hover Actions in the Review View

You can use this view to easily manage changes, highlights, and comments that have been added by you or other users. The following actions are available when you hover over the changes in the **Review** view:

Remove

Available for highlights and comments presented in the **Review** view and it removes the particular highlight or comment from your document and moves to the next change.

Accept

Available for inserted and deleted content presented in the **Review** view and it accepts the particular change in your document and moves to the next change.

Reject

Available for inserted and deleted content presented in the **Review** view and it rejects the particular change in your document and moves to the next change.

Contextual Menu Actions in the Review View

Depending on the type of an edit, the following additional actions are available in the contextual menu of the **Review** view:

Reply

Opens the **Reply** dialog box where you can add a reply to comment or change. The replies are displayed with an indentation in this view.

Mark as Done

This toggles the comment or change as being done and grays it out. You can mark a whole discussion thread as being done by selecting the action on the first (parent) comment in the thread.

Show Comment

Available for comments added by other users and you can use this option to view it in a **Show comment** dialog box.

Edit Comment

Available for comments you have added and you can use this action to edit a comment.

Remove Comment

Use this action to remove the selected comment.

Show only Reviews by '<author name>'

Use this action to filter the edits to only show them for a certain author.

Remove All Comments

Use this action to remove all the comments that appear in the edited document.

Change Color

Available for highlights and it opens a palette that allows you to choose a new color for the highlighted content.

Remove Highlight

Use this action to remove the selected highlight.

Remove Highlights with the Same Color

Use this action to remove all the highlights with the same color from the entire document.

Remove All Highlights

Use this action to remove all the highlights in your document.

Accept Change

Accepts the selected change and moves to the next change.

Reject change

Rejects the selected change and moves to the next change.

Comment change

Available for insertions or deletions and you can use this option to add a comment for the particular change.

Accept all changes

Accepts all the changes in the current document.

Reject all changes

Rejects all the changes in the current document.

For more information about the **Review** view, watch our video demonstration:

https://www.youtube.com/embed/W22jkbwlh60

Related Information:

Managing Tracked Changes on page 473
Managing Comments on page 479
Managing Highlights on page 481
Author Callouts on page 482

Profiling and Conditional Text

Profiling text is a way to mark blocks of text meant to appear in some renditions of the document but not in others. Conditional text differs from one variant of the document to another, while unconditional text appear in all document versions. For example, you can mark a section of a document that is to be included in a manual to be designated for *expert* users and another section for *novice* users, while unmarked sections are included in all renditions.

Profiling Attributes and Condition Sets

Oxygen XML Editor plugin allows you to define values for the profiling attributes and they can be easily managed to filter content in the published output. You can switch between profile sets to see how the edited content looks like before publishing. You can also conditionally profile parts of a document so that certain parts are displayed when certain profiling conditions are set. You can even customize the colors and styling of how the profiling is displayed in **Author** mode.

You can use profiling and conditional text to help you create documentation for multiple output scenarios, including:

- Multiple outputs for a series of similar products.
- Multiple outputs for various releases of a product.
- Multiple outputs for various audiences.

This feature helps to reduce the effort for updating and translating your content and provides an easy way to customize the output for various audiences.

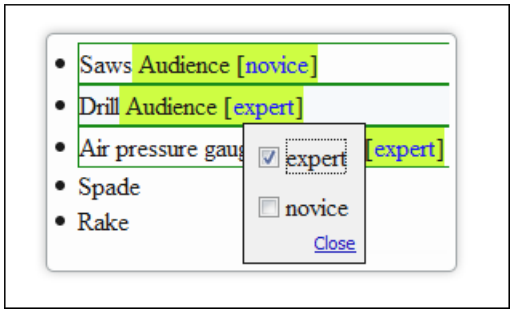


Figure 288: Example: Profiling Content

Oxygen XML Editor plugin includes a preconfigured set of profiling attribute values for some of the most popular document types. These attributes can be redefined to match your specific needs in the **Profiling/Conditional Text** preferences page. You can also define your own profiling attributes and condition sets for each document type (*framework*).

For information about creating and editing profiling attributes, see Creating and Editing Profiling Attributes on page 490 .

For information about creating and editing condition sets, see Creating and Editing Profiling Condition Sets on page 494 .

Related Information:

Customizing Elements that Wrap Profiled Content on page 1275

Creating and Editing Profiling Attributes

Oxygen XML Editor plugin includes support for defining your own profiling attributes, or modifying existing ones, for each particular document type (*framework*). You can then apply the profiling attributes to content in **Author** mode to see how the profiling will affect the output.

Create Profiling Attributes

To create custom profiling attributes for a specific document type, follow these steps:

1. Make sure the attribute is already defined in the document DTD or schema before continuing with the procedure.
2. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text** .
3. In the **Profiling Attributes** section, press the **New** button.

   Step Result: The **Profiling Attribute** configuration dialog box is opened.

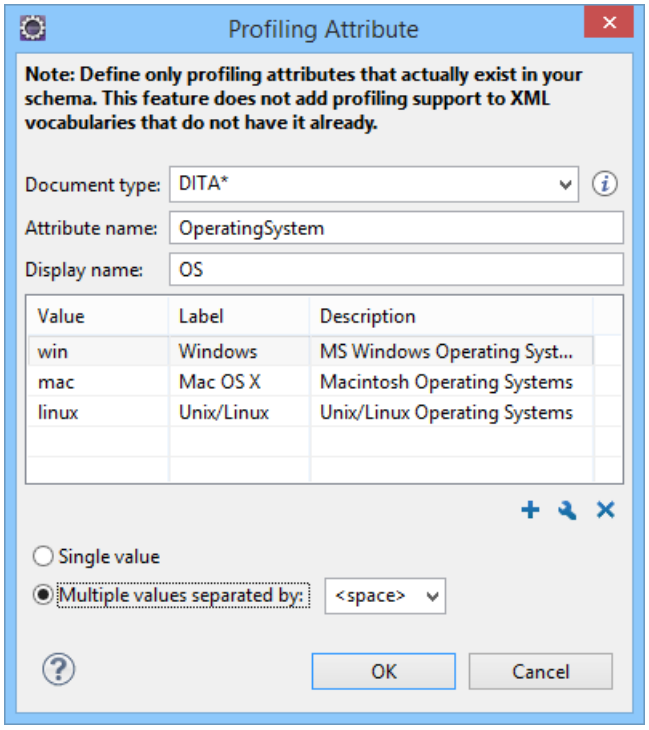


Figure 289: Profiling Attribute Dialog Box

4. Configure your profiling attributes as desired. The following options are available in this dialog box:

   Document type

   Select the document type (*framework*) for which you have defined profiling attributes.

   Tip: You can use the * or ? wildcards in this combo box. For example, `DITA*` would match any document type that starts with *"DITA"*. You can also specify multiple document types by using commas to separate them.

   Attribute name

   The name of the new profiling attribute.

   Display name

   This optional field is used for descriptive rendering in profiling dialog boxes.

   Attribute Values Table

   This table displays the values for the profiling attribute and allows you to configure them by using the following buttons at the bottom of the table:

New

Opens a dialog box that allows you to insert a new value. The fields that can be configured in this dialog box correspond to the columns in the table and are as follows:

- **Value** - The attribute value.
- **Label** - You can specify a label for the attribute value that will be rendered as its name in various components in **Author** mode (**Edit Profiling Attributes** dialog box, **Condition Set** dialog box, **Profiling** tab in the **Edit Properties** dialog box, **DITA Maps Manager**). If the **Label** is not specified, the **Value** will be used as its rendered name.
- **Description** - A description for the attribute value that will be displayed in this table.

Edit

Use this button or double-click an attribute value to modify it.

Delete

Removes the selected attributed value.

Single value

Select this option if you want the attribute to only accept a single value.

Multiple values separated by

Select this option if you want the attribute to accept multiple values, and you can choose the type of delimiter to use. You can choose between *space*, *comma*, and *semicolon*, or you can enter a custom delimiter in the text field. A custom delimiter must be supported by the specified document type. For example, the DITA document type only accepts spaces as delimiters for attribute values.

5. Click **OK** to confirm your selections and close the **Profiling Attributes** configuration dialog box.
6. Click **Apply** to save the profiling attribute.

Editing Existing Profiling Attributes

To modify an existing profiling attribute or its values, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Attributes** section, press the **Edit** button to modify an existing profiling attribute (you can also use **Delete** button to remove a profiling attribute or the **Up** and **Down** buttons to change their priority).

   Step Result: If you use the **Edit** button, the **Profiling Attributes** configuration dialog box is opened:
3. Modify your profiling attribute as desired.
4. To add or modify attribute values, use the **New**, **Edit**, or **Delete** buttons under the attribute values table.
5. Click **OK** to confirm your selections and close the **Profiling Attributes** configuration dialog box.
6. Click **Apply** to save your modifications.

Adding or Editing Profiling Attribute Values

There are several ways to add values to existing profiling attributes.

- Use the procedure in the Editing Existing Profiling Attributes section to edit an existing attribute and use the **Profiling Attribute** configuration dialog box to add, edit, or delete values for existing profiling attributes.
- You can add values directly to the existing profiling attributes in a document using the In-Place Attributes Editor in **Author** mode, the **Attributes** view, or in the source code in **Text** mode. However, this just adds them to the document and does not change the conditional text configuration. If you invoke the **Edit Profiling Attributes** action (from the contextual menu in **Author** mode) on the new value, the **Profiling Values Conflict** dialog box will appear and it includes an **Add these values to the configuration** action that will automatically add the new value to the particular profiling attribute. It also includes an **Edit the configuration** action that opens the **Profiling / Conditional Text** preferences page where you can edit the profiling configuration.

Note: If the **Allow contributing extra profiling attribute values** option is not selected in the **Profiling / Conditional Text** preferences page, the **Profiling Values Conflict** dialog box will never appear, so this second method will not be possible.

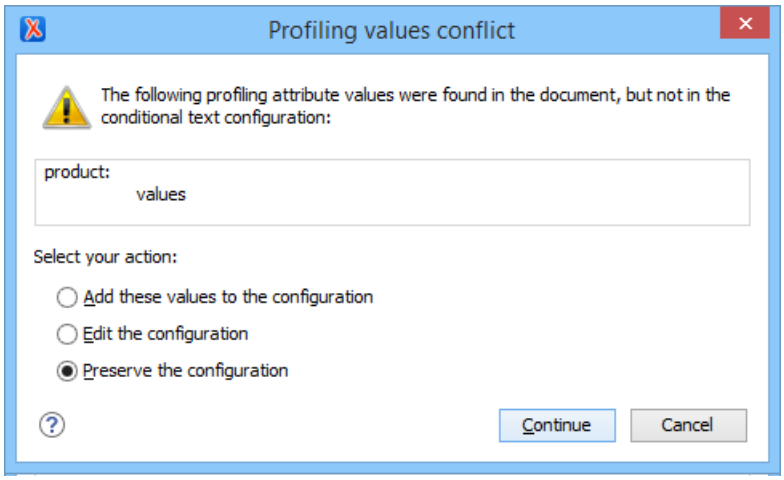


Figure 290: Profiling Values Conflict Dialog Box

Related Information:

Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Applying Profiling Attributes

Profiling attributes are applied on element nodes. You can apply profiling attributes on a text fragment (it will automatically be wrapped into a phrase-type element), on a single element, or on multiple elements in the same time. If there is no selection in your document, the profiling attributes are applied on the element at the cursor position.

To apply a profiling attribute to content in **Author** mode, follow these steps:

1. To apply a profiling attribute to content in **Author** mode, highlight the content and select **Edit Profiling Attributes** from the contextual menu. To profile an entire element, position the cursor inside the element, right-click, and select **Edit Profiling Attributes** (you can also right-click the element in the *breadcrumb* or **Outline** view).

   Step Result: The **Edit Profiling Attributes** dialog box is displayed and shows all the profiling attributes and their values, as defined for the particular document type (*framework*). If you have a large list of profiling attributes, you can use the text filter field to search for attributes or values, and you can expand or collapse attributes by using the **Expand All** / **Collapse All** buttons to the right of the text filter or the arrow button to the left of the profiling attribute name.

   The attributes and values that appear in the dialog box are determined as follows:

   - If you have defined profiling attribute values for the DITA document type in the **Profiling/Conditional Text** preferences page, those values are displayed in the dialog box.
   - Otherwise, a generic default set of profiling attributes and values are available.

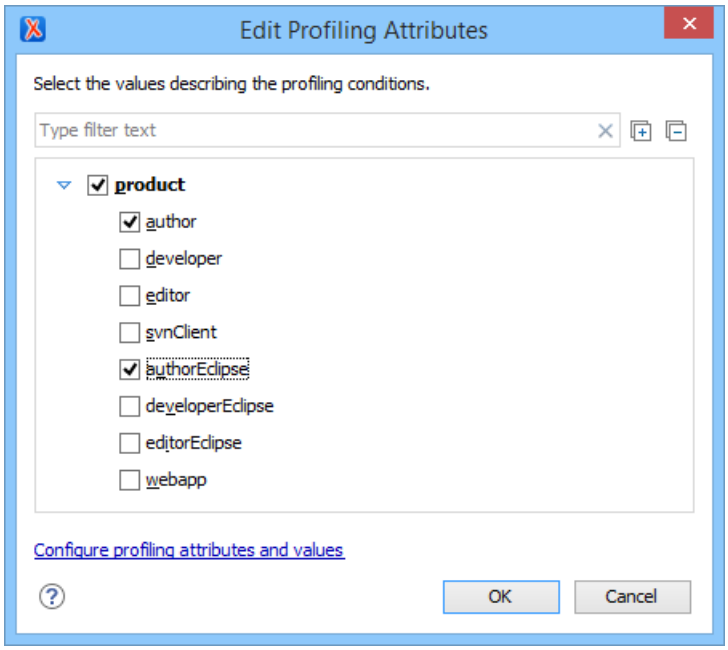


Figure 291: Edit Profiling Attributes Dialog Box

2. In the **Edit Profiling Attributes** dialog box, select the checkboxes that correspond to the attribute values you want to apply on the *document fragment*.
3. Click **OK** to finish the profiling configuration.

   Result: The attribute names and values selected in the **Edit Profiling Attributes** dialog box are set on the elements contained in the profiled fragment. If you only select a fragment of content (rather than the entire element), this fragment is wrapped in phrase-type elements in which the profiling attributes are set.

   If the **Show Profiling Attributes** option (available in the **Profiling / Conditional Text** toolbar menu) is selected, a green border is painted around profiled text in the **Author** mode and all profiling attributes set on the current element are listed at the end of the highlighted block. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

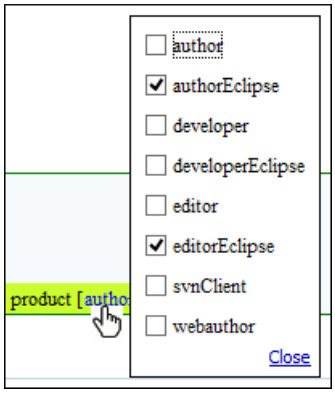


Figure 292: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Creating and Editing Profiling Condition Sets

Multiple profiling attributes can be aggregated into a profiling condition set that allows you to apply more complex filters on the document content. A *Profiling Condition Set* is a very powerful and convenient tool that can be used to preview the content that goes into the published output. For example, an installation manual available in both Windows and Linux variants can be profiled to highlight only the Linux procedures for more advanced users.

Create Profiling Condition Sets

To create a new profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, press the **New** button.

   Step Result: The **Condition Set** configuration dialog box is opened.

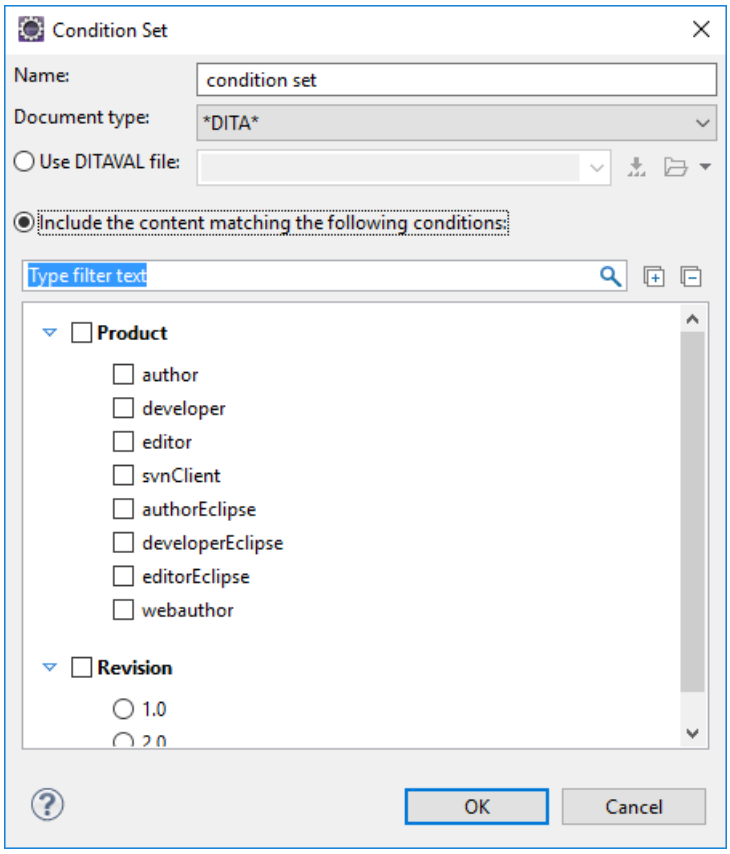


Figure 293: Condition Set Dialog Box

3. Configure your condition set as desired. The following options are available in this dialog box:

   Name

   The name of the new condition set.

   Document type

   Select the document type (*framework*) for which you have defined profiling attributes.

   Use DITAVAL file

   For DITA projects, select this option if you want the *Profiling Condition Set* to reference a DITAVAL file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Include the content matching the following conditions

You can select this option to define the combination of attribute values for your condition set by selecting the appropriate checkboxes for the values you want to be included in this particular condition set. If you have defined a lot of profiling attributes, you can use the **filter** text field to search for specific conditions.

4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save the condition set. All saved profiling condition sets are available in the **Profiling / Conditional Text** toolbar drop-down menu.

Editing Existing Profiling Condition Sets

To modify an existing profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, press the **Edit** button to modify an existing condition set (you can also use **Delete** button to remove a condition set or the **Up** and **Down** buttons to change their priority).

Step Result: If you use the **Edit** button, the **Condition Set** configuration dialog box is opened:

3. Modify your condition set as desired.
4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save your modifications.

Related Information:

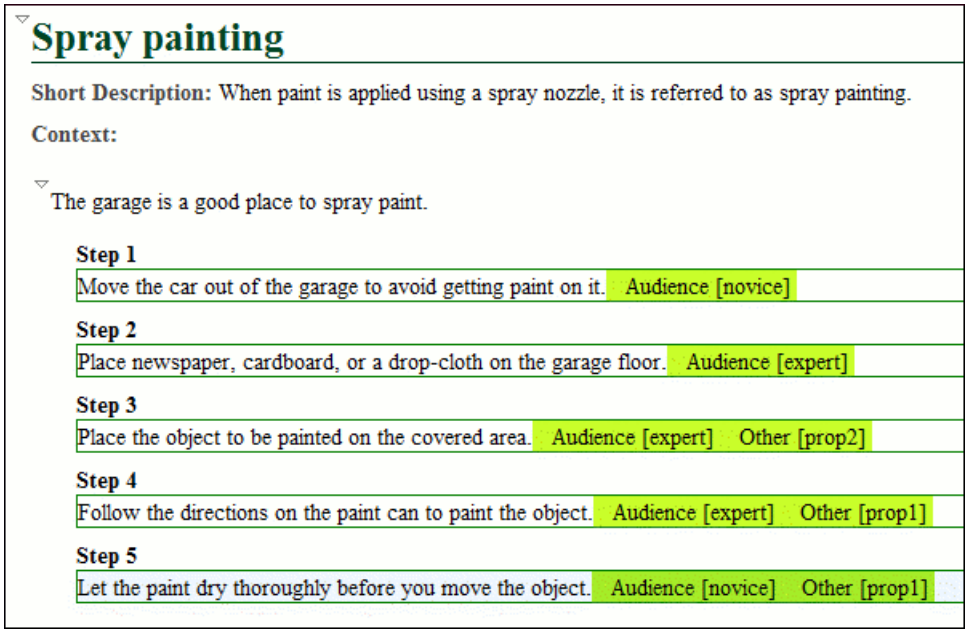
Applying Profiling Condition Sets on page 495
Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Showing and Filtering Profiled Content in Author Mode on page 497

Applying Profiling Condition Sets

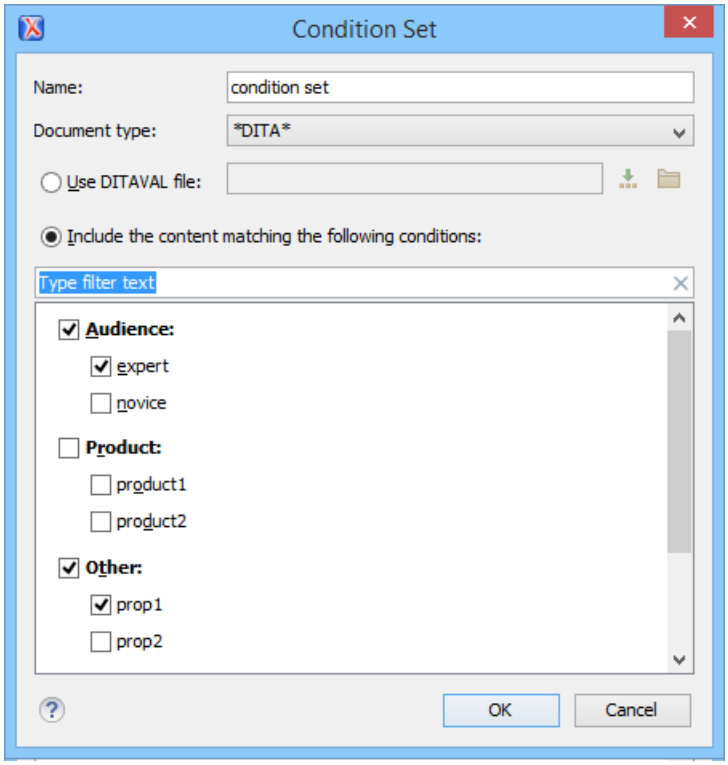
All defined Profiling Condition Sets are available as shortcuts in the **Profiling / Conditional Text** toolbar menu. Select a menu entry to apply the condition set. The filtered content is then grayed-out in the **Author** mode, **Outline** view, and **DITA Maps Manager** view (for DITA documents). An element is filtered-out when one of its attributes is part of the condition set and its value does not match any of the value covered by the condition set.

EXAMPLE:

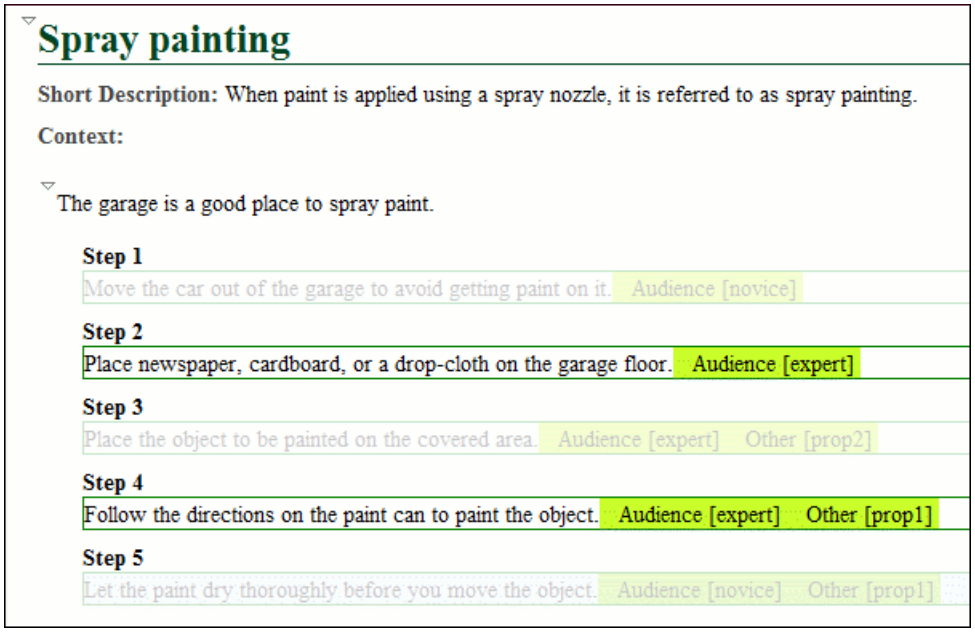
Suppose that you have the following document:



If you apply the following condition set, it means that you want to filter out the content to only include content written for an expert audience and content that has the *Other* attribute value of *prop1*.



This is how the document looks after you apply the condition set:



Related Information:

Creating and Editing Profiling Condition Sets on page 494
Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Showing and Filtering Profiled Content in Author Mode on page 497

Showing and Filtering Profiled Content in Author Mode

You can visualize the effects of profiled content in **Author** mode by using the options in the **Profiling/Conditional Text** drop-down menu that is located on toolbar. This drop-down menu includes the following filtering options:

Show Profiling Colors and Styles

Select this option to show colors and styles for profiled content in **Author** mode. You can configure the colors and styles or specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Colors and Styles** preferences page.

Show Profiling Attributes

Select this option to display the values of the profiling attributes at the end of profiled content in **Author** mode. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Attributes Rendering** preferences page.

Show Excluded Content

Controls whether the content filtered out by a particular condition set is hidden or grayed-out in **Author** mode and the **Outline** view. When this option is selected and a condition set is selected in this drop-down menu, the filtered content is grayed-out. If this option is not selected and a condition set is selected in this drop-down menu, the filtered content is hidden. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** preferences page.

Choose Condition Set (Available if more than 15 condition sets are defined)

This option is available if you have more than 15 conditions sets defined. It opens a dialog box that makes it easier to find and select condition sets that are not displayed in this drop-down menu.

List of Defined Condition Sets

Up to 15 defined condition sets are listed and you can toggle each one of them on to filter the content in **Author** mode to only show content that will appear in the output for that particular condition set. If there are more than 15 defined condition sets, the rest of them can be accessed in the **More** submenu or by using the **Choose Condition Set** option to access a dialog box that presents all of them.

Profiling Settings

Opens the **Profiling/Conditional Text** preferences page where you can add and edit profiling attributes and condition sets.

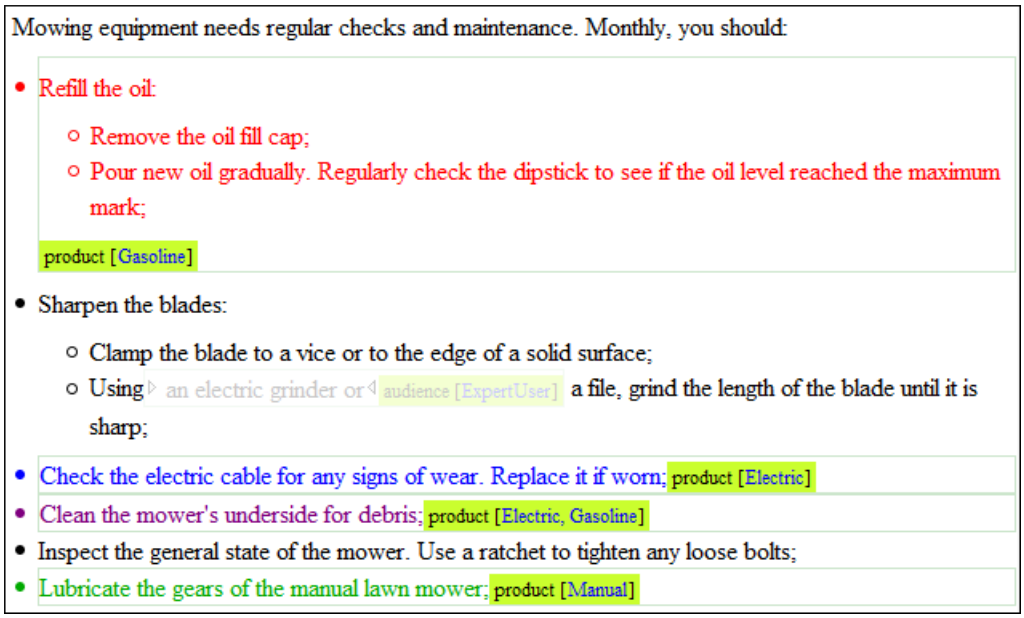


Figure 294: Example: Filtering Profiled Content in Author Mode

If the **Show Profiling Attributes** option is selected, a green border is painted around profiled text in the **Author** mode. Also, all profiling attributes set on the current element are listed at the end of the highlighted block and in

its tooltip message. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

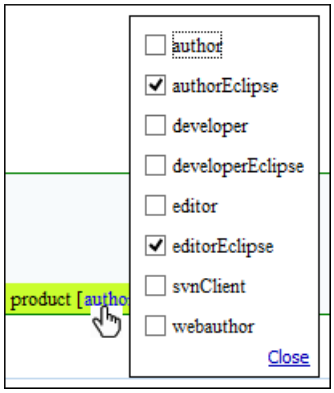


Figure 295: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495

Customizing Colors and Styles for Rendering Profiling in Author Mode

By applying profiling colors and styles, you can mark profiled content in **Author** mode so that you can instantly spot differences between multiple variants of the output. This allows you to preview the content that will go into the published output. The excluded text is grayed-out or hidden in **Author** mode, allowing you to easily recognize the differences.

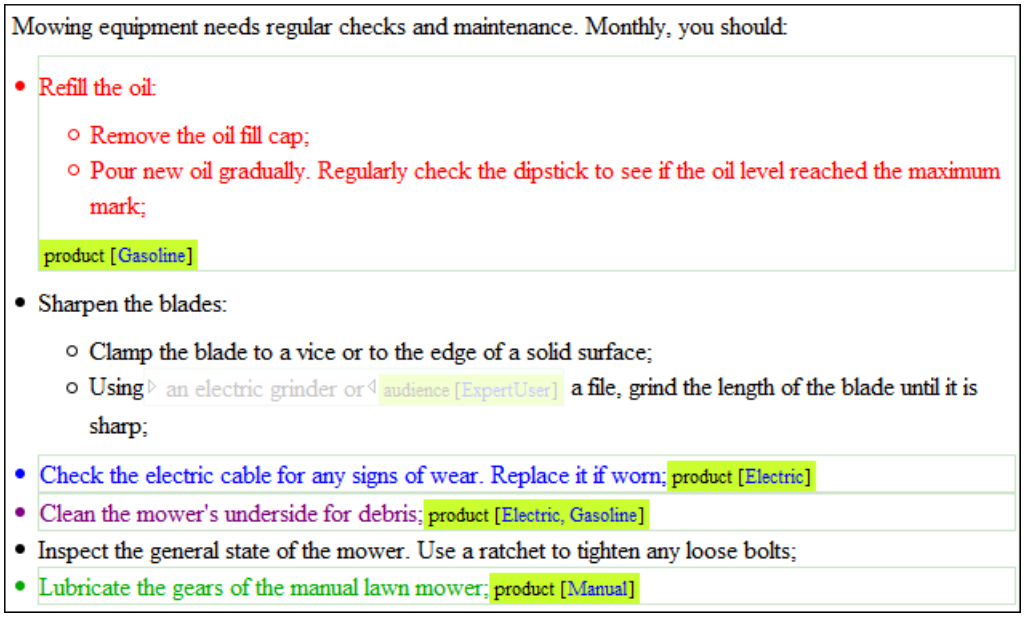


Figure 296: Example: Profiling Colors and Styles

Choosing the right style for a specific profiling attribute is a matter of personal taste, but be aware of the following:

- If the same block of text is profiled with two or more profiling attributes, their associated styles combine. Depending on the styling, this might result in an excessively styled content that may prove difficult to read or work with.
- It is recommended that you only profile the differences. There is no need to profile common content, since excessive profiling can visually pollute the document.

- A mnemonic associated with a style will help you instantly spot differences in the types of content.

Styling Profiling Attribute Values

To set colors and styles for profiling attribute values, follow these steps:

1. Select the **Show Profiling Colors and Styles** option from the **Profiling / Conditional Text** toolbar drop-down menu.
2. Select **Profiling Settings** from the **Profiling / Conditional Text** toolbar drop-down menu. This is a shortcut to the **Profiling/Conditional Text** preferences page.
3. Go to the **Colors and Styles** preferences page to configure the colors and styling for the profiling attributes.
4. Go to the **Attributes Rendering** preferences page to configure how you want the profiling attributes to appear in Oxygen XML Editor plugin.

Result: The styling is now applied in the **Author** editing mode and the **Outline** view. Also, to help you more easily identify the profiling you want to apply in the current context, the styling is applied in the **Edit Profiling Attributes** dialog box and in the inline form control pop up that allows you to quickly set the profiling attributes.

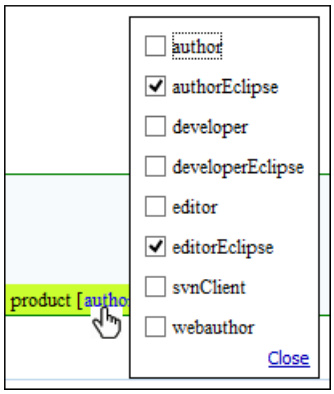


Figure 297: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes on page 490
Applying Profiling Attributes on page 492
Creating and Editing Profiling Condition Sets on page 494
Applying Profiling Condition Sets on page 495
Showing and Filtering Profiled Content in Author Mode on page 497

Adding Tables in Author Mode

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in various *frameworks* (DITA, DocBook, TEI, and XHTML). This opens the **Insert Table** dialog box. Each *framework* has a different set of options that are available in this dialog box for configuring the properties of the tables. In all cases, Oxygen XML Editor plugin includes some general editing actions for configuring tables in **Author** mode.

This section explains those general actions and the various configuration options and layouts for tables that are inserted in the most commonly used document types.

Editing Tables in Author Mode

Oxygen XML Editor plugin provides support for editing data in a tabular form. A variety of features and operations are available for editing tables in **Author** mode and they include the following:

Adjusting Column Width

To adjust the width of a column or table, drag the border of the column or table. The changes you make to a table are committed into the source document. You can also manage table width and column width specifications from the source document, and some types of tables include a **colspecs** section that appears above the table in **Author** mode that allows you to easily configure some column specifications (such as column width). These

column width specifications are supported in fixed, dynamic, and proportional dimensions. The predefined DITA, DocBook, and XHTML *frameworks* support this feature. The layout of the tables for these document types takes into account the table width and the column width specifications particular to them.

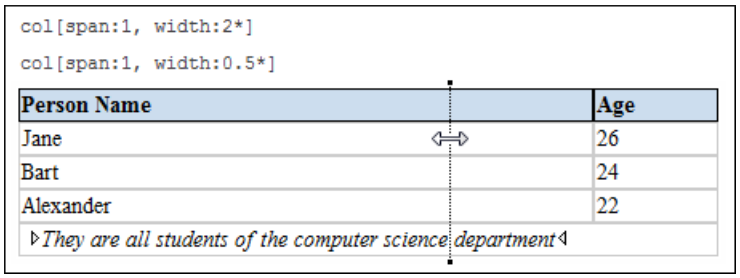


Figure 298: Resizing a Table Column in Author Mode

Selecting Columns and Rows

To select a row or a column of a table, place the mouse cursor above the column or in front of the row you want to select, then click. When hovering the mouse cursor in front of rows or above column headers, the cursor changes to for row selection and to for column selection and that specific row or column is highlighted.

You can use the **Ctrl** and **Shift** keys to select multiple rows.

Selecting Cells

To select a cell in a table, press and hold the **Ctrl** key and click anywhere inside the cell. You can also use the **Ctrl** and **Shift** keys to select multiple cells or to deselect cells from a selection. Alternatively, you can click the left corner of a cell (right corner if you are editing a RTL document) to select it. The cursor changes to when you hover over the corner of the cell.

You can also select multiple rectangular blocks of cells by using your mouse to select a cell and drag it to expand the selection.

Drag and Drop

You can use the drag and drop action to edit the content of a table. You can select a column and drag it to another location in the table you are editing. When you drag a column and hover the cursor over a valid drop position, Oxygen XML Editor plugin decorates the target location with bold rectangles. The same drag and drop action is also available for entire rows or columns by hovering the mouse cursor in front of rows or above column headers, then selecting the row or column and dragging them to the desired location.

Copy/Cut and Paste

In Oxygen XML Editor plugin, you can copy/cut entire rows or columns of the table you are editing and paste the copied columns or rows inside the same table or inside other tables. You can also use the copy or cut actions for tables located in other documents. If you paste a row or column into non-table content, Oxygen XML Editor plugin introduces a new table that contains the fragments of the copied row or column content.

For copied columns, the fragments are introduced starting with the header of the column. Also, if the copied column is from a *CALS* table, Oxygen XML Editor plugin preserves column width information. This information is then used when you paste the column into another *CALS* table.

For copied cells, when pasting them into another cell without a selection (the cursor is just placed in the new cell), the copied cells are pasted while preserving their initial order and spacing. If pasting them into a selection of cells, first the content of the selected cells is deleted, then the copied cells are pasted with their initial order and spacing preserved and if there are more cells in the selection than in the copied content, the pasting will repeat the copied cells until the end of the selection.

Deleting Content

To delete the content of a cell, select the cell and press the **Delete** or **Backspace** key on your keyboard. If you press **Delete** or **Backspace** again, the selected table structure will also be removed.

To delete an entire row or column, place the cursor inside the row or column (or select it) and use the **Delete Row(s)** or **Delete Column(s)** actions from the toolbar or contextual menu. This will delete both the content and the table structure for the current row or column.

To delete a selection of multiple rows or columns, select them and use the **Delete Row(s)** or **Delete Column(s)** actions from the toolbar or contextual menu. This will delete both the content and the table structure for all rows or columns that exist in the current selection.

Navigating Cells

Along with the normal mouse navigation, you can also navigate between cells by using the arrow keys on your keyboard. By default, when using the arrow keys to navigate between table cells, the cursor jumps from one cell to another. However, if the **Quick navigation in tables** option is not selected in the **Cursor Navigation** preferences page, using the arrow keys to navigate between table cells will cause the cursor to navigate between XML nodes, rather than jumping from cell to cell.

Related Information:

Adding Tables in DocBook on page 501
Adding Tables in DITA Topics on page 509
Adding Tables in XHTML Documents on page 519

Adding Tables in DocBook

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a DocBook document.

DocBook supports two types of tables:

- **CALS** table model - This is used for more advanced functionality.
- **HTML** table model - This is used for inserting a formal (captioned) HTML table.

Inserting a CALS Table Model in DocBook

To insert a *CALS* table model in DocBook documents, select the **Insert Table** action on the toolbar or from the contextual menu. The **Insert Table** dialog box appears. Select **CALS** for the table **Model**. This model allows you to configure a few more properties than the *HTML* model.

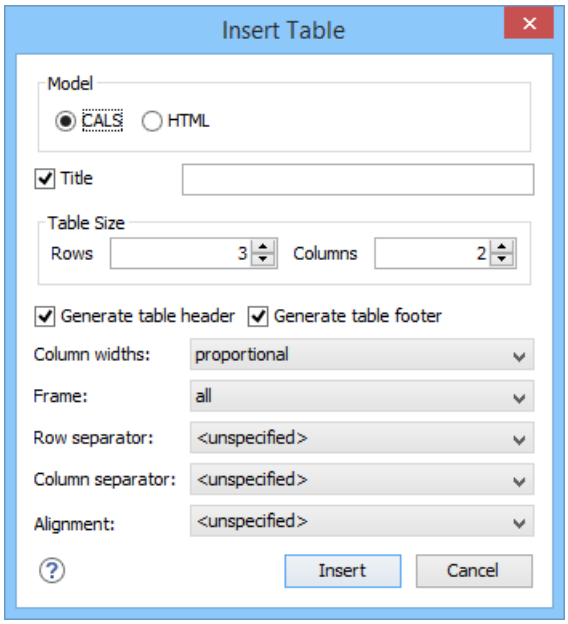


Figure 299: Insert Table Dialog Box - CALS Model

The dialog box allows you to configure the following options when you select the **CALS** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `colwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `colwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `colwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `colwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width (`colwidth` attribute). Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the **colspecs** (column specifications) section above the table or in **Text** mode. The following units are allowed: `pt` (points), `cm` (centimeters), `mm` (millimeters), `pi` (picas), `in` (inches).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook CALS table specifications.

Row separator

Specifies whether or not to include row separators (`rowsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Column separator

Specifies whether or not to include column separators (`colsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for DocBook documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a CALS table is inserted into your document at the current cursor position.

When you insert a CALS table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

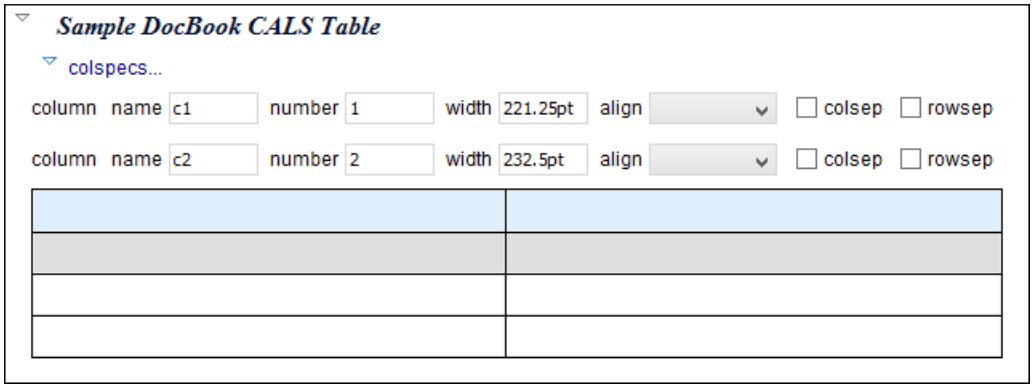


Figure 300: CALS Table in DocBook

Inserting an HTML Table Model

To insert an *HTML* table model in DocBook documents, select the **Insert Table** action on the toolbar or from the contextual menu. The **Insert Table** dialog box appears. Select **HTML** for the table **Model**.

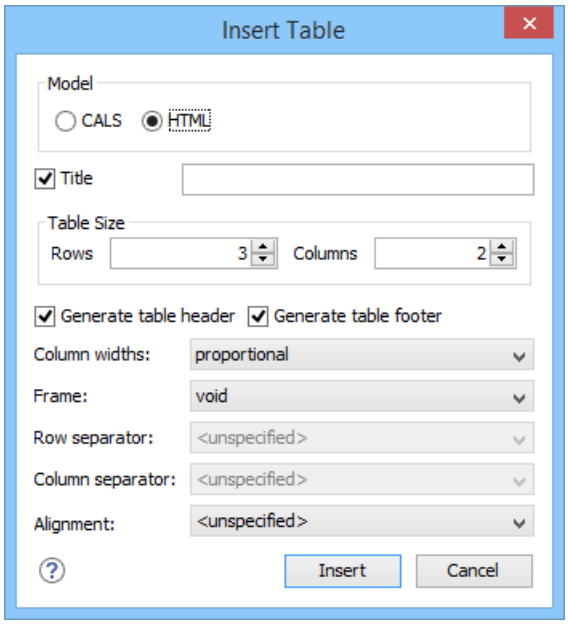


Figure 301: Insert Table Dialog Box - Simple Model

The dialog box allows you to configure the following options when you select the **HTML** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`width` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `width` attribute (in a `col` element) with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `width="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `width` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `width` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the section above the table or in **Text** mode. In addition to the standard pixel, percentage, and relative values, this attribute also allows the special form “0*” (zero asterisk), which means that the width of the each column in the group should be the minimum width necessary to hold the contents.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook HTML table specifications.

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for DocBook documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, an HTML style of table is inserted into your document at the current cursor position.

When you insert an HTML table, you see a section above the table that allows you to easily configure some properties without opening the **Table Properties** dialog box. Although this section appears as part of the **Author** mode, it will not appear in your output. It is just there to make it easier to adjust how the columns of your table are formatted.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**).

You can also use the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or contextual menu to modify many of the properties of the table.

Also, remember that underneath the visual representation, both table models are really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

DocBook Table Layouts

The DocBook *framework* supports the following two table model layouts:

- *CALS* table model
- *HTML* table model

CALS Table Model Layout

The **CALS** table model allows for more flexibility and table customization than other models. When choosing a **CALS** table model from the **Insert Table** dialog box, you have access to more configurable properties. The layout of a **CALS** table includes a **colspecs** section that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`colwidth` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

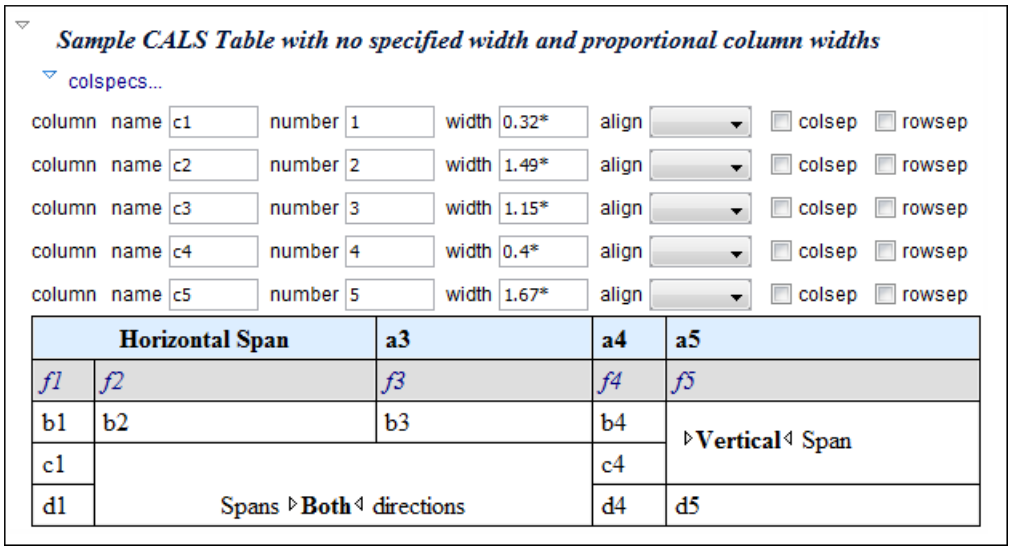


Figure 302: CALS Table in DocBook

HTML Table Model Layout

Choosing an **HTML** table model from the **Insert Table** dialog box in a DocBook document inserts a formal (captioned) HTML table. The layout of an *HTML* table includes a section above the table that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`width` attribute) or the text alignment (`align` attribute). Although these properties appear as part of the **Author** mode, they will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

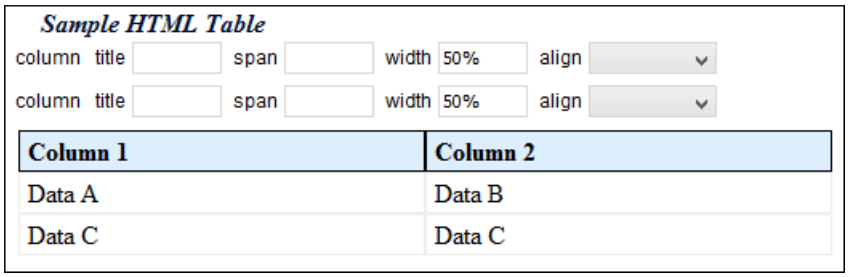


Figure 303: HTML Table in DocBook

Pasting Tables in DocBook

Tables that are pasted into a DocBook file are automatically converted to the *CALS* model. If you want to overwrite this behavior and instruct Oxygen XML Editor plugin to convert them to *HTML* tables, set the `docbook.html.table` parameter to 1. You can find this parameter in the following stylesheet:

- *`[OXYGEN_INSTALL_DIR]`*`/frameworks/docbook/resources/xhtml2db5Driver.xsl` for DocBook 5
- *`[OXYGEN_INSTALL_DIR]`*`/frameworks/docbook/resources/xhtml2db4Driver.xsl` for DocBook 4

Table Validation in DocBook

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations. The types of errors that may be reported for DocBook table layout problems include:

CALS Tables

- A row has fewer cells than the number of columns detected from the table `cols` attribute.
- A row has more cells than the number of columns detected from the table `cols` attribute.
- A cell has a vertical span greater than the available rows count.
- The number of `colspecs` is different than the number of columns detected from the table `cols` attribute.

- The number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- The value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- The `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

HTML Tables

- A row has fewer cells than the number of table columns.
- The value of the `colspan`, `rowspan`, or `span` attributes are not numeric.
- A cell has a vertical span greater than the available rows count.

Editing Table Properties in DocBook

You can edit the structure of an existing table using the table buttons on the toolbar (or from the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**).

You can use the **Table Properties (Ctrl + T (Command + T on OS X))** action to modify many of the properties of the table. You can also adjust some of the properties in the specification section above the table.

The **Table properties** dialog box allows you to set specific properties to the table elements. The options that are available depend on the context and location within the table in which the action was invoked.

Note: Some properties allow the following special values, depending on the context and the current properties or values:

- **<not set>** - Use this value if you want to remove a property.
- **<preserve>** - If you select multiple elements that have the same property set to different values, you can choose this value to keep the values that are already set. In some cases it can also be used to keep the current non-standard value for a particular property.

Edit Table Properties for a CALS Table Model

For a **CALS** table model, the **Table properties** dialog box includes four tabs of options:

- **Table** tab - The options in this tab apply to the entire table.
- **Row** tab - The options in this tab apply to the current row or selection of multiple rows. A message at the bottom of the tab tells you how many rows will be affected.
- **Column** tab - The options in this tab apply to the current column or selection of multiple columns. A message at the bottom of the tab tells you how many columns will be affected.
- **Cell** tab - The options in this tab apply to the current cell or selection of multiple cells. A message at the bottom of the tab tells you how many cells will be affected.

The options in four tabs include a **Preview** pane that shows a representation of the modification.

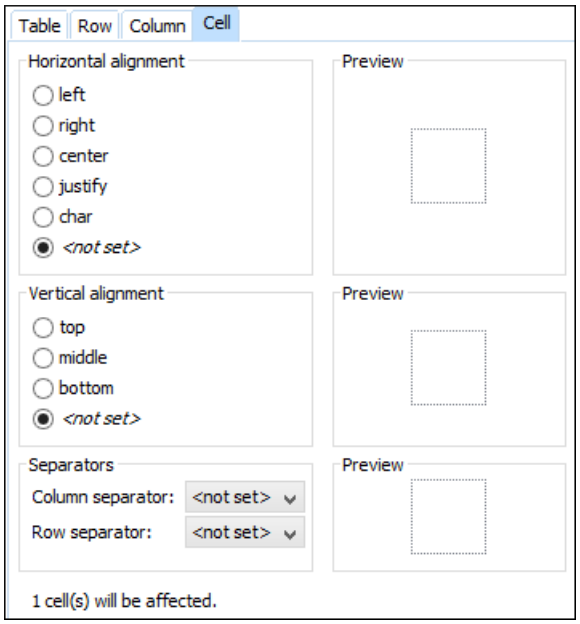


Figure 304: Table Properties Dialog Box with Cell Tab Selected (DocBook CALS Table Model)

The options in the four tabs include the following:

Horizontal alignment (Available in the Table, Column, and Cell tabs)

Specifies the horizontal alignment of text within the current table/column/cell or selection of multiple columns/cells (`align` attribute). The allowed values are as follows:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Vertical alignment (Available in the Row and Cell tabs)

Specifies the vertical alignment of text within the current row/cell or selection of multiple rows/cells (`valign` attribute). The allowed values are as follows:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.

Column separator (Available in the Table, Column, and Cell tabs)

Specifies whether or not to include column separators (borders/grid lines) in the form of the `colsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Row separator (Available in all four tabs)

Specifies whether or not to include row separators (borders/grid lines) in the form of the `rowsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook CALS table specifications.

Row type (Available in the Row tab only)

Allows you change the row to a header, body, or footer type of row (within a `thead`, `tbody`, or `tfoot` attribute).

Edit Table Properties for an HTML Table Model

For an **HTML** table model, the **Table properties** dialog box includes four tabs of options (**Table**, **Row**, **Column**, and **Cell**) and the options include a **Preview** pane that shows a representation of the modification.

The options in the four tabs include the following:

Frame (Available only in the Table tab)

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in the DocBook HTML table specifications.

Row type (Available in the Row tab only)

Allows you change the row to a header, body, or footer type of row (within a `thead`, `tbody`, or `tfoot` attribute).

Horizontal alignment (Available in the Row, Column, and Cell tabs)

Specifies the horizontal alignment for the text in the current row/column/cell or selection of multiple rows/columns/cells (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Vertical alignment (Available in the Row, Column, and Cell tabs)

Specifies the vertical alignment for the text in the current row/column/cell or selection of multiple rows/columns/cells (`valign` attribute). The allowed values are:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.
- **baseline** - Sets the row so that all the table data share the same baseline. This often has the same effect as the `bottom` value. However, if the fonts are different sizes, the `baseline` value often makes the table look better.

Related Information:

Editing Tables in Author Mode on page 499

Adding Tables in DITA Topics

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a DITA topic. By default, DITA supports four types of tables:

- DITA *Simple* table model - This is the most commonly used model for basic tables.
- CALS table model (OASIS Exchange Table Model) - This is used for more advanced functionality.
- DITA *Choice* table model - This is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding.
- DITA *Properties* table model - This is used in DITA Reference documents to describe a property (for example, its type, value, and description).

If you are using a specialized DITA vocabulary, it may contain specialized versions of these table models.

Since DITA is a structured format, you can only insert a table in places in the structure of a topic where tables are allowed. The Oxygen XML Editor plugin toolbar provides support for entering and editing tables. It also helps to indicate where you are allowed to insert a table or its components by disabling the appropriate buttons.

Inserting a Simple Table Model

To insert a **Simple** DITA table, select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

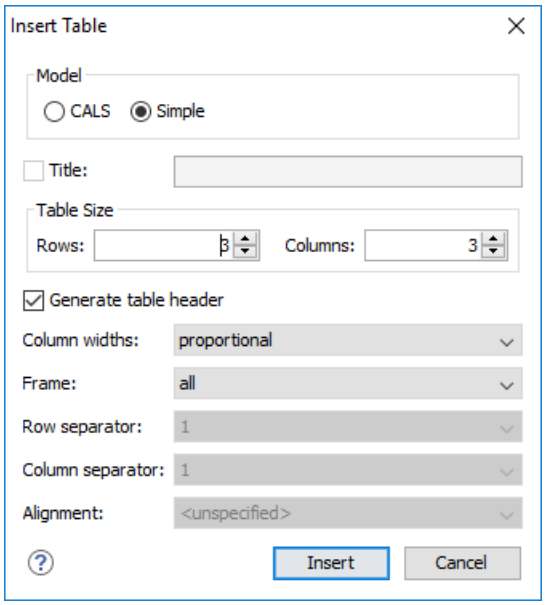


Figure 305: Insert Table Dialog Box - Simple Model

The dialog box allows you to configure the following options when you select the **Simple** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a simple table is inserted into your document at the current cursor position.

Inserting a CALS Table Model (OASIS Exchange Table)

To insert an OASIS Exchange Table (**CALS**), select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **CALS** for the table **Model**. This model allows you to configure more properties than the *Simple* model.

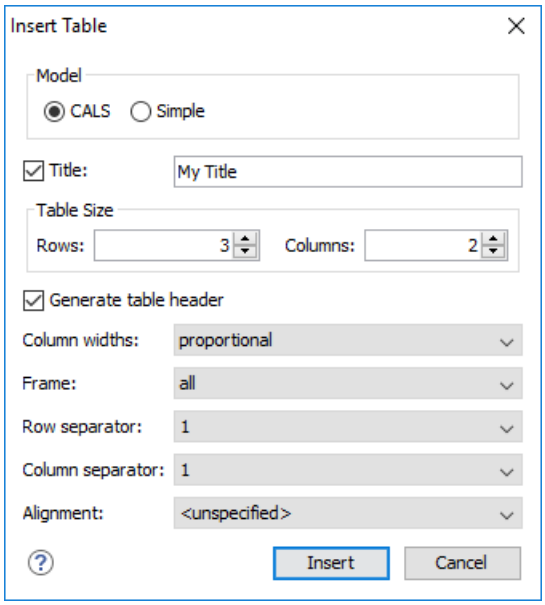


Figure 306: Insert Table Dialog Box - CALS Model

The dialog box allows you to configure the following options when you select the **CALS** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `colwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `colwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `colwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `colwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width (`colwidth` attribute). Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the **colspecs** (column specifications) section above the table or in **Text** mode. The following units are allowed: `pt` (points), `cm` (centimeters), `mm` (millimeters), `pi` (picas), `in` (inches).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row separator

Specifies whether or not to include row separators (`rowsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Column separator

Specifies whether or not to include column separators (`colsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a CALS table is inserted into your document at the current cursor position.

When you insert a CALS table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

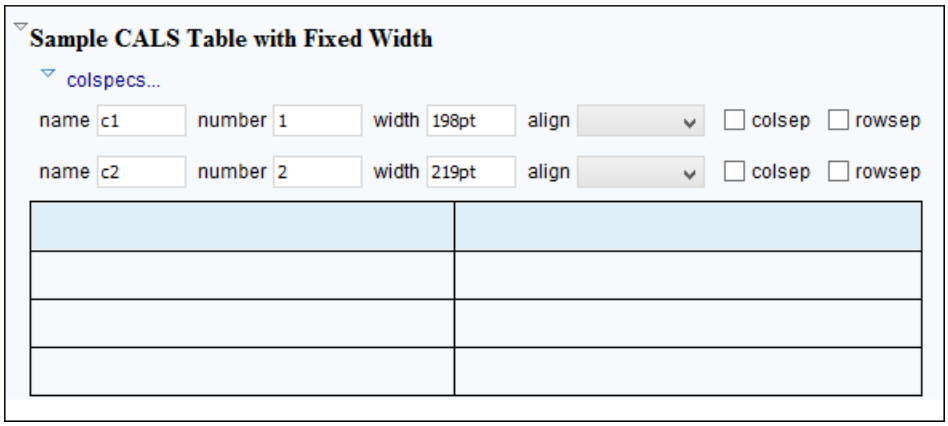


Figure 307: CALS Table in DITA

Inserting a Choice Table Model

To insert a **Choice** table within a `step` element in a DITA Task document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **choicetable** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

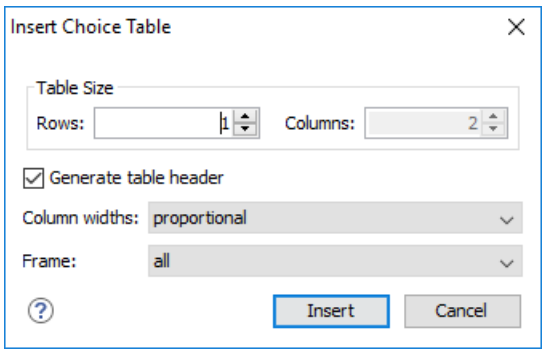


Figure 308: Insert Table Dialog Box - Choice Model

The dialog box allows you to configure the following options when you insert a *Choice* table model within a DITA Task:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in

Author mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Choice* table is inserted into your DITA Task document at the current cursor position (within a `step` element).

Inserting a Properties Table Model

To insert a **Properties** table within a `refbody` element in a DITA Reference document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **properties(wizard)** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Properties** for the table **Model**.

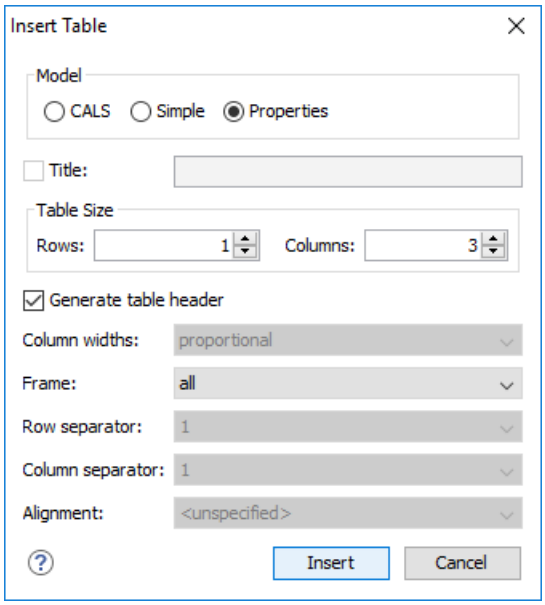


Figure 309: Insert Table Dialog Box - Properties Model

The dialog box allows you to configure the following options when you insert a *Properties* table model within a DITA Reference:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Properties* table is inserted into your DITA Reference document at the current cursor position (within a `refbody` element).

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). See the DITA documentation for a full explanation of these attributes.

You can also use the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or contextual menu (or **DITA** menu) to modify many of the properties of the table.

Also, remember that underneath the visual representation, both table models are really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

Related Information:

Editing Tables in Author Mode on page 499

DITA Table Layouts

Depending on the context, DITA accepts the following table layouts:

- *CALS* table model
- *Simple* table model
- *Choice* table model
- *Properties* table model

CALS Table Model Layout

The **CALS** table model allows for more flexibility and table customization than other models. When choosing a **CALS** table model from the **Insert Table** dialog box, you have access to more configurable properties. The layout of a **CALS** table includes a **colspecs** section that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`colwidth` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

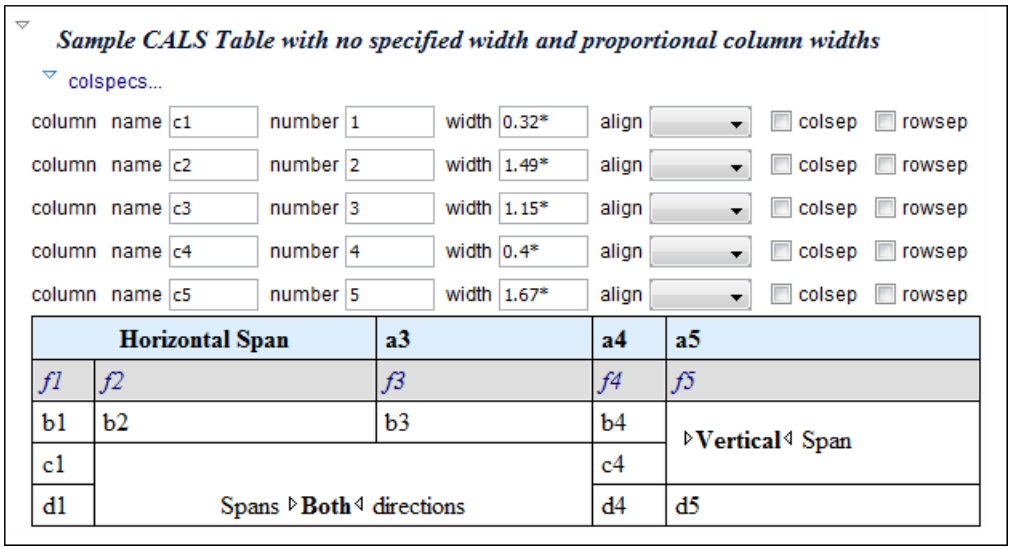


Figure 310: CALS Table in DITA

Simple Table Model Layout

When choosing a **Simple** table model from the **Insert Table** dialog box, you only have access to configure a few properties. For example, you can choose the number of rows and columns, specify values for frames, and choose from a few types of properties for the column width. The layout of this type of table is very simple, as the name suggests.

Header 1	Header 2
Column 1	Column 2

Figure 311: DITA Simple Table

Choice Table Model Layout

A **Choice** table model is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding. The `choicetable` element is a useful device for documenting options within a single step of a task. You can insert *Choice* tables in DITA Task documents either by selecting **choicetable** from the *Content Completion Assistant* (within a `step` element) or by using the **Insert Table** action on the toolbar or from the contextual menu). The options and layout of a *Choice* table is similar to the *Simple* table model.

Option	Description
Opt A	
Opt B	
Opt C	

Figure 312: DITA Choice Table

Properties Table Model Layout

A **Properties** table model is used within a `refbody` element in a DITA Reference document to describe a property (for example, its type, value, and description). You can insert *Properties* tables in DITA Reference documents either by selecting **properties(wizard)** from the *Content Completion Assistant* (within a `refbody` element) or by using the **Insert Table** action on the toolbar (or from the contextual menu) and selecting **Properties** for the **Model**. The layout of a *Properties* table is very simple. It allows for a maximum of 3 columns (typically for property type, value, and description) and the only options available are for whether or not you want a header row and for specifying frames (borders).

Property Type	Property Value	Property Description
A	B	C

Figure 313: DITA Properties Table

Table Validation in DITA

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations.

When you validate a *DITA map* with the **Validate and Check for Completeness** action, if the **Report table layout problems** option is selected in the **DITA Map Completeness Check** dialog box, table layout problems will be reported in the validation results. The types of errors that may be reported for DITA table layout problems include:

CALS Tables

- A row has fewer cells than the number of columns detected from the table `cols` attribute.
- A row has more cells than the number of columns detected from the table `cols` attribute.
- A cell has a vertical span greater than the available rows count.
- The number of `colspecs` is different than the number of columns detected from the table `cols` attribute.
- The number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- The value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- The `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

Simple or Choice Tables

- A row has fewer cells than the number of table columns.

Editing Table Properties in DITA

To customize the look of a table in DITA, place the cursor anywhere in a table and invoke the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or the **Table** submenu of the contextual menu (or **DITA** menu). This opens the **Table properties** dialog box.

The **Table properties** dialog box allows you to set specific properties to the table elements. The options that are available depend on the context and location within the table in which the action was invoked.

Note: Some properties allow the following special values, depending on the context and the current properties or values:

- **<not set>** - Use this value if you want to remove a property.
- **<preserve>** - If you select multiple elements that have the same property set to different values, you can choose this value to keep the values that are already set. In some cases it can also be used to keep the current non-standard value for a particular property.

Edit Table Properties for a CALS Table Model

For a **CALS** table model, the **Table properties** dialog box includes four tabs of options:

- **Table** tab - The options in this tab apply to the entire table.
- **Row** tab - The options in this tab apply to the current row or selection of multiple rows. A message at the bottom of the tab tells you how many rows will be affected.
- **Column** tab - The options in this tab apply to the current column or selection of multiple columns. A message at the bottom of the tab tells you how many columns will be affected.
- **Cell** tab - The options in this tab apply to the current cell or selection of multiple cells. A message at the bottom of the tab tells you how many cells will be affected.

The options in four tabs include a **Preview** pane that shows a representation of the modification.

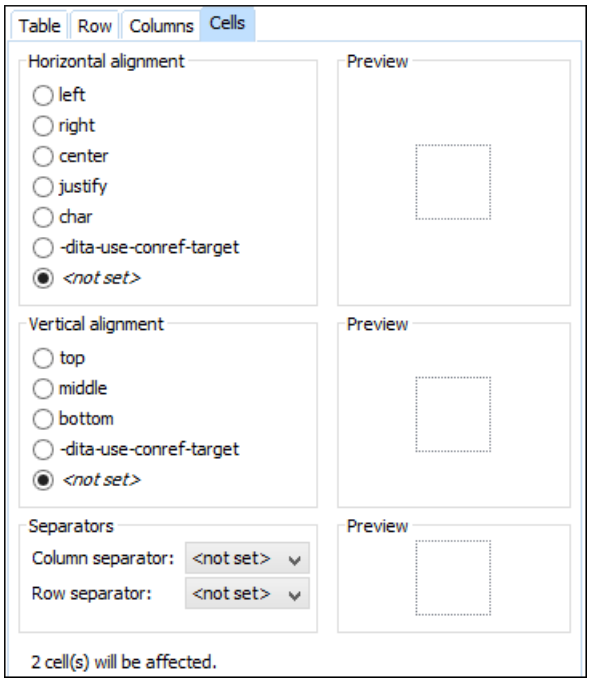


Figure 314: Table Properties Dialog Box with Cell Tab Selected (DITA CALS Table Model)

The options in the four tabs include the following:

Horizontal alignment (Available in the Table, Column, and Cell tabs)

Specifies the horizontal alignment of text within the current table/column/cell or selection of multiple columns/cells (`align` attribute). The allowed values are as follows:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Vertical alignment (Available in the Row and Cell tabs)

Specifies the vertical alignment of text within the current row/cell or selection of multiple rows/cells (`valign` attribute). The allowed values are as follows:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Column separator (Available in the Table, Column, and Cell tabs)

Specifies whether or not to include column separators (borders/grid lines) in the form of the `colsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Row separator (Available in all four tabs)

Specifies whether or not to include row separators (borders/grid lines) in the form of the `rowsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Frame (Available only in the Table tab)

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Edit Table Properties for a Simple, Choice, or Properties Table Model

For a *Simple*, *Choice*, *Properties* table model, the **Table properties** dialog box only allows you to edit a few options.

Table tab

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row tab (not available for *Properties* tables)

Row type

Allows you change the row to a body or header type of row.

Related Information:

Adding Tables in DITA Topics on page 509
Editing Tables in Author Mode on page 499

Adding Tables in XHTML Documents

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in an XHTML document. This action opens the **Insert Table** dialog box.

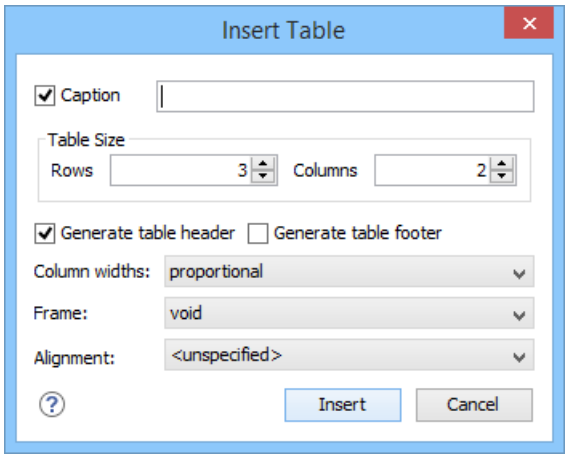


Figure 315: Insert Table Dialog Box in XHTML

The dialog box allows you to configure the following options:

Caption

If this checkbox is selected, you can specify a title (caption) for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Generate table footer

If selected, an extra row will be inserted at the bottom of the table to be used as the table footer.

Column widths

Allows you to specify the type of properties for column widths (`width` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `width` attribute (in a `col` element) with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `width="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `width` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `width` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the section above the table or in **Text** mode. In addition to the standard pixel, percentage, and relative values, this attribute also allows the special form “0*” (zero asterisk), which means that the width of the each column in the group should be the minimum width necessary to hold the contents.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. There are a variety of allowed values, as specified in HTML specifications.

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.

- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

Note: The options in the **Insert Table** dialog box for XHTML documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, an HTML style of table is inserted into your XHTML document at the current cursor position.

When you insert an HTML table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). Also, remember that underneath the visual representation, the table is really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

XHTML Table Layout

When you insert a table in an XHTML document, an HTML type of table is added. The layout of an *XHTML* table includes a **colspecs** section that allows you to easily configure some properties. For example, you can change the value of column widths (`width` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

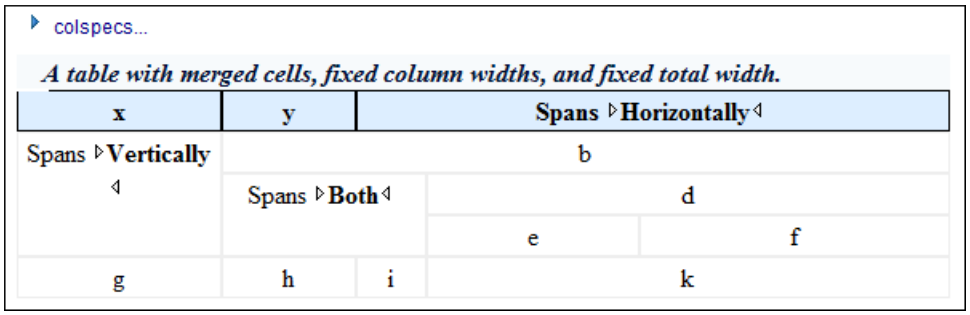


Figure 316: Table Layout in XHTML Documents

Table Validation in XHTML

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations. The types of errors that may be reported for XHTML table layout problems include:

HTML Tables

- A row has fewer cells than the number of table columns.
- The value of the `colspan`, `rowspan`, or `span` attributes are not numeric.
- A cell has a vertical span greater than the available rows count.

Adding Tables in TEI Documents

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a TEI document. This action opens the **Insert Table** dialog box.

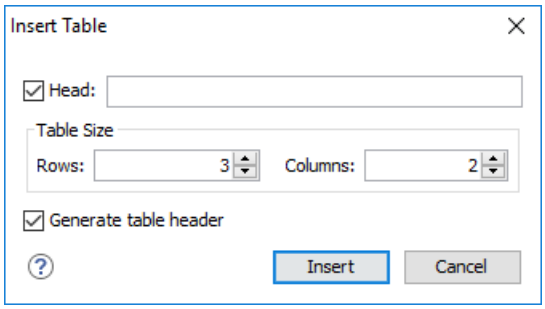


Figure 317: Insert Table Dialog Box in TEI

The dialog box allows you to configure the following options:

Head

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Note: The options in the **Insert Table** dialog box for TEI documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a simple table is inserted into your TEI document at the current cursor position.

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). Also, remember that underneath the visual representation, the table is really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

Sorting Content in Tables and List Items

Oxygen XML Editor plugin offers support for sorting the content of tables and list items of ordered and unordered lists.

What do you want to do?

- Sort an entire table.
- Sort a selection of rows in a table.
- Sort a table that contains cells merged over multiple rows.
- Sort list items.

Sorting a Table

To sort rows in a table, select the entire table (or specific rows) and use the **Sort** action from the main toolbar or the contextual menu. This opens the **Sort** dialog box.

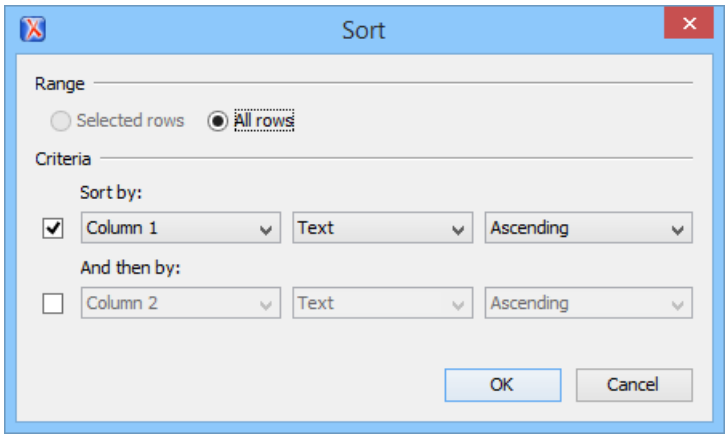


Figure 318: Sort Dialog Box

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire table or only a selection of its rows.

Note: When you invoke the sorting operation over an entire table, the **Selected rows** option is disabled.

The **Criteria** section specifies the sorting criteria (a maximum of three sorting criteria are available), defined by the following:

- A name, which is collected from the column heading.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

The sort criteria is automatically set to the column where the cursor is located at the time when the sorting operation is invoked.

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Sorting a Selection of Rows

To sort a selection of rows in a table, select the rows that you want to sort and either right-click the selection and choose **Sort**, or click **Sort** on the main toolbar. This opens the **Sort** dialog box.

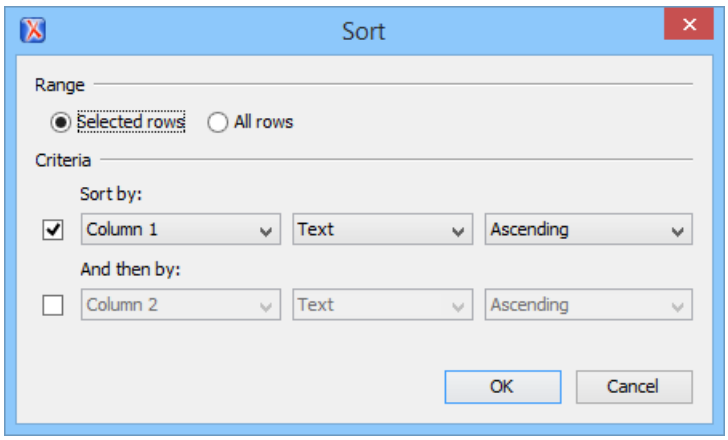


Figure 319: Sort Selected Rows

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire table or only a selection of its rows.

The **Sort** dialog box also allows you to apply the sorting operation to the entire table, using the **All rows** option.

The **Criteria** section specifies the sorting criteria (a maximum of three sorting criteria are available), defined by the following:

- A name, which is collected from the column heading.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

The sort criteria is automatically set to the column where the cursor is located at the time when the sorting operation is invoked.

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Sort Using Multiple Criteria

You can also sort an entire table or a selection of its rows based on multiple sorting criteria. To do so, select the rest of boxes in the **Criteria** section of the **Sort** dialog box, configure the applicable items, and click **OK** to complete the sorting operation.

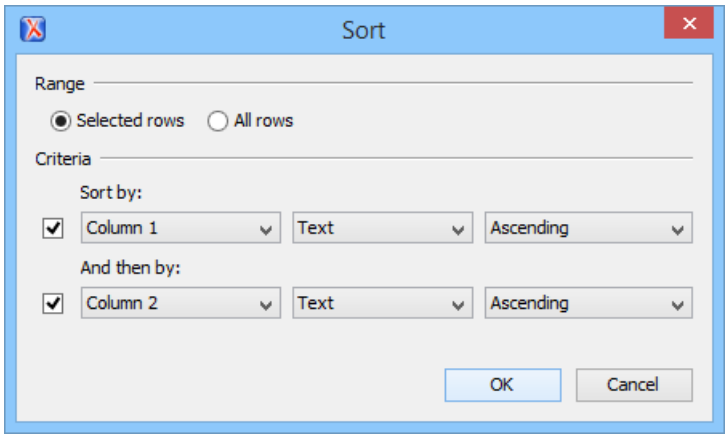


Figure 320: Sorting Based on Multiple Criteria

Sorting a Table that Contains Merged Cells

If a table contains cells that span over multiple rows, you can not perform the sorting operation over the entire table. Still, the sorting mechanism works over a selection of rows that do not contain *rowspans*.

Note: For this type of table, the **Sort** dialog box keeps the **All rows** option disabled even if you perform the sorting operation over a selection of rows.

Sorting List Items

A sorting operation can be performed on various types of lists and list items. Oxygen XML Editor plugin provides support for sorting the following types of lists:

- Ordered list (`ol`)
- Unordered list (`ul`)
- Parameter list (`parml`)

- Simple list (`sl`)
- Required conditions (`reqconds`)
- Supplies list (`supplyli`)
- Spare parts list (`sparesli`)
- Safety conditions (`safety`)
- Definitions list (`dl`)

The sorting mechanism works on an entire list or on a selection of list items. To sort items in a list, select the items or list and use the **Sort** action from the main toolbar or the contextual menu. This opens the **Sort** dialog box.

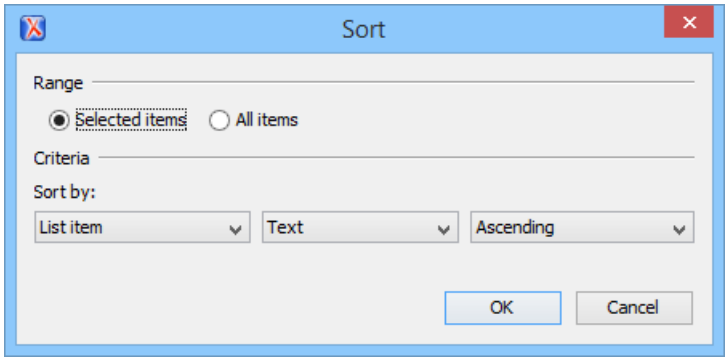


Figure 321: Sorting List Items

This dialog box sets the range that is sorted and the sorting criteria. The range is automatically selected depending on whether you sort an entire list or only a selection of its items.

Note: When you invoke the sorting operation over an entire list, the **Selected rows** option is disabled.

The **Criteria** section specifies the sorting criteria, defined by the following:

- The name of the type of item being sorted.
- The type of the information that is sorted. You can choose between the following:
  - **Text** - Alphanumeric characters.
  - **Numeric** - Regular integer or floating point numbers are accepted.
  - **Date** - Default date and time formats from the local OS are accepted (such as *short*, *medium*, *long*, *full*, *xs:date*, and *xs:dateTime*).
- The sorting direction (either *ascending* or *descending*).

After you finish configuring the options in the **Sort** dialog box, click **OK** to complete the sorting operation. If you want to revert to the initial order of your content, press **Ctrl + Z (Command + Z on OS X)** on your keyboard.

Note: The sorting support takes the value of the `xml:lang` attribute into account and sorts the content in a natural order.

Inserting Images

To insert an image in a document while editing in **Author** mode, use one of the following methods:

- Click the **Insert Image** action from the toolbar. This opens a dialog box that allows you to choose the image file you want to insert and configure some properties. Oxygen XML Editor plugin tries to reference the image with a path that is relative to that of the document you are currently editing. For example, if you want to add the `file:/C:/project/xml/dir/img1.jpg` image into the `file:/C:/project/xml/doc1.xml` document, Oxygen XML Editor plugin inserts a reference to `dir/img1.jpg`. This is useful when multiple users work on a common project and they have it stored in multiple locations.

  Note: The **Insert Image** action is available for the following document types: DITA, DocBook, TEI, XHTML, JATS.

- Drag an image from other application and drop it in the **Author** editing mode. If it is an image file, it is inserted as a reference to the image file. For example, in a DITA topic the path of the image file is inserted as the value of the `href` attribute in an `image` element:

  ```
  <image href="../images/image_file.png"/>
  ```

  Tip: To replace an image, just drag and drop a new image over the existing one. Oxygen XML Editor plugin will automatically update the reference to the new image.
- Copy an image file from another document or another application (such as a system file browser or web browser) and paste it into your document. Oxygen XML Editor plugin will insert it as a reference to the image file the same as the drag/drop method.
- Select an image (or part of an image) from another application (such as an image editor), copy it, and paste it into your document. Oxygen XML Editor plugin will prompt you to save it. After saving the image, a reference to that file path is inserted at the paste position.

Related Information:

Image Map Editor on page 529
Image Rendering in **Author** Mode on page 526
Adding Video, Audio, and Embedded HTML Resources in DITA Topics on page 1511

Image Rendering in Author Mode

The **Author** mode and the output transformation process might render the images referenced in an XML document differently, since they use different rendering engines.

Table 35: Supported Image Formats

Image Type	Support	Additional Information
GIF	built-in	Animations not yet supported
JPG, JPEG	built-in	JPEG images with CMYK color profiles are properly rendered only if color profile is inside the image.
PNG	built-in	
SVG, SVGZ, WMF	built-in	Rendered using the open-source Apache Batik library that supports SVG 1.1.
BMP	built-in	
TIFF	built-in	Rendered using a part of the Java JAI Image library.
EPS	built-in	Renders the preview TIFF image inside the EPS.
AI	built-in	Renders the preview image inside the Adobe Illustrator file.
JPEG 2000, WBMP	plugin	Renders by installing the *Java Advanced Imaging (JAI) Image I/O Tools* plug-in.
PDF	plugin	Renders by installing the Apache PDF Box library.

When an image cannot be rendered, Oxygen XML Editor plugin **Author** mode displays a warning message that contains the reason why this is happening. Possible causes include the following:

- The image is too large. Select the **Show very large images** option.
- The image format is not supported by default. It is recommended to install the *Java Advanced Imaging(JAI) Image I/O Tools* plug-in.

Scaling Images

Image dimension and scaling attributes are taken into account when an image is rendered. The following rules apply:

- If you specify only the width attribute of an image, the height of the image is proportionally applied.

- If you specify only the height attribute of an image, the width of the image is proportionally applied.
- If you specify width and height attributes of an image, both of them control the rendered image.
- If you want to scale both the width and height of an image proportionally, use the `scale` attribute.

Note: As a Java application, Oxygen XML Editor plugin uses the *Java Advanced Imaging* API that provides a pluggable support for new image types. If you have an *ImageIO* library that supports additional image formats, just copy this library to the *[OXYGEN_INSTALL_DIR]*`/lib` directory.

Rendering CGM Images (Experimental Support)

Oxygen XML Editor plugin offers a few add-ons that provide experimental support for CGM 1.0 images. To allow the rendering of CGM images in **Author** mode, go to https://github.com/oxygenxml/oxygenxml.cgm.support.eclipse and follow the instructions.

Rendering PDF Images

Starting with Oxygen XML Editor plugin version 20.0, PDF images are rendered in **Author** mode and PDF output. For previous versions, they are not rendered by default. To add such support in previous versions, you need to add the *Apache PDFBox* library:

Manually Adding the ApachePDFBox Libraries

To manually add the *Apache PDFBox* library so that PDF images are rendered in **Author** mode, follow this procedure:

1. Go to http://pdfbox.apache.org/downloads.html and download the pre-built PDFBox standalone binary *JAR* files: **`pdfbox-2.0.3.jar`**, **`fontbox-2.0.3.jar`**, and **`xmpbox-2.0.3.jar`**. Alternatively, you can use the `1.8.12` version of these files, as they have been tested and work properly.

   Note: It is not recommended to use `pdfbox-app-2.0.3.jar` file instead of the three specified files because it contains additional classes that may cause conflicts elsewhere in Oxygen XML Editor plugin.
2. Create a subfolder called `pdfImageJars` in the *[OXYGEN_INSTALL_DIR]*`\lib` directory.
3. Copy the downloaded *JAR* libraries to that newly created subfolder.
4. Open `OXYGEN_PLUGIN_DIR/META-INF/MANIFEST.MF` and add a reference to the *JAR* libraries in the `Bundle-ClassPath` entry.
5. Restart Eclipse in clean mode (edit the shortcut you use to start Eclipse and add `-clean` as the first argument.)

Rendering PSD Images

Oxygen XML Editor plugin provides support for rendering PSD (Adobe Photoshop) images.

To allow the rendering of PSD images in **Author** mode, follow this procedure:

1. Download the following *JAR* files:
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-lang/3.1.0/common-lang-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-io/3.1.0/common-io-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/common/common-image/3.1.0/common-image-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-core/3.1.0/imageio-core-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-metadata/3.1.0/imageio-metadata-3.1.0.jar
   - http://search.maven.org/remotecontent?filepath=com/twelvemonkeys/imageio/imageio-psd/3.1.0/imageio-psd-3.1.0.jar
2. Copy the downloaded *JAR* libraries to the *[OXYGEN_INSTALL_DIR]*`\lib` directory.
3. Open `OXYGEN_PLUGIN_DIR/META-INF/MANIFEST.MF` and add a reference to the *JAR* libraries in the `Bundle-ClassPath` entry.
4. Restart Eclipse in clean mode (edit the shortcut you use to start Eclipse and add `-clean` as the first argument.)

Rendering EPS and AI Images

Most EPS and AI image files include a preview picture of the content. Oxygen XML Editor plugin tries to render this preview picture. The following scenarios are possible:

- The EPS or AI image does not include the preview picture. Oxygen XML Editor plugin cannot render the image.
- The EPS image includes a TIFF preview picture.

  Note: Some newer versions of the TIFF picture preview are rendered in gray-scale.
- The AI image contains a JPEG preview picture. Oxygen XML Editor plugin renders the image correctly.

Rendering Special Images with Java Advanced Imaging (JAI) Plugin

Certain special image types can be rendered in Oxygen XML Editor plugin by using a Java Advanced Imaging (JAI) Image I/O Tools plugin.

How to Install JAI Image I/O Tools Plugin

To install this plug, follow this procedure:

1. Start Oxygen XML Editor plugin and open the **Help** > **About** dialog box. Click the **Installation Details** button, go to the **Configuration** tab, and look for the *java.runtime.name* and *java.home* properties. Keep their values for later use.
2. Download the JAI Image I/O kit corresponding to your operating system and Java distribution (found in the *java.runtime.name* property). A list of archived JAI distributions can be found at: http://www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-java-client-419417.html.

   Note: The JAI API is not the same thing as JAI Image I/O. Make sure you have installed the latter.
3. Run the installer. When the installation wizard displays the **Choose Destination Location** page, fill-in the **Destination Folder** field with the value of the *java.home* property. Continue with the installation procedure and follow the on-screen instructions.

OS X Workaround

There is no native implementation of the JAI Image I/O Tools plugin for OS X 10.5 and later. However, it has a Java implementation fallback that also works on OS X. Some of the image formats are not fully supported in this fallback mode, but at least the TIFF image format is known to be supported.

Use the following procedure for this OS X workaround:

1. Download a Linux (`tar.gz`) distribution of the JAI Image I/O Tools plugin. A list of archived JAI distributions can be found at: http://www.oracle.com/technetwork/java/javasebusiness/downloads/java-archive-downloads-java-client-419417.html.
2. In the *[OXYGEN_INSTALL_DIR]*`/lib` directory, create a directory named `endorsed` (*[OXYGEN_INSTALL_DIR]*`/lib/endorsed`).
3. Unpack the `tar.gz`. Copy the `clibwrapper_jiio.jar` and `jai_imageio.jar` files from its `lib` directory and paste them in the *[OXYGEN_INSTALL_DIR]*`/lib/endorsed` directory.
4. Restart the application and the JAI Image I/O support will be up and running.

Retina/HiDPI Images in Author Mode

Oxygen XML Editor plugin provides support for Retina and HiDPI images through simple naming conventions. The higher resolution images are stored in the same images folder as the normal resolution images and they are identified by a scaling factor that is included in the name of the image files. For instance, images with a Retina scaling factor of 2 will include *@2x* in the name (for example, `myImage@2x.png`).

You can reference an image to style an element in a CSS by using the `url` function in the `content` property, as in the following example:

```
listItem:before{
   content: url('../img/myImage.png');
}
```

This would place the image that is loaded from the `myImage.png` file just before the `listItem` element. However, if you are using a Retina display (on a Mac), the icon looks a bit blurry as it automatically gets scaled, or

if you are using an HiDPI display (on a Windows-based PC), the icon remains at the original size, thus it will look very small. To solve this rendering problem, you need to be able to reference both a *normal* DPI image and a *high* DPI image. However, referencing both of them from the CSS is not practical, as there is no standard way of doing this.

Starting with version 17, Oxygen XML Editor plugin interprets the argument of the `url` function as key rather than a fixed URL. Therefore, when running on a system with a Retina or HiDPI display, Oxygen XML Editor plugin will first try to find the image file that corresponds to the retina scaling factor. For instance, using the previous example, Oxygen XML Editor plugin would first try to find `myImage@2x.png`. If this file is not found, it defaults back to the *normal* resolution image file (`myImage.png`).

Oxygen XML Editor plugin also supports dark color themes. This means that the background of the editor area can be of a dark color and the foreground a lighter color. On a dark background, you may find it useful to invert the colors of images. Again, this can be done with simple naming conventions. If an image designed for a dark background is not found, the *normal* image is used.

Retina/HiDPI Naming Convention

Refer to the following table for examples of the Retina/HiDPI image naming convention that is used in Oxygen XML Editor plugin:

Color Theme	Referred Image File	Double Density Image File	Triple Density Image File
normal	../img/myImage.png	../img/myImage@2x.png	../img/myImage@3x.png
dark	../img/myImage_dark.png	../img/myImage_dark@2x.png	../img/myImage_dark@3x.png

Related Information:

Adding Retina/HiDPI Icons in a Framework on page 1257

Image Map Editor

Oxygen XML Editor plugin includes an **Image Map Editor** that allows you to create hyperlinks in specific areas of an image that will link to various destinations. For example, an image that is a map of the seven continents may have a specific hyperlink for each continent that links to a resource that has information about the particular continent. The main purpose of an **image map** is to provide an easy way of linking various parts of an image without having to divide the image into separate image files.

The support for image maps in Oxygen XML Editor plugin is available for images in DITA, DocBook, TEI, and XHTML document types (*frameworks*). To create an image map on an existing image and open the **Image Map Editor**, right-click the image and select **Image Map Editor**.

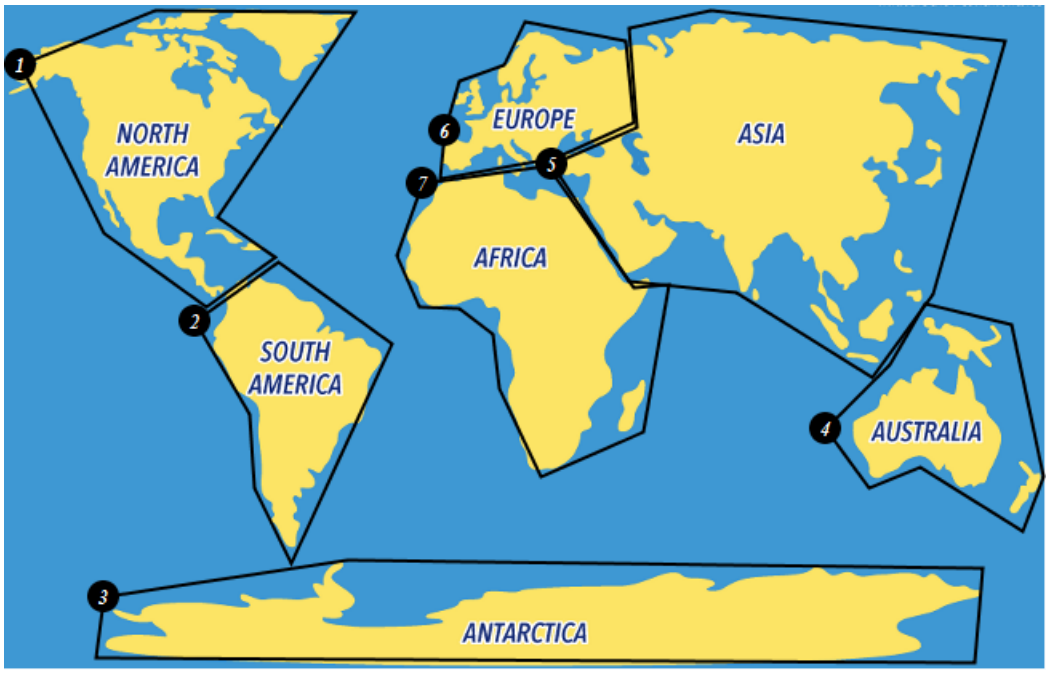


Figure 322: Image Map Rendered in Author Mode

Image Maps in DITA

Oxygen XML Editor plugin includes support for **image maps** in DITA documents through the use of the `imagemap` element. This feature provides an easy way to create hyperlinks in various areas within an image without having to divide the image into separate image files. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

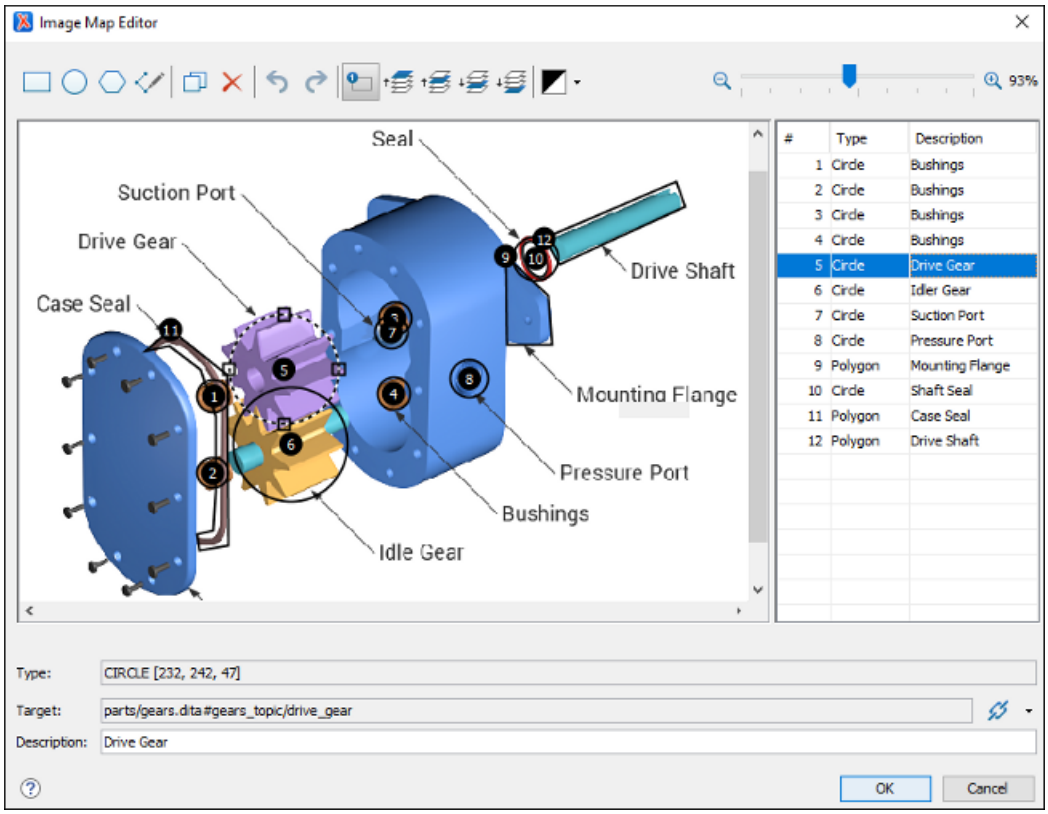


Figure 323: Image Map Editor in DITA

Image Map Editor Interface in DITA

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Use this button to draw a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Creates a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and description (if one has been added). If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

Target

Allows you to choose the target resource that you want the selected area (shape) to be linked to. Select a target by using the **Link** drop-down menu to the right of the text field. You can choose between the following types of links: **Cross Reference**, **File Reference**, or **Web Link**. All three types will open a dialog box that allows you to define the target resource. This linking process is similar to the normal process of inserting links in DITA by using the identical **Link** drop-down menu from the main toolbar.

When you click **OK** to finalize your changes in the **Image Map Editor**, an `xref` element will be inserted with either an `href` attribute or a `keyref` attribute. Additional attributes may also be inserted and their values depend on the target and the type of link. For details about the three types of links and their dialog boxes, see Inserting a Link in Oxygen XML Editor plugin on page 1564.

Description

You can enter an optional description for the selected area (shape) that will be displayed in the **Image Map Details** section in **Author** mode and as a tooltip message when the end user hovers over the hyperlink in the output.

How to Create an Image Map in DITA

To create an image map on an existing image in a DITA document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting one of the shape buttons (**New Rectangle**, **New Circle**, or **New Polygon**).
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
4. With the shape selected, use one of the linking options in the **Link** drop-down menu to select a target resource (or enter its path in the **Target** text field).
5. (Optional) Enter a **Description** for the selected area (shape).
6. If you want to add more hyperlinks to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image. If the image includes an `alt` element, its value will be displayed under the image. The following two buttons will also now be available under the image in **Author** mode:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

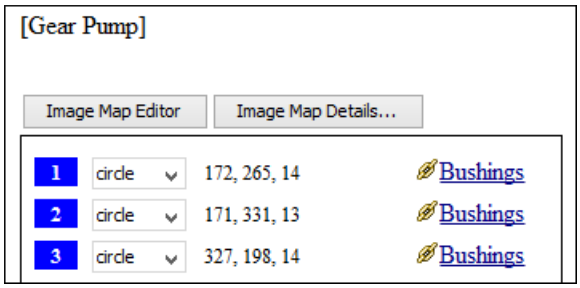


Figure 324: Image Map Details

How to Edit an Existing Image Map in DITA

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button below the image to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Related Information:

DITA 'imagemap' Element Specifications

Adding Images in DITA Topics on page 1509

Image Maps in DocBook

Oxygen XML Editor plugin includes support for **image maps** in DocBook documents through the use of the `areaspec` element. This feature provides an easy way to create hyperlinks in various parts of an image without having to divide the image into separate image files. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

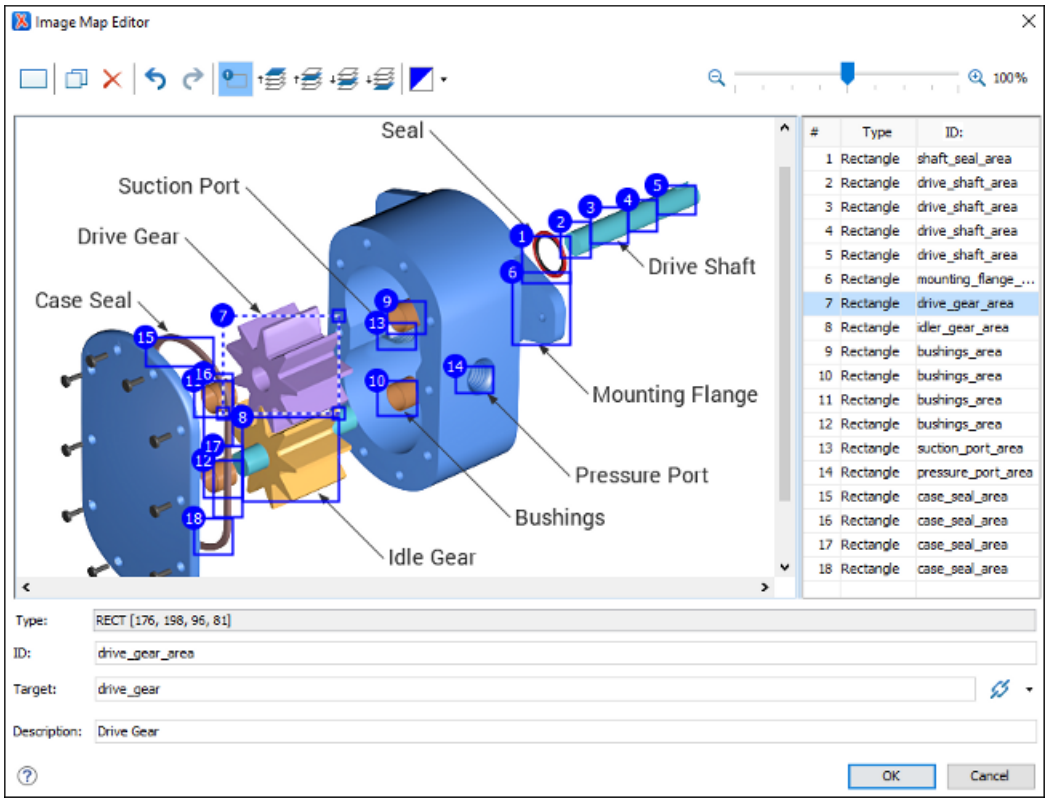


Figure 325: Image Map Editor in DocBook

Image Map Editor Interface in DocBook

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and ID. If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

ID

The identifier for the selected area. This will become the value of the `xml:id` attribute for the particular `area` element.

Target

Allows you to choose the target resource that you want the selected area to be linked to. You can enter the path to the target in the text field but the easiest way to select a target is to use the **Link** drop-down menu to the right of the text field. You can choose between the following types of links: **Cross Reference** or **Web Link**. Both types open a dialog box that allows you to select the target resource and it is inserted as the value of an `xlink:href` attribute.

Description

You can enter an optional description for the selected area that will be displayed in the **Image Map Details** section in **Author** mode and as a tooltip message when the end user hovers over the hyperlink in the output.

How to Create an Image Map in DocBook

To create an image map on an existing image in a DocBook document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting the **New Rectangle** button.
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the shapes or anywhere in the Image Pane to access various helpful contextual menu actions.
4. With the shape selected, enter an **ID** and use one of the linking options in the **Link** drop-down menu to select a target resource (or enter its path in the **Target** text field).
5. (Optional) Enter a **Description** for the selected area (shape).
6. If you want to add more hyperlinks to the image, select **New Rectangle** button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image. If the image includes an `alt` element, its value will be displayed above the image. The following two buttons will also now be available at the top of the image in **Author** mode:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map.

How to Edit an Existing Image Map in DocBook

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button above the image to expand a section that displays the details of the image map and allows you to change the coordinates and IDs of the hyperlinked areas.

Note: If you want to link a set of related `area` elements, you can use `areaset` elements. To add `areaset` elements, and `area` elements to the *areasets*, switch to **Text** mode and insert them manually.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Related Information:

DocBook 'areaspec' Element Specifications

Image Maps in TEI

Oxygen XML Editor plugin includes support for **image maps** in TEI documents through the use of the `facsimile` element. In TEI documents, this feature provides an easy way to create areas (using `zone` elements) in an image where the end user can hover or click to retrieve more information about that particular area of the image. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create the areas in the image.

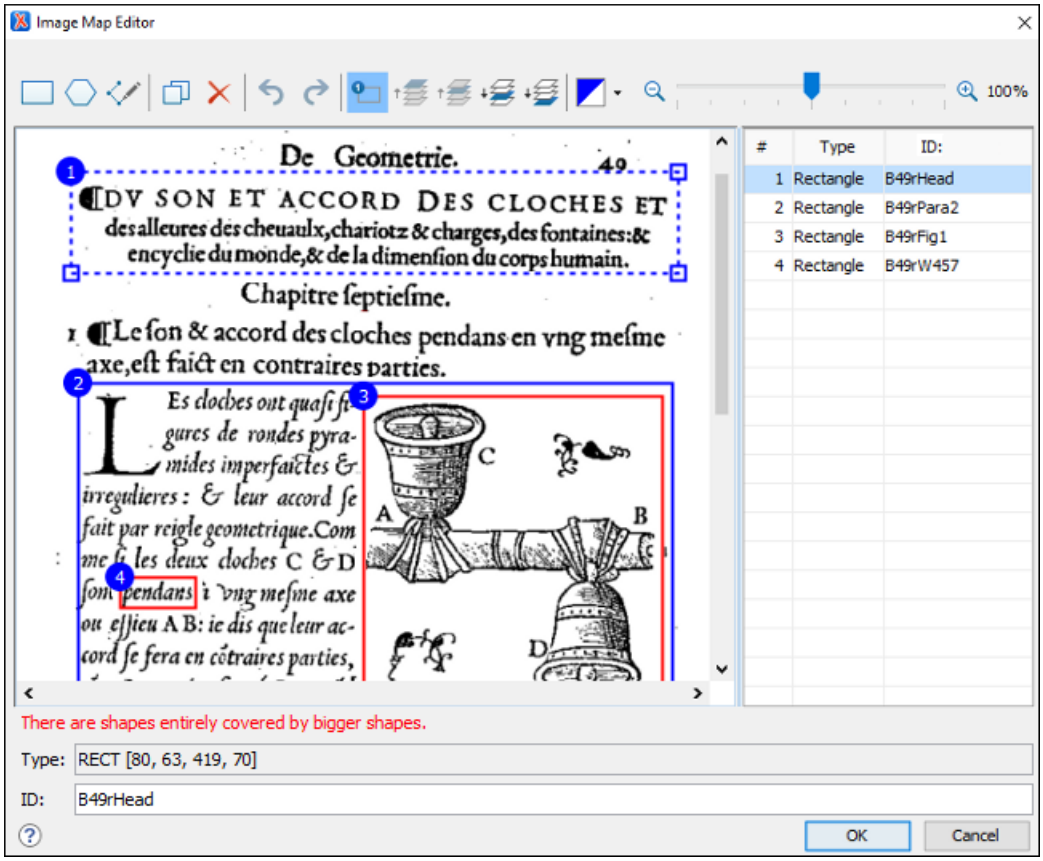


Figure 326: Image Map Editor in TEI

Image Map Editor Interface in TEI

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and ID. If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

ID

The identifier for the selected area. This will become the value of the `xml:id` attribute for the particular `zone` element. When you insert a new zone, a unique ID is automatically generated and displayed in this field. However, you can change this value if you want to.

How to Create an Image Map in TEI

To create an image map on an existing image in a TEI document, follow these steps:

1. The image (`graphic`) must be inside a `facsimile` element to support the **Image Map Editor** feature.
2. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
3. Add areas (zones) in the image by selecting one of the shape buttons (**New Rectangle** or **New Polygon**).
4. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
5. With the shape selected, enter an **ID**.
6. If you want to add more areas (zones) to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image and the following two buttons will now be available at the bottom of the image:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map.

How to Edit an Existing Image Map in TEI

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button below the image to expand a section that displays the details of the image map and allows you to change the coordinates and IDs of the hyperlinked areas.

Restriction: Currently, if `zone` elements contain additional content (such as text or comments) and you edit the image map, the **Image Map Editor** does not preserve the additional content. Therefore, if you do need to insert additional content inside the `zone` elements, you should do so after the image map has been created and finalized. Subsequent changes to the image map should then be done in **Text** mode.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers** button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Warning: PDF output is limited to rectangular shaped image map objects. Therefore, if your image contains circles or polygons, those objects will be redrawn as rectangles in the PDF output. Keep in mind that this might affect overlaps in the output.

Related Information:

TEI 'facsimile' Element Specifications

Image Maps in XHTML

Oxygen XML Editor plugin includes support for **image maps** in XHTML documents. This feature provides an easy way to create hyperlinks in various parts of an image without having to divide the image into separate image files. In HTML, an image (in the form of an `img` element) may be associated with an image map (in the form of a `map` element) by specifying a `usemap` attribute on the `img` element. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

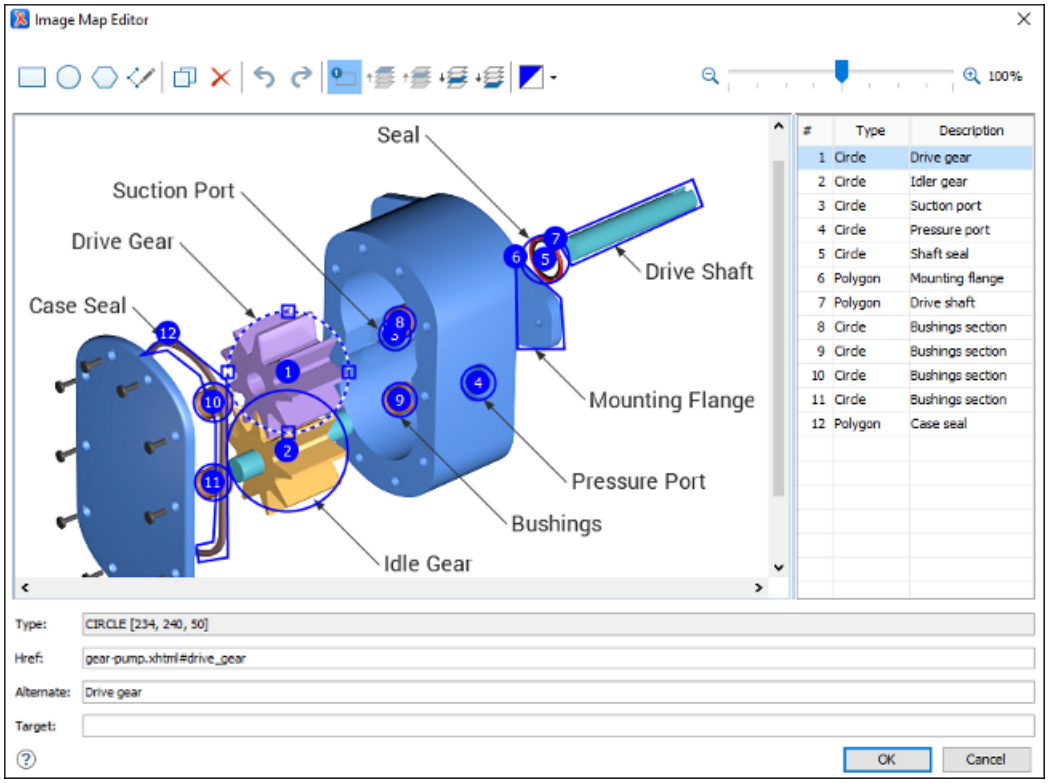


Figure 327: Image Map Editor in XHTML

Image Map Editor Interface in XHTML

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Use this button to draw a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Creates a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and description (value of the **Alternative** property). If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

Href

Specifies the hyperlink target for the selected area. This will become the value of the `href` attribute for the particular `area` element. The possible values are:

- **An Absolute URL** - A URL of another web site (for example, `http://www.example.com/index.htm`).
- **A Relative URL** - A link to a file within your web site (for example, `index.htm`).
- **An Element** - A link to the ID of an element within the page (for example, `#top`).
- **Other Protocols** - A specified path using other protocols (such as `https://`, `ftp://`, `mailto:`, `file:`).
- **A Script** - A link to a script (for example, `javascript:alert('Hello');`)

Alternate

The description for the selected area. The value is inserted in an `alt` attribute in the particular `area` element. This is a required attribute to present a text alternative for browsers that do not display images.

Target

Specifies where to open the linked resource. The allowed values are:

- **_blank** - Opens the linked resource in a new window or tab.
- **_self** - Opens the linked resource in the same frame as it was clicked.
- **_parent** - Opens the linked resource in the full body of the window.
- **framename** - Opens the linked resource in the named frame.

How to Create an Image Map in XHTML

To create an image map on an existing image in an XHTML document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.
2. Add hyperlinks to the image by selecting one of the shape buttons (**New Rectangle**, **New Circle**, or **New Polygon**).
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
4. With the shape selected, specify the hyperlink target in the **Href** field and enter a description for the selected area in the **Alternate** field.
5. (Optional) Specify where the hyperlink resource will be opened in the **Target** field.
6. If you want to add more hyperlinks to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image and its properties are displayed in a section below the image.

How to Edit an Existing Image Map in XHTML

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

In **Author** mode, the details of the image map are also displayed below the image and you can edit the description, href, shape, and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers**

button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Warning: PDF output is limited to rectangular shaped image map objects. Therefore, if your image contains circles or polygons, those objects will be redrawn as rectangles in the PDF output. Keep in mind that this might affect overlaps in the output.

Related Information:

HTML Image Map Specifications

Adding Video, Audio, and Embedded HTML Resources

You can insert references to media resources (such as videos, audio clips, or embedded HTML frames) in your DITA, DocBook, or XHTML topics. The media resources can be played directly in **Author** mode and in all HTML5-based outputs. There is a toolbar button ( ) that allows you to insert and configure a reference to the media resource. You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them).

Table 36: Supported Media Types

Media	Description	Type	Supported Size Properties
mp3	Moving Picture Experts Group Layer-3 Audio	audio	Width
wav	Windows Wave	audio	Width
pcm	Pulse Code Modulation	audio	Width
m4a	Moving Picture Experts Group Layer-4 Audio	audio	Width
aif	Audio Interchange Format	audio	Width
mp4	Moving Picture Experts Group Layer-4 Video	video	Width & Height
flv	Flash Video	video	Width & Height
m4v	Itunes Video File	video	Width & Height
avi	Audio Video Interleaved	video	Width & Height
embedded video (such as YouTube or Vimeo)	Embedded Iframe Code	iframe	Width & Height

Adding a Media Resource

To insert a media resource in a document, use the following procedure:

1. Place the cursor at the location where you want the media resource.
2. Select the **Insert Media Resource** action from the toolbar. A **Chose Media** dialog box appears.

   Note: You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them).
3. Select the URL for the media resource and click **Ok**.

Result in Author Mode: A reference to the specified media object is inserted and rendered in **Author** mode so that it can be played directly from there.

Attention: On Mac OS X, if you receive a **Blocked Plug-in** error message, you need to updated your *Flash Player* to the latest version.

Result in Output: In the publishing stage, the media object is converted to an HTML5 element so that it can be rendered properly and played in all HTML5-based outputs.

Embedding HTML Content in DITA Topics

The DITA Open Toolkit that comes bundled with Oxygen XML Editor plugin includes a pre-installed *plugin* that allows you to embed well-formed HTML content directly in a DITA topic.

For example, suppose you wanted to embed a YouTube video directly in a DITA topic.

The DITA topic would look like this:

```
....
<foreign outputclass="html-embed"><![CDATA[
                <iframe width="420" height="315"
                  src="https://www.youtube.com/embed/qepRkQxhTX"
                  frameborder="0" allowfullscreen="true">
                </iframe>
                ]]></foreign>
....
```

The converted HTML output would look like this:

```
...........
<iframe width="420" height="315" src="https://www.youtube.com/embed/qepRkQxhTX"
frameborder="0" allowfullscreen="true">
</iframe>
...........
```

The *plugin* is also available on the *oxygenxml GitHub projects page*.

Related Information:

How to Add Video and Audio Objects in DITA WebHelp Output on page 1095

Editing MathML Notations

The **Author** editor includes a built-in editor for *MathML* notations. To start the *MathML* editor, double-click a *MathML* notation (for embedded notations, you can also select the **Edit Equation** action from its contextual menu).

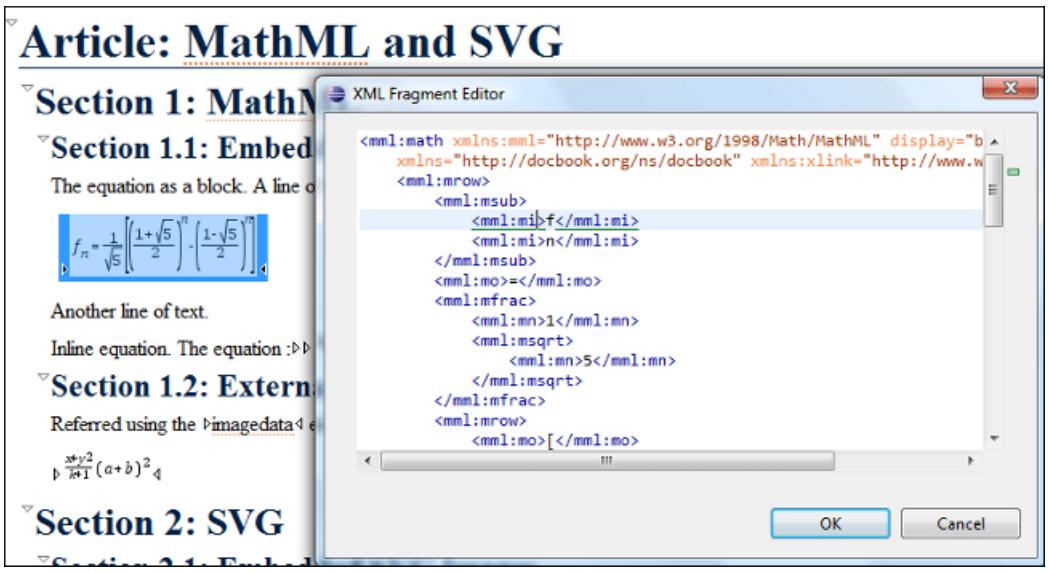


Figure 328: Default *MathML* Editor

Configure the MathFlow Editor

The *MathFlow* Components product can replace the default *MathML* editor with a specialized *MathML* editor. You have to purchase a *MathFlow* Component from Design Science and configure it in Oxygen XML Editor plugin with the following procedure:

1. Install *MathFlow* by using the *Universal* installer (for versions prior to 2.1, use the *MathFlow SDK*).
2. Set the path to the *MathFlow* install folder in the **MathML** preferences page.
3. Set the path to the *MathFlow* license file in the **MathML** preferences page.

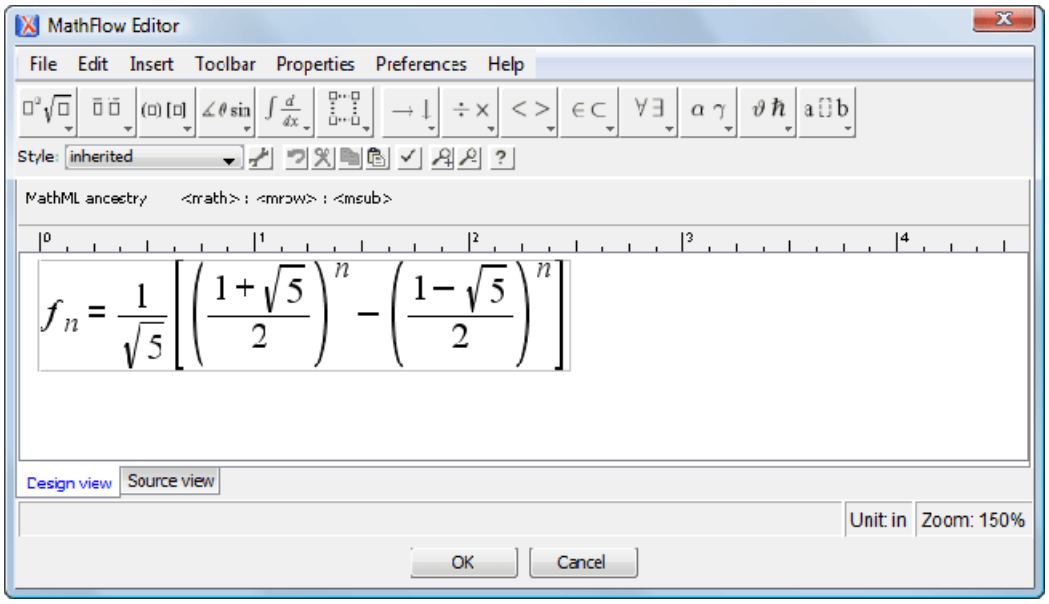


Figure 329: Default MathFlow Editor

MathML Equations in HTML Output

Currently, only **Firefox** can render **MathML** equations embedded in the **HTML** code. MathJax is a solution to properly view MathML equations embedded in **HTML** content in a variety of browsers.

If you have DocBook or DITA content that has embedded **MathML** equations and you want to properly view the equations in published HTML output types (WebHelp, CHM, EPUB, etc.), you need to add a reference to the MathJax script in the **head** element of all HTML files that have the equation embedded.

For example:

```
<script type="text/javascript"
  src="https://cdn.mathjax.org/mathjax/latest/MathJax.js?config=TeX-AMS-MML_HTMLorMML">
</script>
```

For DITA documents, you can also use the following procedure:

1. Edit the DITA Map WebHelp transformation scenario and open the **Parameters** tab.
2. Set the following parameter to point to an XML resource file that contains your script, depending on your type of WebHelp system.
   - **WebHelp Responsive Systems** - Set the `webhelp.fragment.head` parameter to point to your resource file.
   - **WebHelp Classic Systems** - Set the `webhelp.head.script` parameter to point to your resource file.
3. Run the transformation scenario.

Result: The equation should now be properly rendered in other browsers, such as Edge, IE, or Chrome.

Refreshing the Content

On occasion you may need to reload the content of the document from the disk or reapply the CSS. This can be performed by using the **Reload** action.

To refresh the content of the referenced resources you can use the **Refresh references** action that is available in the current *framework* menu (for example, the **DITA** or **DocBook5** menu) . However, this action will not refresh the expanded external entities, for which you will need to use the **Reload** action.

Generating IDs for Elements in Author Mode

Oxygen XML Editor plugin allows you to manually assign or edit values of `id` attributes in **Author** mode by using the **Attributes View** or an in-place attribute editor. Oxygen XML Editor plugin also includes mechanisms to generate ID values for elements, either on-request or automatically, in DITA, DocBook, or TEI documents.

Generate IDs On-Request

You can generate ID values for specific elements on-request. To do so, select the element for which you want to generate an ID (or place the cursor inside the element) and select the **Generate IDs** action from the contextual menu or the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**). This action generates a unique ID for the current element. If you invoke the action on a block of selected content, the action will generate IDs for all top-level elements and elements that are listed in the **ID Options** dialog box. To open this dialog box, select **ID Options** from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**)

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Automatically Generate IDs

Oxygen XML Editor plugin includes an option to automatically add unique ID values to certain elements when they are created in **Author** mode. The **Auto generate IDs for elements** option can be found in the **ID Options** dialog box that is displayed when you select the **ID Options** action from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**). If this **Auto generate IDs for elements** option is selected, Oxygen XML Editor plugin automatically generates unique ID values for elements that are listed in this dialog box. You can use this dialog box to customize the format of the ID values and choose which elements will have their ID values automatically generated (for example, you can customize the list of elements to include those that you most often need to identify).

ID Options Dialog Box

To configure options for generating IDs, select **ID Options** from the *framework*-specific menu (**DITA**, **DocBook**, or **TEI**).

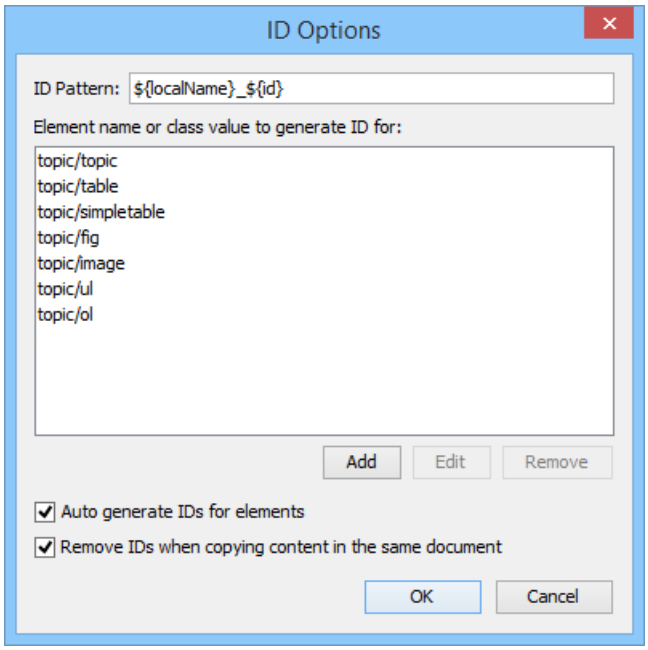


Figure 330: ID Options Dialog Box

The **ID Options** dialog box allows you to configure the following options in regards to generating ID values:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document (DITA or TEI)

When copying and pasting content in the same DITA or TEI document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Remove IDs when copying content (DocBook)

This option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs in DocBook documents. If this option is not selected, IDs are always retained when you copy or cut content and paste it in the same document or other documents. If this option is selected, IDs are never retained for copied content, but if you cut the content, they are preserved for the first paste action (and not retained for any subsequent paste actions).

Duplicating Elements with Existing IDs

If you duplicate elements with existing IDs (for example, through copy/paste or drag/drop actions), all IDs are removed at the resolution of the operation. However, you can use the options in the **ID Options** dialog box to change this behavior. The options in this dialog box affect duplicated elements with existing IDs in the following ways:

- Only the elements listed in this dialog box are affected by these options. Therefore, if you want to use these options to preserve IDs or generate new ones, you must first add the elements to be duplicated to the list in this dialog box.
- If the **Auto generate IDs for elements** option is selected and you duplicate elements with existing IDs, Oxygen XML Editor plugin assigns new, unique ID values to the duplicates.
- If the **Auto generate IDs for elements** option is not selected and you duplicate elements with existing IDs, the ID values are removed from the duplicates.
- For DITA and TEI, if the **Remove IDs when copying content in the same document** option is selected, the ID values are removed from elements that are duplicated in the same document. If it is not selected, the ID values are preserved when elements are duplicated in the same document. Selecting this option has no effect if the **Auto generate IDs for elements** option is selected and this option has no affect on elements that are duplicated in other documents.
- For DocBook, if the **Remove IDs when copying content** option is selected, the ID values are removed from any element that is duplicated. If it is not selected, the ID values are preserved when elements are duplicated. Selecting this option has no effect if the **Auto generate IDs for elements** option is selected.

Controlling the Default ID Generation Options

It is possible to configure the default ID generation options for DITA, DocBook, and TEI document types. In the `frameworks` folder for each of those document types, there is an XML configuration file called `idGenerationDefaultOptions.xml` that contains the default settings for generating IDs in each particular type of document. To configure the default settings, you can edit this file and save it back to the same directory.

The configuration file can be found in the `resources` folder within the particular *framework*. For example, the configuration file for the DITA *framework* is located in: *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/resources/idGenerationDefaultOptions.xml`.

Sharing Default ID Generation Options

If you want to share your configured default ID generation settings with other members of your team, follow these steps:

1. Configure the `idGenerationDefaultOptions.xml` file for your *framework* according to your needs.
2. Bundle a modified version of the entire *framework* folder (for example, *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/`). To do this:
   a. Open the **Preferences** dialog box and go to **Document Type Association**.
   b. Select your document type and click the **Extend** button.
   c. In the **Document type** configuration dialog box that is now displayed, select **External** for the **Storage** option. By default, this will save the extension in a new folder in the `frameworks` folder (for example, *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita-extension (1)`), but you can also use the **Browse** button to specify a specific name and folder.
   d. In this new extension folder, create a new folder called `resources` and add your modified `idGenerationDefaultOptions.xml` file to this new `resources` folder.
   e. Go back to the **Document Type Association** preferences page, select the extended *framework*, and click **Edit**.
   f. Go to the **Classpath** tab, add a reference to your new `resources` folder, and move this reference up (using the **Move Up** button) so that it is the first one that appears in the list.
   g. Click **OK** and exit out of the preferences page.
3. Distribute your newly extended folder to other team members by using one of the methods described in Sharing a Framework (Document Type) on page 1298.

Using Form Controls in Author Mode

You can use form controls in **Author** mode in a variety of ways to make it easier to capture, organize, and edit content. Oxygen XML Editor plugin includes built-in form controls that can be used by content authors in **Author** mode. The types of built-in form controls that you can use include the following:

- Audio - A media object that plays audio clips.
- Browser - A media object that renders HTML frames or interact with SVG documents
- Button - A graphical user interface object that performs a specific action.
- Button Group - A graphical user interface group of buttons (such as radio buttons) that perform specific actions.
- Checkbox - A graphical user interface box that you can click to select or deselect a value.
- Combo Box - A graphical user interface object that can be a drop-down menu or a combination of a drop-down menu and a single-line text field.
- Date Picker - A form control object that allows you to select a date in a specified format.
- HTML Content - A graphical user interface box that is used for rendering HTML content.
- Pop-up - A contextual menu that provides quick access to various actions.
- Text Area - A box that allows you to enter multiple lines of text.
- Text Field - A graphical user interface box that allows you to enter a single line of text.
- URL Chooser - A dialog box that allows you to select the location of local or remote resources.
- Video - A media object that plays videos.

You can also implement custom form controls for more specific needs.

The following image is an example of how form controls can be used by content authors in **Author** mode. It includes several button form controls, a combo box, and a text field. The icon is a button form control that is assigned a specific action that changes the layout to an editing mode. The **[+]** and **[-]** icons are also button form controls that are assigned specific actions to add or delete records from the document. The *Direct manager* row includes a combo box form control that is both a drop-down menu and an editable text field, while the *Homepage* row includes a simple editable text field form control.

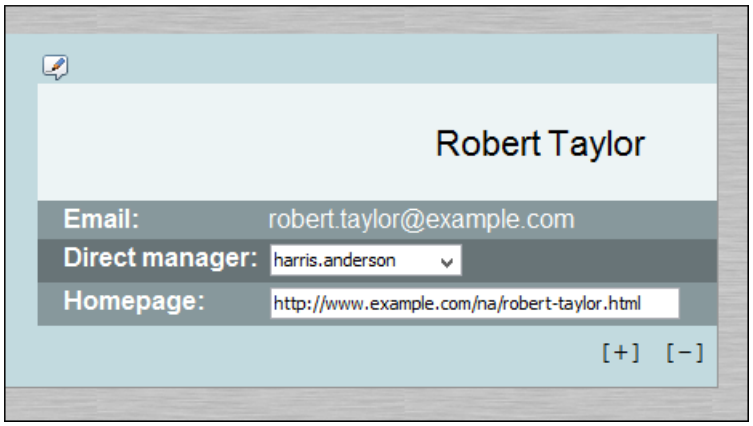


Figure 331: Example of Form Controls in Author Mode

You can use your imagination to envision the multitude of ways that you can use form controls to make the editing experience for content authors easier and more efficient. As a working example, a bundled *samples* project (located in the `samples` folder inside the Oxygen XML Editor plugin installation directory) contains a file called `personal.xml` that contains form controls. You can use this file, along with its corresponding `personal.css` file (form controls are defined in the CSS) to experiment with an example of how form controls can be implemented in **Author** mode.

Contextual Menu Actions in Author Mode

Oxygen XML Editor plugin includes powerful support for editing XML documents through actions included in the contextual menu. When editing XML documents in **Author** mode, the contextual menu includes *general* actions that are available for all of the recognized document types and *framework*-specific actions that are configured for each document type.

General Contextual Menu Actions in Author Mode

The *general* actions that are available in the contextual menu (some of them are also available in the submenus of the **Document** menu) for all document types include the following:

Quick Fix (Alt + 1 (Command + Alt + 1 on OS X))

Available when the contextual menu is invoked on an error where Oxygen XML Editor plugin can provide a *Quick Fix*.

Open Image

Available when the contextual menu is invoked on an image. This action allows you to open an image in a default system application associated with the current image type.

Track Changes Actions

Available when the *Track Changes* feature is enabled and the contextual menu is invoked on a change. The following options are available:

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes, all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Author Callout Actions

Available when the contextual menu is invoked on a *callout*. If the corresponding options in the **Show review callouts** section are selected in the **Callouts** preferences page, the callouts are displayed in **Author** mode for comments, tracked insertion changes, or tracked deletion changes.

Insertion or Deletion Callout Actions

The following actions are available in the contextual menu when invoked on an *insertion* or *deletion* callout box:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Accept Change(s)

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted. If you select multiple changes, all of them are accepted. For an *insertion* change, it keeps the inserted text and for a *deletion* change, it removes the content from the document.

Reject Change(s)

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected. If you select multiple changes, all of them are rejected. For an *insertion* change, it removes the inserted text and for a *deletion* change, it preserves the original content.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Edit Reference

If the fragment that contains a callout is a reference, use this option to go to the reference and edit the callout.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Comment Callout Actions

The following actions are available in the contextual menu when invoked on a *comment* callout box:

Reply

Opens a dialog box that allows you to add a reply to a comment or *Tracked Changes*. When replying to a comment, the dialog box shows the entire conversation in the comment thread, starting with the first comment added in the particular thread, followed by all the replies. After replies are added to a comment thread, they are displayed with an indentation in the callouts and **Review** view.

Mark as Done

A toggle action that marks or unmarks a comment or comment thread as being done. It is also available for *Tracked Changes* that are displayed in a callout. When a comment or change is marked as done, the callout is grayed out and cannot be edited unless the action is toggled to the unmarked state. The action applies to the particular comment and all of its descendents. This is useful for marking comments or changes that have been addressed, leaving only those that still need some attention.

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Callouts Options

Select this option to open the **Callouts** preference page where you can configure various callout options.

Edit Attributes

Displays an in-place attributes editor that allows you to manage the attributes of an element.

Edit Profiling Attributes

Allows you to change the profiling attributes defined on all selected elements.

Insert submenu

This submenu includes insert actions that are specific to each *framework*, along with the following general action:

Insert Entity

Allows you to insert a predefined entity or character entity. Surrogate character entities (range #x10000 to #x10FFFF) are also accepted. Character entities can be entered in one of the following forms:

- *#<decimal value>* - e. g. #65
- *&#<decimal value>;* - e. g. &#65
- *#x<hexadecimal value>* - e. g. #x41
- *&#x<hexadecimal value>;* - e. g. &#x41

Cut (Ctrl + X (Command + X on OS X))

Removes the current selected content from the document and places it in the clipboard.

Copy (Ctrl + C (Command + C on OS X))

Places a copy of the current selected content in the clipboard.

Paste (Ctrl + V (Command + V on OS X))

Inserts the current clipboard content into the document at the cursor position.

Paste special submenu

This submenu includes special paste actions that are specific to each *framework*, as well as the following general paste actions:

Paste As XML

Pastes clipboard content that is considered to be XML, preserving its XML structure.

Paste As Text

Pastes clipboard content, ignoring any structure or styling markup.

Select submenu

This submenu allows you to select the following:

Element

Selects the entire element at the current cursor position.

Content

Selects the entire content of the element at the current cursor position, excluding the start and end tag. Performing this action repeatedly will result in the selection of the content of the ancestor of the currently selected element content.

Parent

Selects the entire parent element at the current cursor position.

Text submenu

This submenu contains the following actions:

To Lower Case

Converts the selected content to lower case characters.

To Upper Case

Converts the selected content to upper case characters.

Capitalize Sentences

Converts to upper case the first character of every selected sentence.

Capitalize Words

Converts to upper case the first character of every selected word. 0034

Count Words

Counts the number of words and characters (no spaces) in the entire document or in the selection for regular content and read-only content.

Note: The content marked as deleted with *change tracking* is ignored when counting words.

Convert Hexadecimal Sequence to Character (Ctrl + Shift + H (Command + Shift + H on OS X))

Converts a sequence of hexadecimal characters to the corresponding Unicode character. The action can be invoked if there is a selection containing a valid hexadecimal sequence or if the cursor is placed at the right side of a valid hexadecimal sequence. A valid hexadecimal sequence can be composed of 2 to 4 hexadecimal characters and may or may not be preceded by the `0x` or `0X` prefix. Examples of valid sequences and the characters they will be converted to:

- `0x0045` will be converted to E
- `0X0125` to ĥ
- `265` to #
- `2190` to #

Refactoring submenu

Contains a series of actions designed to alter the XML structure of the document:

Toggle Comment

Encloses the currently selected text in an XML comment, or removes the comment if it is commented.

Move Up (Alt + UpArrow)

Moves the current node or selected nodes in front of the previous node.

Move Down (Alt + DownArrow)

Moves the current node or selected nodes after the subsequent node.

Split Element

Splits the content of the closest element that contains the position of the cursor. Thus, if the cursor is positioned at the beginning or at the end of the element, the newly created sibling will be empty.

Join Elements

Joins two adjacent *block elements* that have the same name. The action is available only when the cursor position is between the two adjacent *block elements*. Also, joining two *block elements* can be done by

pressing the **Delete** or **Backspace** keys and the cursor is positioned between the boundaries of these two elements.

Surround with Tags (Alt + Shift + E)

Allows you to choose a tag to enclose a selected portion of content. If there is no selection, the start and end tags are inserted at the cursor position.

- If the **Position cursor between tags** option is selected in the **Content Completion** preferences page, the cursor is placed between the start and end tag.
- If the **Position cursor between tags** option is not selected in the **Content Completion** preferences page, the cursor is placed at the end of the start tag, in an insert-attribute position.

Surround with '[tag]' (Alt + Shift + ForwardSlash)

Surround the selected content with the last tag used.

Rename Element

The element from the cursor position, and any elements with the same name, can be renamed according with the options from the **Rename** dialog box.

Delete Element Tags

Deletes the tags of the closest element that contains the position of the cursor. This operation is also executed if the start or end tags of an element are deleted by pressing the **Delete** or **Backspace** keys.

Remove All Markup

Removes all the XML markup inside the selected block of content and keeps only the text content.

Remove Text

Removes the text content of the selected block of content and keeps the markup in tact with empty elements.

Attributes Refactoring Actions

Contains predefined XML refactoring operations that pertain to attributes with some of the information preconfigured based upon the current context.

Add/Change attribute

Allows you to change the value of an attribute or insert a new one.

Convert attribute to element

Allows you to change an attribute into an element.

Delete attribute

Allows you to remove one or more attributes.

Rename attribute

Allows you to rename an attribute.

Replace in attribute value

Allows you to search for a text fragment inside an attribute value and change the fragment to a new value.

Comments Refactoring Actions

Contains predefined XML refactoring operations that pertain to comments with some of the information preconfigured based upon the current context.

Delete comments

Allows you to delete comments found inside one or more elements.

DITA Refactoring Actions

A variety of predefined XML refactoring operations that pertain to DITA documents with some of the information preconfigured based upon the current context.

Change Topic ID to File Name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS Tables to Simple Tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes.

Convert Simple Tables to CALS Tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Elements Refactoring Actions

Contains predefined XML refactoring operations that pertain to elements with some of the information preconfigured based upon the current context.

Delete element

Allows you to delete elements.

Delete element content

Allows you to delete the content of elements.

Insert element

Allows you to insert new elements.

Rename element

Allows you to rename elements.

Unwrap element

Allows you to remove the surrounding tags of elements, while keeping the content unchanged.

Wrap element

Allows you to surround elements with element tags.

Wrap element content

Allows you to surround the content of elements with element tags.

Fragments Refactoring Actions

Contains predefined XML refactoring operations that pertain to XML fragments with some of the information preconfigured based upon the current context.

Insert XML fragment

Allows you to insert an XML fragment.

Replace element content with XML fragment

Allows you to replace the content of elements with an XML fragment.

Replace element with XML fragment

Allows you to replace elements with an XML fragment.

JATSKit Refactoring Actions

Contains predefined XML refactoring operations that pertain to JATS documents with some of the information preconfigured based upon the current context.

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Adds an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Adds a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Assigned IDs are normalized and IDs are assigned to some elements that are missing them.

Review submenu

This submenu includes the following actions:

Track Changes

Enables or disables the *Track Changes* support for the current document.

Accept Change(s) and Move to Next

Accepts the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is accepted.

Accept All Changes

Accepts all *Tracked Changes* in the current document.

Reject Change(s) and Move to Next

Rejects the *Tracked Change* located at the cursor position or all of the changes in a selection and then moves to the next change. If you select a part of a *deletion* or *insertion* change, only the selected content is rejected.

Reject All Changes

Rejects all *Tracked Changes* in the current document.

Comment Change

Opens a dialog box that allows you to add a comment to an existing *Tracked Change*. The comment will appear in a callout and a tooltip when hovering over the change. If the action is selected on an existing commented change, the dialog box will allow you to edit the comment.

Highlight

Enables the highlighting tool that allows you to mark text in your document.

Colors

Allows you to select the color for highlighting text.

Stop highlighting

Use this action to deactivate the highlighting tool.

Remove highlight(s)

Use this action to remove highlighting from the document.

Add Comment

Inserts a comment at the cursor position. The comment appears in a callout box and a tooltip (when hovering over the change).

Show/Edit Comment

Opens a dialog box that displays the discussion thread and allows the current user to edit comments that do not have replies. If you are not the author who inserted the original comment, the dialog box just displays the comment without the possibility of editing it.

Remove Comment

Removes a selected comment. If you remove a comment that contains replies, all of the replies will also be removed.

Manage Reviews

Opens the **Review** view.

Manage IDs submenu

This submenu is available for XML documents that have an associated DTD, XML Schema, or Relax NG schema. It includes the following actions:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References in

Searches for the references of the ID. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Occurrences in file

Searches for the occurrences of the ID in the current document.

Folding submenu

This submenu includes the following actions:

Toggle Fold

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the elements indented with one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

Inspect Styles

Opens the **CSS Inspector** view that allows you to examine the CSS rules that match the currently selected element.

Options

Opens the Author mode options page.

Document Type-Specific Contextual Menu Actions in Author Mode

Other *document type-specific* actions are available in the contextual menu of **Author** mode for the following document types (click the links to see the default actions that are available for each specific document types):

- **DocBook4** Author Actions
- **DocBook5** Author Actions
- **DITA** Author Actions
- **DITA Map** Author Actions
- **XHTML** Author Actions
- **TEI ODD** Author Actions
- **TEI P5** Author Actions
- **JATS** Author Actions

Validating XML Documents

The W3C XML specification states that a program should not continue to process an XML document if it finds a validation error. The reason is that XML software should be easy to write and all XML documents should be compatible. With HTML, for example, it is possible to create documents with lots of errors (for instance, when you forget an end tag). One of the main reasons that various HTML browsers have performance and compatibility problems is that they have different methods of figuring out how to render a document when an HTML error is encountered. Using XML helps to eliminate such problems.

Even when creating XML documents, errors are easily introduced. When working with large projects or a large number of files, the probability that errors will occur is even greater. Preventing and solving errors in your projects can be time consuming and frustrating. Fortunately, Oxygen XML Editor plugin provides validation functions that allow you to easily identify errors and their location.

Related Information:

Checking XML Well-Formedness

A *Well-formed XML* document is a document that conforms to the XML syntax rules. A *Namespace Well-Formed XML* document is a document that is *Well-formed XML* and is also *Namespace-wellformed* and *Namespace-valid*.

Well-Formedness Rules

The XML Syntax rules for *Well-formed XML* are as follows:

- All XML elements must have a closing tag.
- XML tags are case-sensitive.
- All XML elements must be properly nested.
- All XML documents must have a root element.
- Attribute values must always be quoted.
- With XML, whitespace is preserved.

The *Namespace-wellformed* rules are as follows:

- All element and attribute names contain either zero or one colon.
- No entity names, processing instruction targets, or notation names contain any colons.

The *Namespace-valid* rules are as follows:

- The *xml* prefix is by definition bound to the namespace name: *http://www.w3.org/XML/1998/namespace*. It MAY be declared, but MUST NOT be undeclared or bound to any other namespace name. Other prefixes MUST NOT be bound to this namespace name.
- The *xmlns* prefix is used only to declare namespace bindings and is by definition bound to the namespace name: *http://www.w3.org/2000/xmlns/*. It MUST NOT be declared or undeclared. Other prefixes MUST NOT be bound to this namespace name.
- All other prefixes beginning with the three-letter sequence *x*, *m*, *l*, in any case combination, are reserved. This means that users SHOULD NOT use them except as defined by later specifications and processors MUST NOT treat them as fatal errors.

- The namespace prefix (unless it is *xml* or *xmlns*) MUST have been declared in a namespace declaration attribute in either the start tag of the element where the prefix is used or in an ancestor element (for example, an element in whose content the prefixed markup occurs). Furthermore, the attribute value in the innermost such declaration MUST NOT be an empty string.

Check for Well-Formedness

To check if a document is *Namespace Well-Formed XML* and *Namespace-valid*, select the **Check Well-Formedness (Alt + Shift + V, W (Command + Alt + V, W on OS X))** action from the **XML** menu or from the **Validation** drop-down menu on the toolbar.

The selected files in the current project can also be checked for well-formedness with a single action by selecting the **Check Well-Formedness** action from the **Validate** submenu when invoking the contextual menu in the **Navigator** view.

If any errors are found, the result is displayed in the message panel at the bottom of the editor. Each error is displayed as one record in the result list and is accompanied by an error message. Clicking the record will open the document containing the error and highlight its approximate location.

Example: A non *Well-formed XML* Document

```
<root><tag></root>
```

When **Check Well-Formedness** is performed the following error is raised:

```
The element type "tag" must be terminated by the matching end-tag "</tag>"
```

To resolve the error, click the record in the result list and it will locate and highlight the approximate position of the error. In this case, identify the tag that is missing an end tag and insert </tag>.

Example: A non *Namespace-wellformed* Document

```
<x::y></x::y>
```

When **Check document form** is performed the following error is raised:

```
Element does not match QName production: QName::=(NCName':')?NCName.
```

Example: A non *Namespace-valid* Document

```
<x:y></x:y>
```

When **Check document form** is performed the following error is raised:

```
The prefix "x" for element "x:y" is not bound.
```

Validating XML Documents Against a Schema

A *Valid* XML document is a *Well-Formed* XML document that also conforms to the rules of a schema that defines the legal elements of an XML document. The schema type can be: XML Schema, Relax NG (full or compact syntax), Schematron, Document Type Definition (DTD), or Namespace-based Validation Dispatching Language (NVDL).

The purpose of the schema is to define the legal building blocks of an XML document. It defines the document structure with a list of legal elements.

The **Validate** function ensures that your document is compliant with the rules defined by an associated DTD, XML Schema, Relax NG, or Schematron schema. XML Schema or Relax NG schema also allows you to embed Schematron rules. For Schematron validations you can also select the **validation phase**.

Related Information:

Presenting Schematron Validation Issues

Associating a Schema to XML Documents on page 579

Automatic Validation

Oxygen XML Editor plugin can be configured to automatically mark validation errors in the document as you are editing. The **Enable automatic validation** option in the **Document Checking** preferences page controls whether or not all validation errors and warnings will automatically be highlighted in the editor panel.

The automatic validation starts parsing the document and marking the errors after a configurable delay from the last key typed. Errors are highlighted with underline markers in the main editor panel and small rectangles on the right side ruler of the editor panel. Hovering over a validation error presents a tooltip message with more details about the error.

Related Information:

Manual Validation Actions on page 562
Presenting Validation Errors in Text Mode on page 169
Presenting Validation Errors in Author Mode on page 213

Manual Validation Actions

You can choose to validate documents at any time by using the manual validation actions that are available in Oxygen XML Editor plugin.

Manual Validation Actions

To manually validate the currently edited document, use one of the following actions:

Validate (Alt + Shift + V, V)

Available from the **Validation** drop-down menu on the toolbar, the **XML** menu, or from the **Validate** submenu when invoking the contextual menu in the **Navigator** view.

An error list is presented in the message panel at the bottom of the editor. Markup of the current document is checked to conform with the specified DTD, XML Schema, or Relax NG schema rules. This action also re-parses the *XML Catalogs* and resets the schema used for content completion.

Validate (cached)

Available from the **Validation** drop-down menu on the toolbar or the **XML** menu.

This action caches the schema, allowing it to be reused for the next validation. Markup of the current document is checked to conform with the specified DTD, XML Schema, or Relax NG schema rules.

Note: Automatic validation also caches the associated schema.

Validate with

Available from the **Validation** drop-down menu on the toolbar, (or **XML** menu).

This action opens a dialog box that allows you to specify a schema for validating the current document.

You can use this action to validate the current document using a schema of your choice (XML Schema, DTD, Relax NG, NVDL, Schematron schema), other than the associated one. An error list is presented in the message panel at the bottom of the editor. Markup of current document is checked to conform with the specified schema rules.

Validate with Schema

Available from the **Validate** submenu when invoking contextual menu in the **Navigator** view.

This action opens a dialog box that allows you to specify a schema for validating all selected files.

Other Validation Options

To quickly open the schema used for validating the current document, select the **Open Associated Schema** action from the toolbar (or **XML** menu).

To clear the error markers added to the **Problems** view in the last validation, select **Clear Validation Markers** from the **Validate** submenu when invoking the contextual menu in the **Navigator** view .

Tip: If a large number of validation errors are detected and the validation process takes too long, you can limit the maximum number of reported errors in the **Document Checking** preferences page.

Related Information:

Automatic Validation on page 562
Presenting Validation Errors in Text Mode on page 169
Presenting Validation Errors in Author Mode on page 213

Presenting Validation Errors in Text Mode

Oxygen XML Editor plugin can be configured to automatically validate documents while editing in the **Text** mode, and actions are also available to manually validate documents on-request.

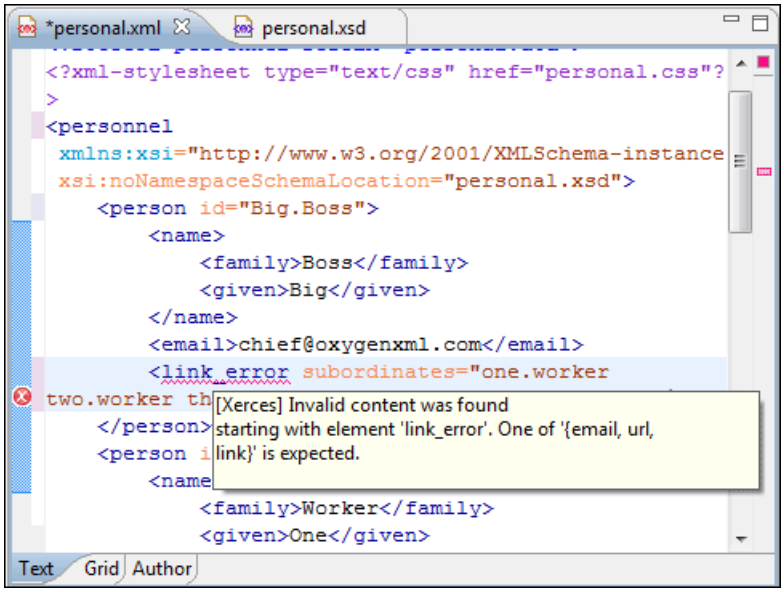


Figure 332: Presenting Validation Errors in Text Mode

Validation Marker Locations

In **Text** mode, validation issues are marked in the following locations:

- In the main editing pane, with the issue underlined in a color according to the type of issue.
- In the right-side vertical stripe, with a marker that is colored according to the type of issue.
- For attributes with detected issues, in the **Attributes** view, with the attribute and its value colored according to the type of issue.

Validation Marker Colors

The colors for each type of issue are as follows:

- **Validation Errors** [Red] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in red.
- **Validation Warnings** [Yellow] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in yellow.
- **Validation Info** [Blue] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in blue.

You can configure the colors and how the various types of validation problems are rendered from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Validation Markers in the Right-Side Stripe

Also, the stripe on the right side of the editor panel is designed to display the issues found during the validation process and to help you locate them in the document. The stripe contains the following:

Upper Part of the Stripe

A success indicator square will turn green if the validation is successful or only info messages are found, red if validation errors are found, or yellow if only validation warnings are found. More details about the issues are displayed in a tool tip when you hover over indicator square. If there are numerous problems, only the first three are presented in the tool tip.

Middle Part of the Stripe

Errors are depicted with red markers, warnings with yellow markers, and info message with blue markers. If you want to limit the number of markers that are displayed, open the **Preferences** dialog box , go to **Editor** > **Document checking**, and specify the desired limit in the **Maximum number of validation highlights** option.

Clicking a marker will highlight the corresponding text area in the editor. The validation message is also displayed both in a tool tip (when hovering over the marker) and in the message area on the bottom of the application.

Bottom Part of the Stripe

Two navigation arrows ( ) allow you to jump to the next or previous issue. The same actions can be triggered from **Document** > **Automatic validation** > **Next error** (**Ctrl + Period (Command + Period on OS X)**) and **Document** > **Automatic validation** > **Previous error** (**Ctrl + Comma (Command + Comma on OS X)**).

Hovering Over Validation Issues

Hovering over a validation issue presents a tooltip message with more details about the problem and possible *quick fixes* (if available for that issue). Also, when hovering over an issue, pressing **F2** will change the focus to the tooltip where you can use **Tab** and **Shift + Tab** to navigate between quick fixes and **Space** to trigger them.

Details About Validation Issues

- Information about the issue is also displayed in the message area on the bottom of the editor panel (clicking the **Document checking options** button opens the **Document Checking** preferences page where you can configure some validation options.
- Status messages from every validation action are logged in the **Console** view (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).
- If you want to see all the validation messages grouped in the **Results** view, you should use the **Validate** action from the toolbar or **XML** menu. This action also collects the validation messages and displays them in the **Problems** view if the validated file is in the current workspace or in a custom **Errors** view if the validated file is outside the workspace.

Related Information:

Validating XML Documents Against a Schema on page 561

Presenting Schematron Validation Issues

Presenting Validation Errors in Author Mode

Oxygen XML Editor plugin can be configured to automatically validate documents while editing in the **Author** mode, and actions are also available to manually validate documents on-request.

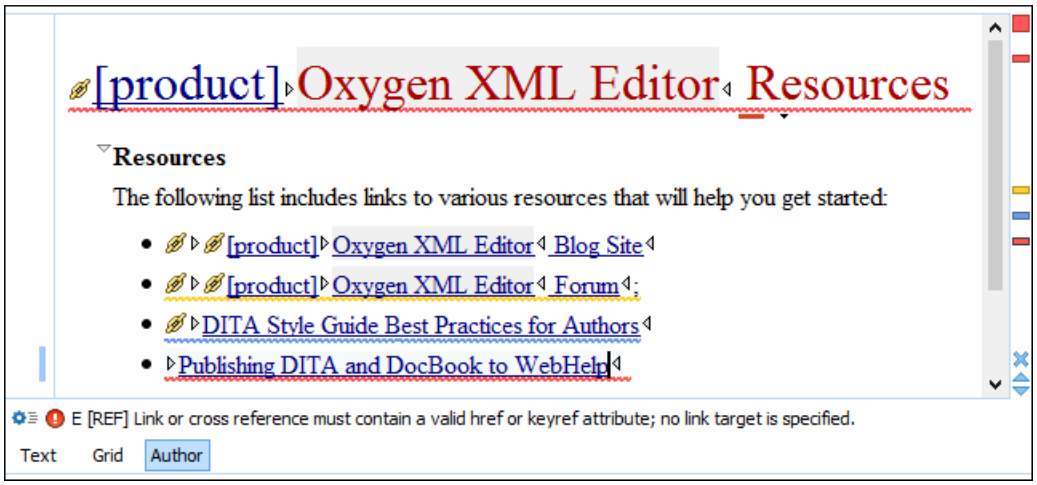


Figure 333: Presenting Validation Errors in Author Mode

Validation Marker Locations

In **Author** mode, validation issues are marked in the following locations:

- In the main editing pane, with the issue underlined in a color according to the type of issue.
- In the right-side vertical stripe, with a marker that is colored according to the type of issue.
- For attributes with detected issues, in the **Attributes** view, with the attribute and its value colored according to the type of issue.

Validation Marker Colors

The colors for each type of issue are as follows:

- **Validation Errors** [Red] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in red.
- **Validation Warnings** [Yellow] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in yellow.
- **Validation Info** [Blue] - By default, the underline in the editing pane, the marker in the right vertical stripe, and the foreground color of the attribute in the **Attributes** view are colored in blue.

Validation Markers in the Right-Side Stripe

Also, the stripe on the right side of the editor panel is designed to display the issues found during the validation process and to help you locate them in the document. The stripe contains the following:

Upper Part of the Stripe

A success indicator square will turn green if the validation is successful or only info messages are found, red if validation errors are found, or yellow if only validation warnings are found. More details about the issues are displayed in a tool tip when you hover over indicator square. If there are numerous problems, only the first three are presented in the tool tip.

Middle Part of the Stripe

Errors are depicted with red markers, warnings with yellow markers, and info message with blue markers. If you want to limit the number of markers that are displayed, open the **Preferences** dialog box , go to **Editor** > **Document checking**, and specify the desired limit in the **Maximum number of validation highlights** option.

Clicking a marker will highlight the corresponding text area in the editor. The validation message is also displayed both in a tool tip (when hovering over the marker) and in the message area on the bottom of the application.

Bottom Part of the Stripe

Two navigation arrows ( ) allow you to jump to the next or previous issue. The same actions can be triggered from **Document** > **Automatic validation** > **Next error** (**Ctrl + Period (Command + Period on OS X)**) and **Document** > **Automatic validation** > **Previous error** (**Ctrl + Comma (Command + Comma on OS X)**).

Hovering Over Validation Issues

Hovering over a validation issue presents a tooltip message with more details about the problem and possible *quick fixes* (if available for that issue). Also, when hovering over an issue, pressing **F2** will change the focus to the tooltip where you can use **Tab** and **Shift + Tab** to navigate between quick fixes and **Space** to trigger them.

Details About Validation Issues

- Information about the issue is also displayed in the message area on the bottom of the editor panel (clicking the **Document checking options** button opens the **Document Checking** preferences page where you can configure some validation options.
- Status messages from every validation action are logged in the **Console** view (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).
- If you want to see all the validation messages grouped in the **Results** view, you should use the **Validate** action from the toolbar or **XML** menu. This action also collects the validation messages and displays them in the **Problems** view if the validated file is in the current workspace or in a custom **Errors** view if the validated file is outside the workspace.

Related Information:

Validating XML Documents Against a Schema on page 561

Presenting Schematron Validation Issues

Customizing Assert Error Messages

To customize the error messages that the Xerces or Saxon validation engines display for the `assert` and `assertion` elements, set the `message` attribute on these elements.

- For Xerces, the `message` attribute has to belong to the `http://xerces.apache.org` namespace.
- For Saxon, the `message` attribute has to belong to the `http://saxon.sourceforge.net/` namespace.

The value of the `message` attribute is the error message displayed if the assertion fails.

Custom Validators

If you need to validate the edited document with a validation engine that is different from the built-in engine, you can configure external validators in the Custom Validation Engines preferences page. After a custom validation engine is properly configured, it can be applied on the current document by selecting it from the list of custom validation engines in the **Validation** toolbar drop-down menu. The document is validated against the schema declared in the document.

Some validators are configured by default but there are third-party processors that do not support the output message format of Oxygen XML Editor plugin for linked messages:

- **Saxon-EE** - Included in Oxygen XML Editor plugin. It is associated to XML Editor and XSD Editor. It is able to validate XML Schema schemas and XML documents against XML Schema schemas. The validation is done according to the W3C XML Schema 1.0 or 1.1. This can be configured in Preferences.
- **MSXML 4.0** - Included in Oxygen XML Editor plugin (Windows edition only). It is associated to XML Editor, XSD Editor and XSL Editor. It is able to validate the edited document against XML Schema, internal DTD (included in the XML document), external DTD or a custom schema type.
- **MSXML.NET** - Included in Oxygen XML Editor plugin (Windows edition only). It is associated to XML Editor, XSD Editor and XSL Editor. It is able to validate the edited document against XML Schema, internal DTD (included in the XML document), external DTD or a custom schema type.
- **LIBXML** - Not included in Oxygen XML Editor plugin and, depending on your operating system, the libraries need to be downloaded and installed separately from http://xmlsoft.org/downloads.html. Afterwards, the PATH environment variable needs to be updated to contain the parent folder of the `xmllint` executable. Alternatively, you can go to **Options** > **Preferences** > **Editor** > **Custom Validation Engines**, edit the **LIBXML** validation engine and set a custom path to the `xmllint` executable.

  The LIBXML validator is associated with the XML Editor. It is able to validate the edited document against XML Schema, Relax NG schema full syntax, internal DTD (included in the XML document) or a custom schema type. Support for *XML Catalogs* (the `--catalogs` parameter) and XInclude processing (`--xinclude`) are enabled by default in the preconfigured LIBXML validator. The `--postvalid` parameter is also set by default and it

allows LIBXML to validate correctly the main document even if the XInclude fragments contain IDREFS to ID's located in other fragments.

For validation against an external DTD specified by URI in the XML document, add the `--dtdvalid ${ds}` parameter manually to the DTD validation command line. `${ds}` represents the detected DTD declaration in the XML document.

CAUTION: File paths containing spaces are not handled correctly in the LIBXML processor. For example, the built-in *XML Catalog* files of the predefined document types (DocBook, TEI, DITA, etc.) are not handled by LIBXML if Oxygen XML Editor plugin is installed in the default location on Windows (`C:\Program Files`) because the built-in *XML catalog* files are stored in the `frameworks` subfolder of the installation folder and in this case, the file path contains at least one space character.

Attention: On OS X, if the full path to the LIBXML executable file is not specified in the **Executable path** text field, some errors may occur during validation against a W3C XML Schema, such as:

```
Unimplemented block at ... xmlschema.c
```

To avoid these errors, specify the full path to the LIBXML executable file.

- **XSV** - Not included in Oxygen XML Editor plugin. Windows and Linux distributions of XSV can be downloaded from http://www.cogsci.ed.ac.uk/~ht/xsv-status.html. The executable path is already configured in Oxygen XML Editor plugin for the *[OXYGEN_INSTALL_DIR]*`/xsv` installation folder. If it is installed in a different folder, the predefined executable path must be corrected in Preferences. It is associated to XML Editor and XSD Editor. It is able to validate the edited document against XML Schema or a custom schema type.
- **SQC (Schema Quality Checker from IBM)** - Not included in Oxygen XML Editor plugin. It can be downloaded from here (it comes as a .zip file, at the time of this writing SQC2.2.1.zip is about 3 megabytes).
  The executable path and working directory are already configured for the SQC installation directory *[OXYGEN_INSTALL_DIR]*`/sqc`. If it is installed in a different folder, the predefined executable path and working directory must be corrected in the Preferences page. It is associated to XSD Editor.

Linked Output Messages of an External Engine

Validation engines display messages in an output view at the bottom of the Oxygen XML Editor plugin window. If such an output message (**warning**, **error**, **fatal error**, etc) spans between three to six lines of text and has the format specified below, then the message is linked to a location in the validated document. Clicking the message in the output view highlights the location of the message in an editor panel containing the file referenced in the message. This behavior is similar to the linked messages generated by the default built-in validator.

Linked messages have the following format:

- **Type**: [F|E|W] (the string *Type:* followed by a letter for the type of the message: fatal error, error, warning). This property is optional in a linked message.
- **SystemID**: A system ID of a file (the string `SystemID:` followed by the system ID of the file that will be opened for highlighting when the message is clicked in the output message - usually the validated file, the schema file or an included file).
- **Line**: A line number (the string *Line:* followed by the number of the line that will be highlighted).
- **Column**: A column number (the string *Column:* followed by the number of the column where the highlight will start on the highlighted line). This property is optional in a linked message.
- **EndLine**: A line number (the string **EndLine**: followed by the number of the line where the highlight ends). This property is optional in a linked message.
- **EndColumn**: A column number (the string **EndColumn**: followed by the number of the column where the highlight ends on the end line). This property is optional in a linked message.

  Note: The **Line**/**Column** pair works in conjunction with the **EndLine**/**EndColumn** pair. Thus, if both pairs are specified, then the highlight starts at **Line**/**Column** and ends at **EndLine**/**EndColumn**. If the **EndLine**/**EndColumn** pair is missing, the highlight starts from the beginning of the line identified by the **Line** parameter and ends at the column identified by the **Column** parameter.
- **AdditionalInfoURL**: The URL string pointing to a remote location where additional information about the error can be found - this line is optional in a linked message.
- **Description**: Message content (the string *Description:* followed by the content of the message that will be displayed in the output view).

Example:

Example of how a custom validation engine can report an error using the format specified above:

```
Type: E
SystemID: file:///c:/path/to/validatedFile.xml
Line: 10
Column: 20
EndLine: 10
EndColumn: 35
AdditionalInfoURL: http://www.host.com/path/to/errors.html#errorID
Description: custom validator message
```

Validation Scenarios

A complex XML document is split in smaller interrelated modules. These modules do not make much sense individually and cannot be validated in isolation due to interdependencies with other modules. Oxygen XML Editor plugin validates the main module of the document when an imported module is checked for errors.

A typical example is the chunking of a DocBook XSL stylesheet that has `chunk.xsl` as the main module and `param.xsl`, `chunk-common.xsl`, and `chunk-code.xsl` as imported modules. `param.xsl` only defines XSLT parameters. The module `chunk-common.xsl` defines an XSLT template with the name `chunk`. `Chunk-code.xsl` calls this template. The parameters defined in `param.xsl` are used in the other modules without being redefined.

Validating `chunk-code.xsl` as an individual XSLT stylesheet generates misleading errors in regards to parameters and templates that are used but undefined. These errors are only caused by ignoring the context in which this module is used in real XSLT transformations and in which it is validated. To validate such a module, define a validation scenario to set the main module of the stylesheet and the validation engine used to find the errors. Usually this engine applies the transformation during the validation process to detect the errors that the transformation generates.

You can validate a stylesheet with several engines to make sure that you can use it in various environments and have the same results. For example, an XSLT stylesheet may be applied with Saxon 6.5, Xalan, and MSXML 4.0 engines in different production systems.

Other examples of documents that can benefit from a validation scenario include:

- A complex XQuery file with a main module that imports modules developed independently but validated in the context of the main module of the query. In an XQuery validation scenario, the default validator of Oxygen XML Editor plugin (Saxon 9) or any connection to a database that supports validation (Berkeley DB XML Database, eXist XML Database, Documentum xDB (X-Hive/DB) 10 XML Database, MarkLogic version 5 or newer) can be set as a validation engine.
- An XML document in which the *master file* includes smaller fragment files using XML entity references.

  Note: If a *master file* is associated with the current file, the validation scenarios defined in the *master file*, along with any Schematron schema defined in the default scenarios for that particular *framework*, are used for the validation. These take precedence over other types of validation units defined in the default scenarios for the particular *framework*. For more information on *master files*, see Master Files Support on page 381 or Working with Modular XML Files in the Master Files Context on page 588.

For more information about how to use a validation scenario in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/9RMPcckVMJA

Related Information:

Validating XML Documents Against a Schema on page 561
Presenting Validation Errors in Author Mode on page 213
Presenting Validation Errors in Text Mode on page 169

Creating a New Validation Scenario

To create a validation scenario, follow these steps:

1. Select the **Configure Validation Scenario(s)** from the toolbar, or from the **XML** menu (or the **Validate** submenu when invoking the contextual menu on a file in the **Navigator** view).

The **Configure Validation Scenario(s)** dialog box is displayed. It contains predefined and user-defined scenarios. The predefined scenarios are organized in categories depending on the type of file they apply to and you can identify them by a yellow key icon that marks them as *read-only*. The user-defined scenarios are organized under a single category. The default scenarios for the particular *framework* are rendered in bold.

Note: If a *master file* is associated with the current file, the validation scenarios defined in the *master file*, along with any Schematron schema defined in the default scenarios for that particular *framework*, are used for the validation. These take precedence over other types of validation units defined in the default scenarios for the particular *framework*. For more information on *master files*, see Master Files Support on page 381 or Working with Modular XML Files in the Master Files Context on page 588.

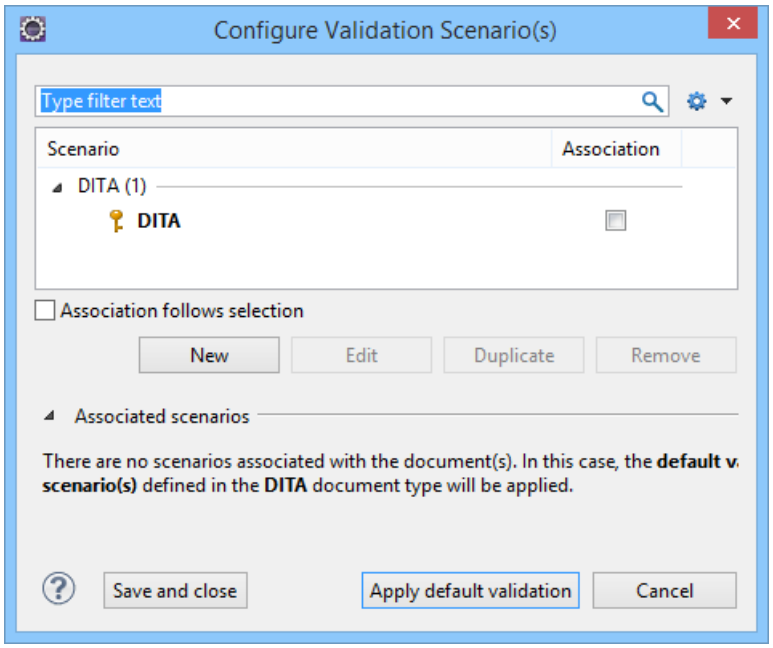


Figure 334: Configure Validation Scenario Dialog Box

The top section of the dialog box contains a filter that allows you to search through the scenarios list and the

Settings button allows you to configure the following options:

Show all scenarios

Select this option to display all the available scenarios, regardless of the document they are associated with.

Show only the scenarios available for the editor

Select this option to only display the scenarios that Oxygen XML Editor plugin can apply for the current document type.

Show associated scenarios

Select this option to only display the scenarios associated with the document you are editing.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export selected scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export. This is useful if you want to share scenarios with others or export them to another computer.

2. To add a scenario, click the **New** button.
The **New scenarios** dialog box is displayed and it lists all the validation units for the scenario.

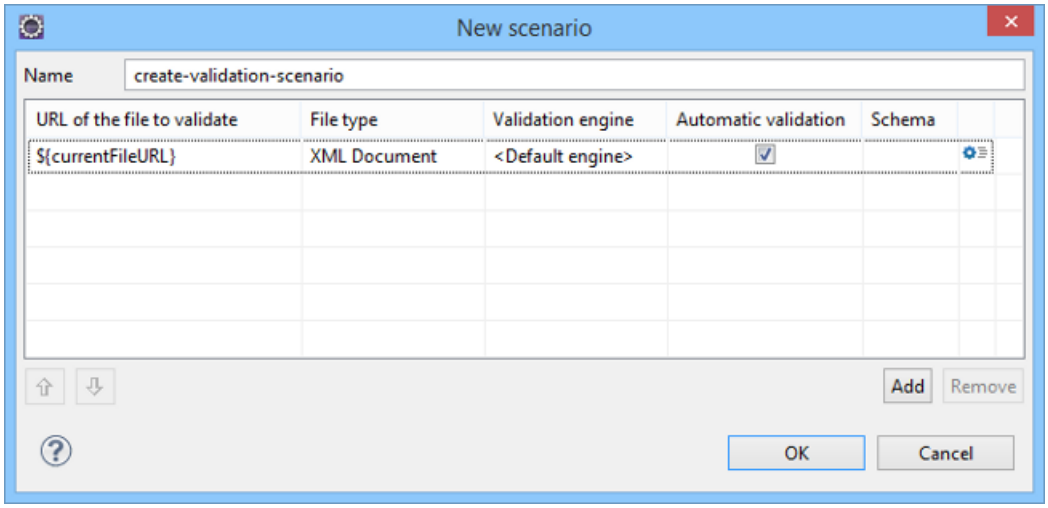


Figure 335: Create New Validation Scenario

This scenario configuration dialog box allows you to configure the following information and options:

Name

The name of the validation scenario.

URL of the file to validate

The URL of the main module that includes the current module. It is also the entry module of the validation process when the current one is validated. To edit the URL, click its cell and specify the URL of the main module by doing one of the following:

- Enter the URL in the text field or select it from the drop-down list.
- Use the **Browse** drop-down button to browse for a local, remote, or archived file.
- Use the **Insert Editor Variable** button to insert an editor variable or a custom editor variable.

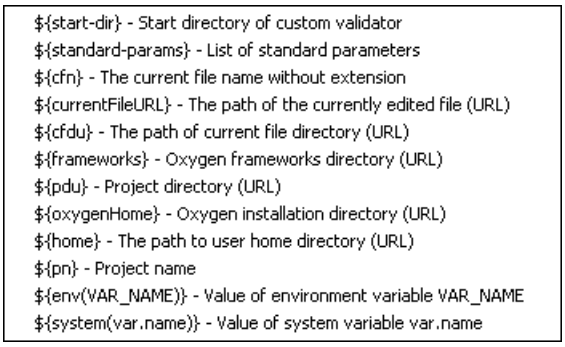


Figure 336: Insert an Editor Variable

File type

The type of the document that is validated in the current validation unit. Oxygen XML Editor plugin automatically selects the file type depending on the value of the **URL of the file to validate** field.

Validation engine

You can select one of the engines available in Oxygen XML Editor plugin for validation of the particular document type.

Default engine means that the default engine is used to run the validation for the current document type, as specified in the preferences page for that type of document (for example, XSLT preferences page, XQuery preferences page, XML Schema preferences page).

The **DITA Validation** engine performs DITA-specific checks in the context of the specifications (it is similar to the checks done with the **DITA Maps Manager** **Validate and Check for Completeness** action, but for a local file rather than an entire *DITA map*).

The **Table Layout Validation** engine looks for table layout problems (for more information, see Report table layout problems on page).

Automatic validation

If this option is selected, the validation operation defined by this row is also applied by the automatic validation feature. If the **Automatic validation** feature is disabled in the Document Checking preferences page, then this option is ignored, as the preference setting has a higher priority.

Schema

This option becomes active when you set the **File type** to **XML Document** and allows you to specify the schema used for the validation unit.

Specify Schema

Opens the **Specify Schema** dialog box that allows you to set a schema to be used for validating XML documents.

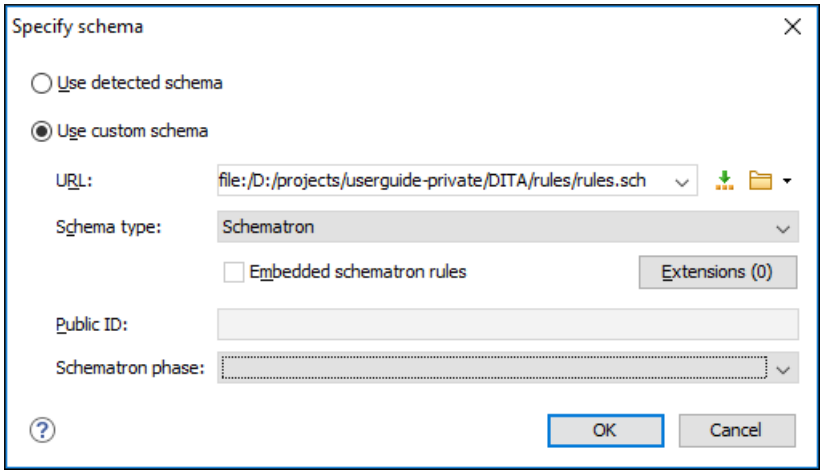


Figure 337: Specify Schema Dialog Box

The **Specify Schema** dialog box contains the following options:

Use detected schema

Uses the schema detected for the particular document.

Use custom schema

Allows you to specify the schema using the following options:

- **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
- **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.

- **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
- **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
- **Public ID** - Allows you to specify a public ID if you have selected a DTD.
- **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

Move Up

Moves the selected scenario up one spot in the list.

Move Down

Moves the selected scenario down one spot in the list.

Add

Adds a new validation unit to the list.

Remove

Removes an existing validation unit from the list.

3. Configure any of the existing validation units according to the information above, and you can use the buttons at the bottom of the table to add, remove, or move validation units. Note that if you add a Schematron validation unit, you can also select the **validation phase**.
4. Press **OK**.
   The newly created validation scenario will now be included in the list of scenarios in the **Configure Validation Scenario(s)** dialog box. You can select the scenario in this dialog box to associate it with the current document and press the **Apply associated** button to run the validation scenario.

Editing a Validation Scenario

To edit an existing validation scenario, follow these steps:

1. Select the **Configure Validation Scenario(s)** from the toolbar, or from the **XML** menu (or the **Validate** submenu when invoking the contextual menu on a file in the **Navigator** view).
   The **Configure Validation Scenario(s)** dialog box is displayed. It contains predefined and user-defined scenarios. The predefined scenarios are organized in categories depending on the type of file they apply to and you can identify them by a yellow key icon that marks them as *read-only*. The user-defined scenarios are organized under a single category. The default scenarios for the particular *framework* are rendered in bold.

   Note: If a *master file* is associated with the current file, the validation scenarios defined in the *master file*, along with any Schematron schema defined in the default scenarios for that particular *framework*, are used for the validation. These take precedence over other types of validation units defined in the default scenarios for the particular *framework*. For more information on *master files*, see Master Files Support on page 381 or Working with Modular XML Files in the Master Files Context on page 588.

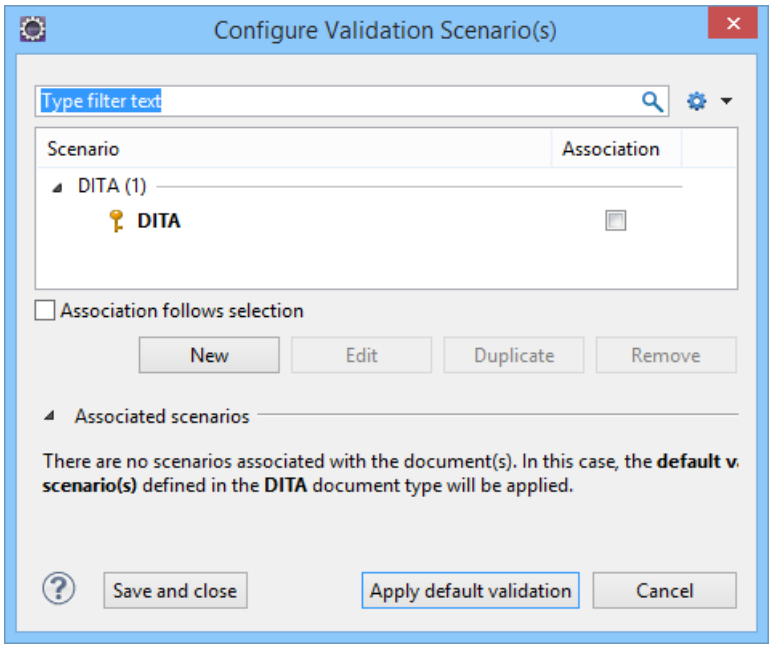


Figure 338: Configure Validation Scenario Dialog Box

The top section of the dialog box contains a filter that allows you to search through the scenarios list and the

Settings button allows you to configure the following options:

Show all scenarios

Select this option to display all the available scenarios, regardless of the document they are associated with.

Show only the scenarios available for the editor

Select this option to only display the scenarios that Oxygen XML Editor plugin can apply for the current document type.

Show associated scenarios

Select this option to only display the scenarios associated with the document you are editing.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export selected scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export. This is useful if you want to share scenarios with others or export them to another computer.

2. Select the scenario and press the **Edit** button. If you try to edit one of the *read-only* predefined scenarios, you will receive a warning message that Oxygen XML Editor plugin needs to creates customizable duplicate (you can also use the **Duplicate** button).
   The **Edit scenario** dialog box is displayed and it lists all the validation units for the scenario.

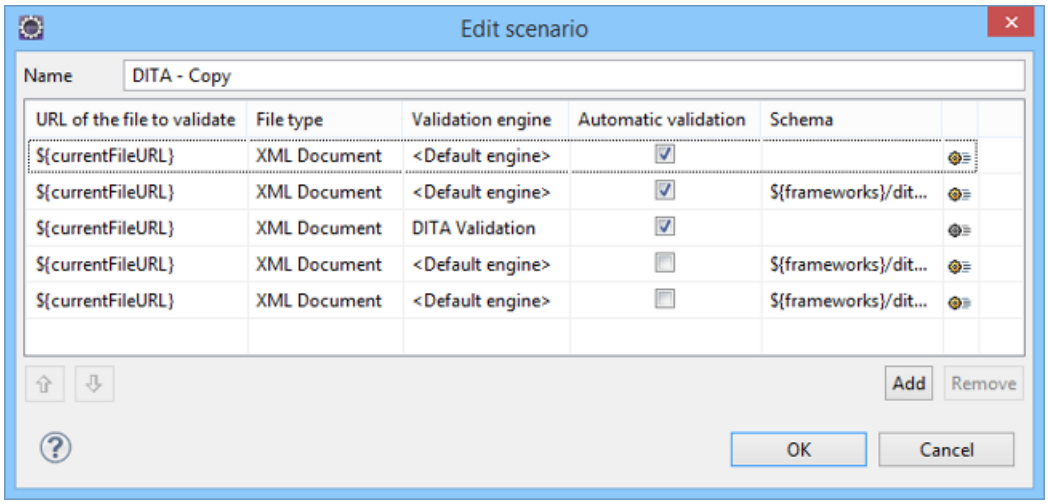


Figure 339: Edit Validation Scenario

This scenario configuration dialog box allows you to configure the following information and options:

Name

The name of the validation scenario.

URL of the file to validate

The URL of the main module that includes the current module. It is also the entry module of the validation process when the current one is validated. To edit the URL, click its cell and specify the URL of the main module by doing one of the following:

- Enter the URL in the text field or select it from the drop-down list.
- Use the **Browse** drop-down button to browse for a local, remote, or archived file.
- Use the **Insert Editor Variable** button to insert an editor variable or a custom editor variable.

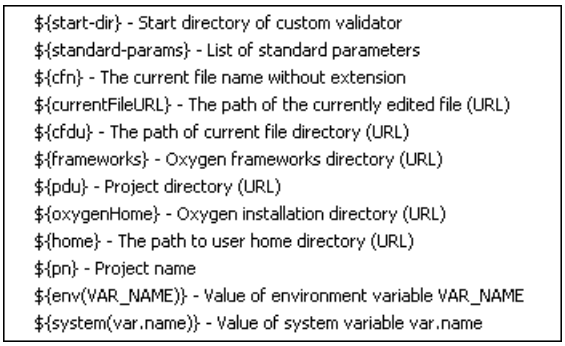


Figure 340: Insert an Editor Variable

File type

The type of the document that is validated in the current validation unit. Oxygen XML Editor plugin automatically selects the file type depending on the value of the **URL of the file to validate** field.

Validation engine

You can select one of the engines available in Oxygen XML Editor plugin for validation of the particular document type.

Default engine means that the default engine is used to run the validation for the current document type, as specified in the preferences page for that type of document (for example, XSLT preferences page, XQuery preferences page, XML Schema preferences page).

The **DITA Validation** engine performs DITA-specific checks in the context of the specifications (it is similar to the checks done with the **DITA Maps Manager** **Validate and Check for Completeness** action, but for a local file rather than an entire *DITA map*).

The **Table Layout Validation** engine looks for table layout problems (for more information, see Report table layout problems on page).

Automatic validation

If this option is selected, the validation operation defined by this row is also applied by the automatic validation feature. If the **Automatic validation** feature is disabled in the Document Checking preferences page, then this option is ignored, as the preference setting has a higher priority.

Schema

This option becomes active when you set the **File type** to **XML Document** and allows you to specify the schema used for the validation unit.

Specify Schema

Opens the **Specify Schema** dialog box that allows you to set a schema to be used for validating XML documents.

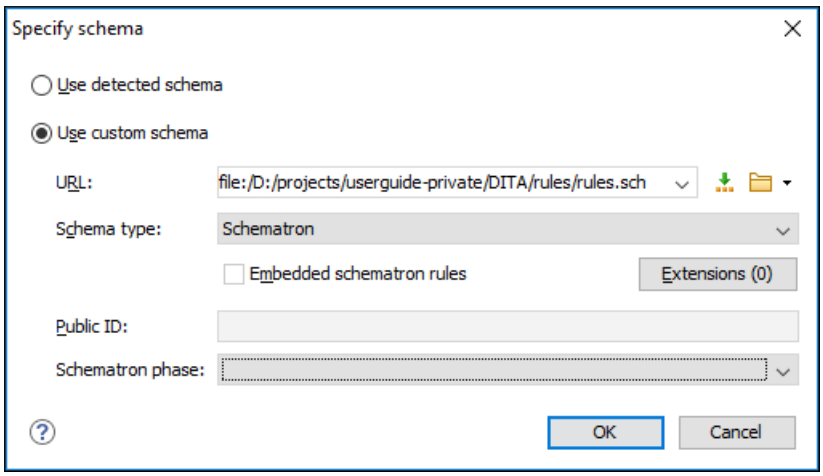


Figure 341: Specify Schema Dialog Box

The **Specify Schema** dialog box contains the following options:

Use detected schema

Uses the schema detected for the particular document.

Use custom schema

Allows you to specify the schema using the following options:

- **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
- **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
- **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
- **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
- **Public ID** - Allows you to specify a public ID if you have selected a DTD.
- **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

Move Up

Moves the selected scenario up one spot in the list.

Move Down

Moves the selected scenario down one spot in the list.

Add

Adds a new validation unit to the list.

Remove

Removes an existing validation unit from the list.

3. Configure any of the existing validation units according to the information above, and you can use the buttons at the bottom of the table to add, remove, or move validation units. Note that if you add a Schematron validation unit, you can also select the **validation phase**.
4. When you are done configuring the scenario, press **OK**.
   The modified validation scenario will now be included in the list of scenarios in the **Configure Validation Scenario(s)** dialog box. If you chose to duplicate an existing one, the modified scenario will be listed with the word *copy* at the end of its name.

Sharing Validation Scenarios

The validation scenarios and their settings can be shared with other users by exporting them to a specialized scenarios file that can then be imported.

Resolving References to Remote Schemas with an XML Catalog

When a reference to a remote schema must be used in the validated XML document for interoperability purposes, but a local copy of the schema should actually be used for performance reasons, the reference can be resolved to the local copy of the schema with an *XML Catalog*.

For example, if the XML document contains a reference to a remote schema `docbook.rng` like this:

```
<?xml-model href="http://www.oasis-open.org/docbook/xml/5.0/rng/docbook.rng"
    type="application/xml" schematypens="http://relaxng.org/ns/structure/1.0"?>
```

it can be resolved to a local copy with a catalog entry like this:

```
<uri name="http://www.oasis-open.org/docbook/xml/5.0/rng/docbook.rng"
    uri="rng/docbook.rng"/>
```

An *XML Catalog* can also be used to map a W3C XML Schema specified with a URN in the `xsi:schemaLocation` attribute of an XML document to a local copy of the schema. For example, if the XML document specifies the schema with:

```
<topic xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xsi:noNamespaceSchemaLocation="urn:oasis:names:tc:dita:xsd:topic.xsd:1.1">
```

the URN can be resolved to a local schema file with a catalog entry like this:

```
<uri name="urn:oasis:names:tc:dita:xsd:topic.xsd:1.1"
    uri="topic.xsd"/>
```

Related Information:

Working with XML Catalogs on page 591

Validation Example - A DocBook Validation Error

In the following DocBook 4 document, the content of the `listitem` element does not match the rules of the DocBook 4 schema (`docbookx.dtd`).

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE article PUBLIC "-//OASIS//DTD DocBook XML V4.4//EN"
    "http://www.docbook.org/xml/4.4/docbookx.dtd">
<article>
    <title>Article Title</title>
    <sect1>
      <title>Section1 Title</title>
```

```
      <itemizedlist>
        <listitem>
          <link>a link here</link>
        </listitem>
      </itemizedlist>
    </sect1>
</article>
```

The **Validate Document** action will return the following error:

```
Unexpected element "link". The content of the parent element type must match
"(calloutlist|glosslist|bibliolist|itemizedlist|orderedlist|segmentedlist|simplelist
|variablelist|caution|important|note|tip|warning|literallayout|programlisting
|programlistingco|screen|screenco|screenshot|synopsis|cmdsynopsis|funcsynopsis
|classsynopsis|fieldsynopsis|constructorsynopsis|destructorsynopsis|methodsynopsis
|formalpara|para|simpara|address|blockquote|graphic|graphicco|mediaobject|mediaobjectco
|informalequation|informalexample|informalfigure|informaltable|equation|example|figure
|table|msgset|procedure|sidebar|qandaset|task|anchor|bridgehead|remark|highlights
|abstract|authorblurb|epigraph|indexterm|beginpage)+".
```

This error message is a little more difficult to understand, so understanding of the syntax or processing rules for the DocBook XML DTD `listitem` element is recommended. However, the error message does offer a clue as to the source of the problem, indicating that “The content of element type must match”.

Fortunately, most standards-based DTDs, XML Schemas, and Relax NG schemas are supplied with reference documentation. This enables you to lookup the element and read about it. In this case, you should learn about the child elements of `listitem` and their nesting rules. Once you have correctly inserted the required child element and nested it in accordance with the XML rules, the document will become valid.

XML Quick Fixes

The Oxygen XML Editor plugin *Quick Fix* support helps you resolve errors that appear in an XML document by offering *Quick Fixes* to problems such as missing required attributes or invalid elements. *Quick Fixes* are available in **Text** mode and **Author** mode

To activate this feature, hover over or place the cursor in the highlighted area of text where a validation error or warning occurs. If a *Quick Fix* is available for that particular error or warning, you can access the *Quick Fix* proposals with any of the following methods:

- When hovering over the error or warning, the proposals may be presented in a tooltip pop-up window and the available quick *Quick Fixes* include a link that can be used to perform the fix.

Figure 342: Quick Fix Presented in a Tooltip in Text Mode

Figure 343: Quick Fix Presented in a Tooltip in Author Mode

- When hovering over the error or warning in **Author** mode, a small *Quick Fix* drop-down menu is presented. You can use the drop-down menu to display a list of available *Quick Fixes* to select from for the particular error or warning.

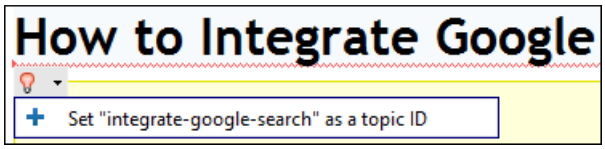


Figure 344: Quick Fix Drop-Down Menu in Author Mode

- If you place the cursor in the highlighted area where a validation error or warning occurs, a *Quick Fix* icon ( ) is displayed in the stripe on the left side of the editor. If you click this icon, Oxygen XML Editor plugin displays the list of available fixes.

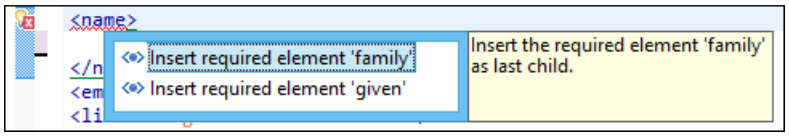


Figure 345: Quick Fix Menu Invoked by Clicking on the Icon

- With the cursor placed in the highlighted area of the error or warning, you can also invoke the *Quick Fix* menu by pressing **Ctrl + 1 (Command + 1 on OS X)** on your keyboard.

Whenever you make a modification in the XML document or you apply a fix, the list of *Quick Fixes* is recomputed to ensure that you always have valid proposals.

Note: A *Quick Fix* that adds an element inserts it along with required and optional elements, and required and fixed attributes, depending on how the **Content Completion** preferences are configured.

Quick Fixes for DTD, XSD, and Relax NG Errors

Oxygen XML Editor plugin offers *Quick Fixes* for common errors that appear in XML documents that are validated against DTD, XSD, or Relax NG schemas.

Note: For XML documents validated against XSD schemas, the *Quick Fixes* are only available if you use the default Xerces validation engine.

Quick Fixes are available in **Text** mode and **Author** mode.

Oxygen XML Editor plugin provides *Quick Fixes* for numerous types of problems, including the following:

Problem Type	Available Quick Fixes
A specific element is required in the current context	Insert the required element
An element is invalid in the current context	Remove the invalid element
The content of the element should be empty	Remove the element content
An element is not allowed to have child elements	Remove all child elements
Text is not allowed in the current element	Remove the text content
A required attribute is missing	Insert the required attribute
An attribute is not allowed to be set for the current element	Remove the attribute
The attribute value is invalid	Propose the correct attribute values
ID value is already defined	Generate a unique ID value
References to an invalid ID	Change the reference to an already defined ID

Related Information:

Schematron Quick Fixes (SQF) on page 579

Schematron Quick Fixes (SQF)

Oxygen XML Editor plugin provides support for Schematron *Quick Fixes* (SQF). They help you resolve issues that appear in XML documents that are validated against Schematron schemas by offering you solution proposals. The Schematron *Quick Fixes* are an extension of the Schematron language and they allow you to define fixes for Schematron validation messages. Specifically, they are associated with *assert* or *report* messages.

A typical use case is using Schematron *Quick Fixes* to assist content authors with common editing tasks. For example, you can use Schematron rules to automatically report certain validation warnings (or errors) when performing regular editing tasks, such as inserting specific elements or changing IDs to match specific naming conventions. For more details and examples, please see the following blog post: http://blog.oxygenxml.com/2015/05/schematron-checks-to-help-technical.html.

Displaying the Schematron Quick Fix Proposals

The defined Schematron *Quick Fixes* are displayed on validation errors in **Text** mode and **Author** mode.

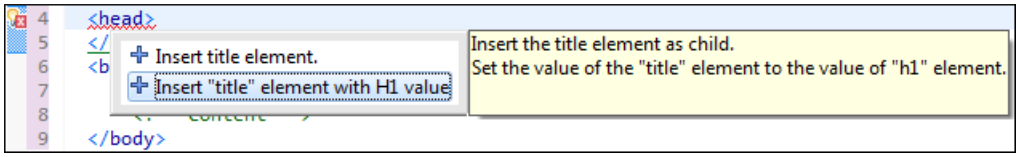


Figure 346: Example of a Schematron Quick Fix

Related Information:

Editing Schematron Quick Fixes on page 800

Schematron Quick Fix Specifications

Presenting Schematron Validation Issues

Associating a Schema to XML Documents

Oxygen XML Editor plugin relies on schemas to validate XML documents and to compute valid proposals for the *Content Completion Assistant*.

Supported Types of Schema

The following schema types are supported:

- W3C XML Schema 1.0 and 1.1 (with and without embedded Schematron rules)
- DTD
- Relax NG - XML syntax (with and without embedded Schematron rules)
- Relax NG - compact syntax
- NVDL
- Schematron (both ISO Schematron and Schematron 1.5)

Detecting a Schema

For the purposes of using validation and content completion mechanisms, Oxygen XML Editor plugin tries to detect a schema by searching multiple locations, in the following order:

- The schema defined in a validation scenario.
- The schema defined in the validation scenarios associated with the particular document type (if defined).
- The schema that is associated directly in the XML document.

  Note: If a DTD schema is specified in the document, the content completion for **Author** mode is based on this schema (even if there is already one detected from the validation scenario).
- The schema defined in the *framework* (document type) configuration.

In addition, the locations of the schema can be mapped through the use of an *XML Catalog*. For more information, see Resolving Schema Locations Through XML Catalogs on page 586.

Tip: To quickly open the schema used for validating the current document, select the **Open Associated Schema** action from the toolbar (or **XML** menu).

Related Information:

Associating a Schema Through a Validation Scenario

Oxygen XML Editor plugin uses the rules defined in the detected schema to report errors and warnings during automatic and manual validations that help maintain the structural integrity of your XML documents. You can specify the schema to be used for validation directly in validation scenarios and there are several methods that can be used to do so.

Configure a Validation Scenario and Specify the Schema

To associate a schema to a validation scenario to be used whenever the scenario is invoked, follow these steps:

1. Select the **Configure Validation Scenario(s)** from the toolbar, or from the **XML** menu (or the **Validate** submenu when invoking the contextual menu on a file in the **Navigator** view).
2. Press the **New** button to create a new validation scenario or the **Edit** button to modify an existing one.
3. Add or configure validation units according to your needs and click the **Specify Schema** button.

   Step Result: The **Specify Schema** dialog box is displayed:

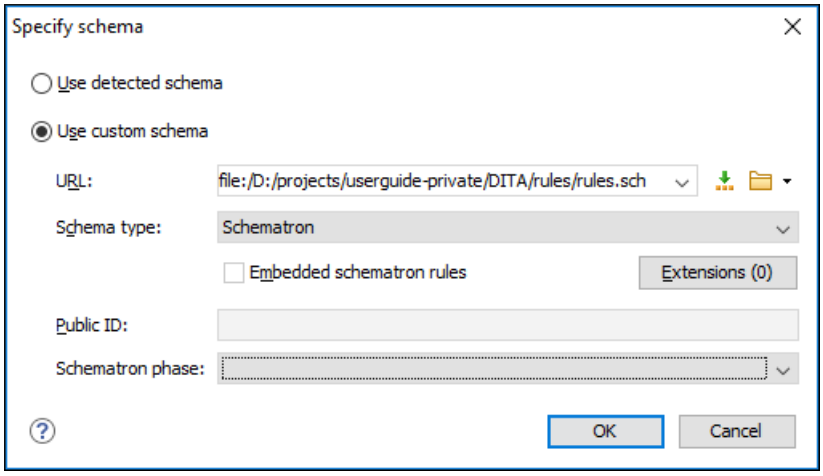


Figure 347: Specify Schema Dialog Box

The **Specify Schema** dialog box contains the following options:

Use detected schema

Uses the schema detected for the particular document.

Use custom schema

Allows you to specify the schema using the following options:

- **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
- **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
- **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
- **Public ID** - Allows you to specify a public ID if you have selected a DTD.
- **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.

- **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

4. Select the schema to be associated with the validation unit and configure the rest of the options according to your preferences.
5. Click **OK** on both dialog boxes.

Result: The schema is now associated with that validation scenario whenever it is invoked.

Use the Validate with Action to Specify a Schema for Validating the Current Document

To validate the current document using a specified schema, follow these steps:

1. Select the **Validation with** action from the **Validation** drop-down menu on the toolbar (or **XML** menu).

   Step Result: The **Validate with** dialog box is displayed:

Figure 348: Validate with Dialog Box

   This dialog box contains the following options:

   - **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
   - **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
   - **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
   - **Public ID** - Allows you to specify a public ID if you have selected a DTD.
   - **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
   - **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

2. Select the schema to be associated with the manual validation and configure the rest of the options according to your preferences.
3. Click **OK**.

Result: The current document is validated using the schema you specified.

Tip: To quickly open the schema used for validating the current document, select the **Open Associated Schema** action from the toolbar (or **XML** menu).

Use the Validate with Schema Action to Specify a Schema for Validating all Selected Documents

To validate multiple documents using a specified schema, follow these steps:

1. Select all the documents you want to validate in the **Navigator** view.

2. Invoke the contextual menu (right-click) and select the **Validate with Schema** action from the **Validate** submenu.

   Step Result: The **Validate with** dialog box is displayed:

   Figure 349: Validate with Dialog Box

   This dialog box contains the following options:

   - **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
   - **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
   - **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
   - **Public ID** - Allows you to specify a public ID if you have selected a DTD.
   - **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
   - **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.
3. Select the schema that you want to use to validate all selected documents and configure the rest of the options according to your preferences.
4. Click **OK**.

Result: The selected documents are validated using the schema you specified.

Associating a Schema in Validation Scenarios Defined in the Document Type

To report errors and warnings during automatic and manual validations that help maintain the structural integrity of particular XML document types, Oxygen XML Editor plugin uses rules defined in the schema that is detected in the validation scenarios that are associated to each particular document type.

To associate a schema in validation scenarios defined in the *framework* (document type) configuration, follow these steps:

1. Open the **Preferences** dialog box and go to **Document Type Association**.
2. Select your particular document type and click the **Edit** or **Duplicate** button to modify an existing *framework* (or use the **New** button to create a new one).

   Step Result: This opens a **Document type** configuration dialog box.
3. Go to the **Validation** tab.
4. Create or edit a validation scenario:

   a. To create a new validation scenario, click the **New** button.

   b. To edit the properties of an existing validation scenario, select it and click the **Edit** button (you can also use the **Duplicate** button to copy an existing scenario and edit its properties).

5. Add or configure validation units according to your needs and click the **Specify Schema** button.

   Step Result: The **Specify Schema** dialog box is displayed:

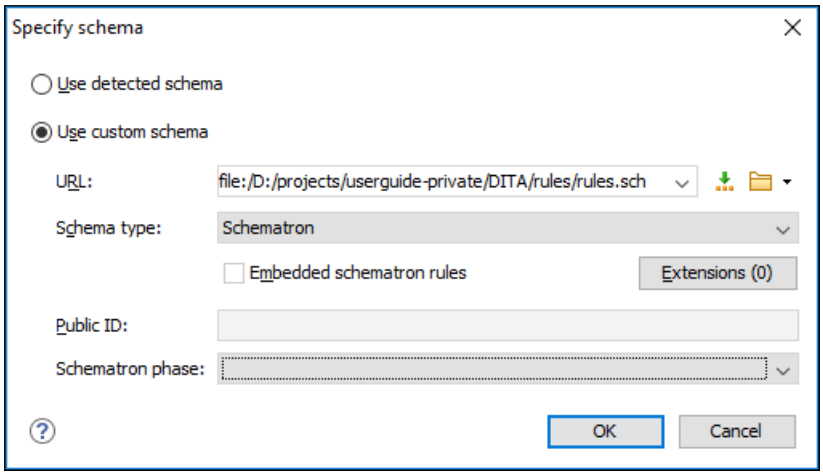


Figure 350: Specify Schema Dialog Box

The **Specify Schema** dialog box contains the following options:

Use detected schema

Uses the schema detected for the particular document.

Use custom schema

Allows you to specify the schema using the following options:

- **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
- **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
- **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
- **Public ID** - Allows you to specify a public ID if you have selected a DTD.
- **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
- **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

6. Select the schema to be associated with the validation unit and configure the rest of the options according to your preferences.
7. Click **OK** on both dialog boxes.

Result: The schema is now associated with the validation scenario you just configured for that particular document type.

Associating a Schema Directly in XML Documents

Associate Schema Action

The schema used by the *Content Completion Assistant* and document validation engine can be associated with the current document by using the **Associate Schema** action. For most of the schema types, it uses the *xml-model* processing instruction, with the exceptions of:

- **W3C XML Schema** - The `xsi:schemaLocation` attribute is used.

- **DTD** - The DOCTYPE declaration is used.

The association can specify a relative file path or a URL of the schema. The advantage of relative file path is that you can configure the schema at file level instead of *framework* level.

To associate a schema to the current document, follow these steps:

1. Select the **Associate Schema** action from the toolbar (or **Document** > **Schema** menu).

   Step Result: The **Associate Schema** dialog box is displayed:

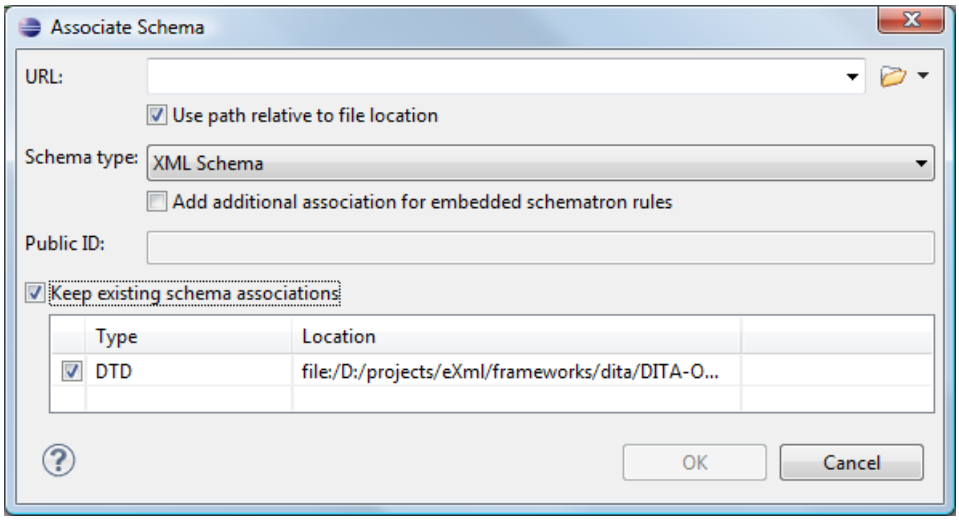


Figure 351: Associate Schema Dialog Box

   This dialog box contains the following options:

   - **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S).
   - **Use path relative to file location** - Select this option if the XML instance document and the associated schema contain relative paths. The location of the schema file is inserted in the XML instance document as a relative file path. This practice allows you, for example, to share these documents with other users without running into problems caused by multiple project locations on physical disk.
   - **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
   - **Add additional association for embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
   - **Public ID** - Allows you to specify a public ID if you have selected a DTD.
   - **Keep existing schema associations** - Select this option to use the existing schema associations of the currently edited document.
2. Select the schema that will be associated with the XML document and configure the rest of the options according to your preferences.
3. Click **OK**.

Result: The schema association is created based upon the specified type.

- **XML Schema** - The association with an XML Schema is added as an attribute of the root element with one of the following:
  - `xsi:schemaLocation` attribute, if the root element of the document sets a default namespace with an `xmlns` attribute.
  - `xsi:noNamespaceSchemaLocation` attribute, if the root element does not set a default namespace.
- **DTD** - The association with a DTD is added as a DOCTYPE declaration.

- **Other** - The association with a Relax NG, Schematron, or NVDL schema is added as *xml-model* processing instruction.

Tip: To quickly open the schema used for validating the current document, select the **Open Associated Schema** action from the toolbar (or **XML** menu).

Associate Schema with the `xml-model` Processing Instruction

The `xml-model` processing instruction associates a schema with the XML document that contains the processing instruction. It must be added at the beginning of the document, just after the XML prolog. The following code snippet contains an `xml-model` processing instruction declaration:

```
<?xml-model href="../schema.sch" type="application/xml"
 schematypens="http://purl.oclc.org/dsdl/schematron" phase="ALL"
 title="Main schema"?>
```

It is available in the *Content Completion Assistant*, before XML document root element, and includes the following attributes:

- `href` (required) - The schema file location.
- `type` - The content type of the schema. This is an optional attribute with the following possible values for each specified type:
  - DTD - The recommended value is `application/xml-dtd`.
  - W3C XML Schema - The recommended value is `application/xml`, or can be left unspecified.
  - RELAX NG XML Syntax - The recommended value is `application/xml`, or can be left unspecified.
  - RELAX NG Compact Syntax - The recommended value is `application/relax-ng-compact-syntax`.
  - Schematron - The recommended value is `application/xml`, or can be left unspecified.
  - NVDL - The recommended value is `application/xml`, or can be left unspecified.
- `schematypens` - The namespace for the schema language of the referenced schema with the following possible values:
  - DTD - Not specified.
  - W3C XML Schema - The recommended value is `http://www.w3.org/2001/XMLSchema`.
  - RELAX NG XML Syntax - The recommended value is `http://relaxng.org/ns/structure/1.0`.
  - RELAX NG Compact Syntax - Not specified.
  - Schematron - The recommended value is `http://purl.oclc.org/dsdl/schematron`.
  - NVDL - The recommended value is `http://purl.oclc.org/dsdl/nvdl/ns/structure/1.0`.
- `phase` - The phase name for the validation function in Schematron schema. This is an optional attribute. To run all phases from the Schematron, use the special **#ALL** value. If the phase is not specified, the default phase that is configured in the Schematron will be applied.
- `title` - The title for the associated schema. This is an optional attribute.

Older versions of Oxygen XML Editor plugin used the `oxygen` processing instruction with the following attributes:

- `RNGSchema` - Specifies the path to the Relax NG schema that is associated with the current document.
- `type` - Specifies the type of Relax NG schema. It is used along with the `RNGSchema` attribute and can have the value **xml** or **compact**.
- `NVDLSchema` - Specifies the path to the NVDL schema that is associated with the current document.
- `SCHSchema` - Specifies the path to the SCH schema that is associated with the current document.

Note: Documents that use the `oxygen` processing instruction are compatible with newer versions of Oxygen XML Editor plugin.

Related Information:

Validating XML Documents on page 560
Content Completion Assistant in Text Mode on page 412
Content Completion Assistant in Author Mode on page 459

Associating a Schema in a Framework (Document Type) Configuration

The schema used to compute valid proposals in the *Content Completion Assistant* and by the document validation engine to report errors and warnings can be defined in each particular *framework* (document type). This schema will be used only if one is not detected in the current XML file.

To associate a schema in a particular *framework* (document type), follow these steps:

1. Open the **Preferences** dialog box and go to **Document Type Association**.
2. Select your particular document type and click the **Edit**, **Extend**, or **Duplicate** button to modify an existing *framework* (or use the **New** button to create a new one).

   Step Result: This opens a **Document type** configuration dialog box.
3. Go to the **Schema** tab.
4. Select the schema type and its URI.
5. Click **OK**.

Result: The schema is now associated with the particular document type and will be used by the *Content Completion Assistant* and validation engine if a schema is not detected in the current XML document.

Resolving Schema Locations Through XML Catalogs

Schema locations can be mapped using an *XML Catalog*. Oxygen XML Editor plugin resolves the location of a schema in the following order:

- First, it attempts to resolve the schema location as a URI (`uri`, `uriSuffix`, `rewriteUri`, `delegateUri` mappings from the *XML Catalog*). If this succeeds, the process end here.
- If the **Resolve schema locations also through system mappings** option is selected, it attempts to resolve the schema location as a system ID (`system`, `systemSuffix`, `rewriteSuffix`, `rerwriteSystem` from the *XML Catalog*). If this succeeds, the process ends here.
- If the **Process "schemaLocation" namespaces through URI mappings for XML Schema** option is selected, the target namespace of the imported XML Schema is resolved through URI mappings. If the schema specified in the *schemaLocation* attribute is not resolved successfully, the namespace of the root element is taken into account. If this succeeds, the process ends here.
- If none of these succeeds, the actual schema location is used.

Related Information:

Working with XML Catalogs on page 591

Learn Document Structure when Schema is not Detected

When working with documents that do not specify a schema, or for which the schema is not known or does not exist, Oxygen XML Editor plugin is able to learn and translate the document structure to a DTD. You can choose to save the learned structure to a file to provide a DTD as an initialization source for content completion and document validation. This feature is also useful for producing DTDs for documents that contain personal or custom element types.

When you open a document that is not associated with a schema, Oxygen XML Editor plugin automatically learns the document structure and uses it for content completion. To disable this feature, deselect the **Learn on open document** option in the user preferences.

Related Information:

Detecting a Schema on page 579

Create a DTD from Learn Document Structure Option

When there is no schema associated with an XML document, Oxygen XML Editor plugin can learn the document structure by parsing the document internally. This feature is enabled by the **Learn on open document** option that is available in the user preferences.

To create a DTD from the learned structure, follow these steps:

1. Open the XML document for which a DTD will be created.
2. Go to **XML** > **Learn Structure** (**Ctrl + Shift + L (Command + Shift + L on OS X)**).

The **Learn Structure** action reads the mark-up structure of the current document. The **Learn completed** message is displayed in the application status bar when the action is finished.

3. Go to **XML** > **Save Structure** (**Ctrl + Shift + S (Command + Shift + S on OS X)**) and enter the DTD file path.
4. Press the **Save** button.

Search and Refactoring Actions for IDs and IDREFS

Oxygen XML Editor plugin allows you to search for ID declarations and references (IDREFS) and to define the scope of the search and refactor operations. These operations are available for XML documents that have an associated DTD, XML Schema, or Relax NG schema. These operations are available through the search and refactor actions in the contextual menu. In **Text** mode, these actions are also available in the **Quick Assist** menu.

The search and refactor actions from the contextual menu are grouped in the **Manage IDs** section:

Rename in

Renames the ID and all its occurrences. Selecting this action opens the **Rename XML ID** dialog box. This dialog box lets you insert the new ID value and choose the scope of the rename operation. For a preview of the changes you are about to make, click **Preview**. This opens the **Preview** dialog box, which presents a list with the files that contain changes and a preview zone of these changes.

Rename in File

Renames the ID you are editing and all its occurrences from the current file.

Note: Available in the **Text** mode only.

Search References

Searches for the references of the ID. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Search References in

Searches for the references of the ID. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Search Declarations

Searches for the declaration of the ID reference. By default, the scope of this action is the current project. If you configure a scope using the **Select the scope for the Search and Refactor operations** dialog box, this scope will be used instead.

Note: Available in the **Text** mode only.

Search Declarations in

Searches for the declaration of the ID reference. Selecting this action opens the **Select the scope for the Search and Refactor operations**.

Note: Available in the **Text** mode only.

Search Occurrences in file

Searches for the declaration and references of the ID in the current document.

Tip: A quick way to go to the declaration of an ID in **Text** mode is to move the cursor over an ID reference and use the **Ctrl + Single-Click (Command + Single-Click on OS X)** navigation.

Selecting an ID that you use for search or refactor operations differs between the **Text** and **Author** modes. In the **Text** mode, you position the cursor inside the declaration or reference of an ID. In the **Author** mode, Oxygen XML Editor plugin collects all the IDs by analyzing each element from the path to the root. If more IDs are available, you are prompted to choose one of them.

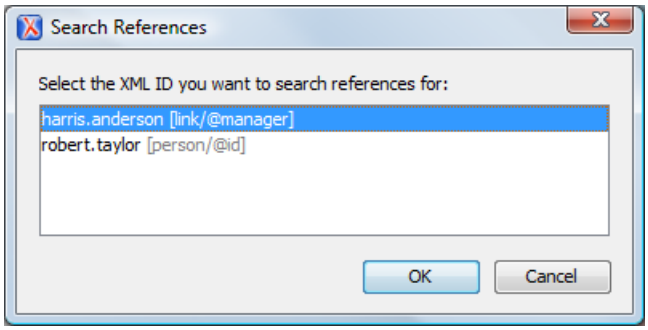


Figure 352: Selecting an ID in the Author Mode

Related Information:

Search and Refactor Operations Scope

The *scope* is a collection of documents that define the context of a search and refactor operation. To control it you can use the **Change scope** operation, available in the *Quick Fix* action set or on the **Resource Hierarchy/ Dependency View** toolbar. You can restrict the scope to the current project or to one or multiple *working sets*. The **Use only Master Files, if enabled** checkbox allows you to restrict the scope of the search and refactor operations to the resources from the **Master Files** directory. Click **read more** for details about the *Master Files* support.

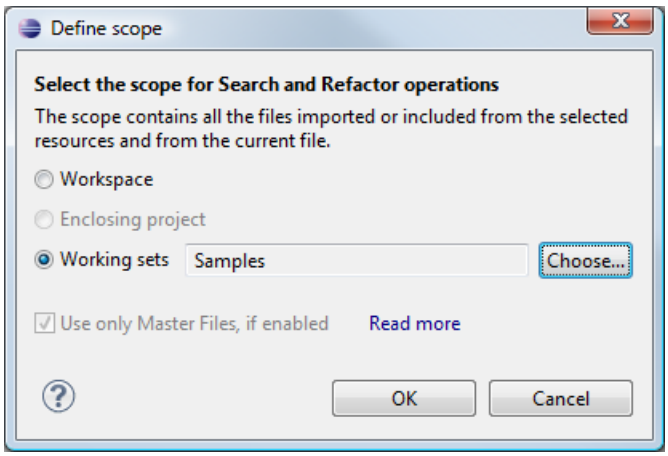


Figure 353: Change Scope Dialog Box

The scope you define is applied to all future search and refactor operations until you modify it. Contextual menu actions allow you to add or delete files, folders, and other resources to the *working set* structure.

Working with Modular XML Files in the Master Files Context

Smaller interrelated modules that define a complex XML modular structure cannot be correctly edited or validated individually, due to their interdependency with other modules. Oxygen XML Editor plugin provides the support for defining the main module (or modules), allowing you to edit any file from the hierarchy in the context of the *master files*.

You cat set a main XML document either using the *master files* support from the Navigator view, or using a validation scenario.

To set a *master file* using a validation scenario, add validation units that point to the main modules. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main XML document. In this case, it considers the current module as the main XML document.

The advantages of working with modular XML files in the context of a *master file* include:

- Correct validation of a module in the context of a larger XML structure.
- *Content Completion Assistant* displays all collected entities and IDs starting from the *master files*.

- Oxygen XML Editor plugin uses the schema defined in the *master file* when you edit a module that is included in the hierarchy through the *External Entity* mechanism.
- The *master files* defined for the current module determines the scope of the search and refactoring actions for ID/IDREFS values and for updating references when renaming/moving a resource. Oxygen XML Editor plugin performs the search and refactoring actions in the context that the *master files* determine, improving the speed of execution.

For more information about editing modular XML files in the *master files* context, watch our video demonstration:

https://www.youtube.com/embed/e2oo4RWNxW8

Related Information:

Master Files Support on page 381
XML Resource Hierarchy/Dependencies View on page 589

XML Resource Hierarchy/Dependencies View

The **Resource Hierarchy/Dependencies** view allows you to easily see the hierarchy / dependencies for an XML document. The tree structure presented in this view is built based on the *XIinclude* and *External Entity* mechanisms. To define the scope for calculating the dependencies of a resource, click **Configure dependencies search scope** on the **Resource Hierarchy/Dependencies** toolbar.

To open this view, go to **Window** > **Show View** > **Other** > **Oxygen XML Editor plugin** > **Resource Hierarchy/Dependencies**. As an alternative, right-click the current document and either select **Resource Hierarchy** or **Resource Dependencies**.

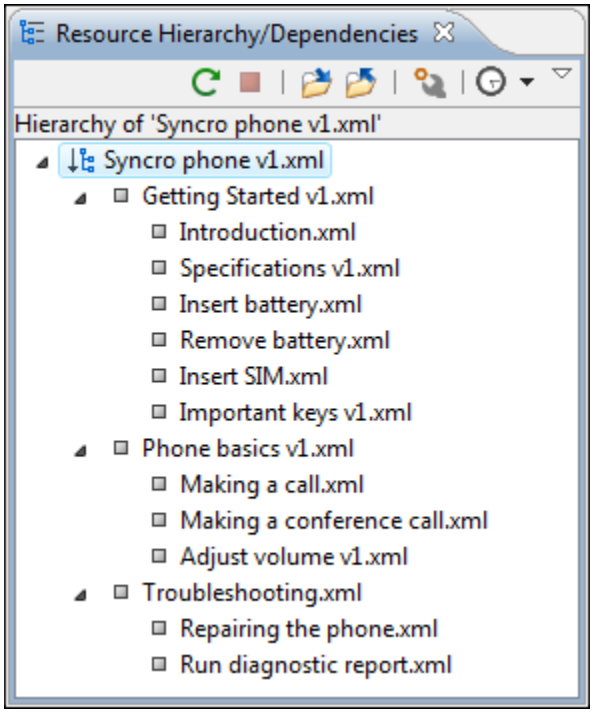


Figure 354: Resource Hierarchy/Dependencies View - Hierarchy for `Syncro phone v1.xml`

The build process for the dependencies view is started with the **Resource Dependencies** action available on the contextual menu.

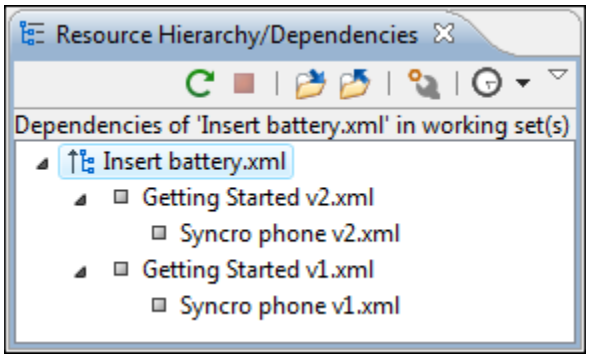


Figure 355: Resource Hierarchy/Dependencies View - Dependencies for `Insert battery.xml`

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Note: The **Move resource** or **Rename resource** actions give you the option to update the references to the resource. Only the references made through the *XInclude* and *External Entity* mechanisms are handled.

Related Information:

Search and Refactor Operations Scope on page 588

Moving/Renaming XML Resources

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

Working with XML Catalogs

Oxygen XML Editor plugin uses *XML Catalogs* to resolve references for validations and transformations and they are especially helpful for resolving external resources when internet access is not available or your connection is slow.

Oxygen XML Editor plugin supports any *XML Catalog* file that conforms to one of the following:

1. OASIS XML Catalogs Committee Specification v1.1.
2. OASIS Technical Resolution 9401:1997, including the plain-text flavor described in that resolution.

The version 1.1 of the OASIS *XML Catalog* specification introduces the possibility to map a system ID, public ID, or a URI to a local copy using only a suffix of the ID or URI used in the actual document. This is done using the catalog elements *systemSuffix* and *uriSuffix*.

Depending on the resource type, Oxygen XML Editor plugin uses different catalog mappings.

Table 37: Catalog Mappings

Doc Type	Referenced Resource	Mappings
XML	DTD	*system* or *public* The **Prefer** option controls which one of the mappings should be used.
	XML Schema Relax NG Schematron NVDL	The following strategy is used (if one step fails to provide a resource, the next is applied): 1. resolve the schema using *URI* catalog mappings. 2. resolve the schema using *system* catalog mappings. This happens only if the **Resolve schema locations also through system mappings** option is selected (it is by default). 3. resolve the root *namespace* using *URI* catalog mappings.

Doc Type	Referenced Resource	Mappings
XSL	XSL/ANY	*URI*
CSS	CSS	*URI*
XML Schema	XML Schema	The following strategy is used (if one step fails to provide a resource, the next is applied): **1.** resolve schema reference using *URI* catalog mappings. **2.** resolve schema reference using *system* catalog mappings. This happens only if the **Resolve schema locations also through system mappings** option is selected (it is by default). **3.** resolve schema *namespace* using *URI* catalog mappings. This happens only if the **Process namespaces through URI mappings for XML Schema** option is selected (it is not by default).
Relax NG	Relax NG	

Creating an XML Catalog with a Template

An *XML Catalog* file can be created quickly in Oxygen XML Editor plugin starting from the two document templates called *OASIS XML Catalog 1.0* and *OASIS XML Catalog 1.1*. They are available when creating new document templates.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE catalog
      PUBLIC "-//OASIS//DTD XML Catalogs V1.1//EN"
      "http://www.oasis-open.org/committees/entity/release/1.1/catalog.dtd">

<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">

    <!-- Use "system" and "public" mappings when resolving DTDs -->
    <system
          systemId="http://www.docbook.org/xml/4.4/docbookx.dtd"
          uri="frameworks/docbook/4.4/dtd/docbookx.dtd"/>

    <!-- "systemSuffix" matches any system ID ending in a specified string -->
    <systemSuffix
          systemIdSuffix="docbookx.dtd"
          uri="frameworks/docbook/dtd/docbookx.dtd"/>

    <!-- Use "uri" for resolving XML Schema and XSLT stylesheets -->
    <uri
          name="http://www.oasis-open.org/docbook/xml/5.0/rng/docbook.rng"
          uri="frameworks/docbook/5.0/rng/docbookxi.rng"/>

    <!-- The "uriSuffix" matches any URI ending in a specified string -->
    <uriSuffix
          uriSuffix="docbook.xsl"
          uri="frameworks/docbook/xsl/fo/docbook.xsl"/>

</catalog>
```

How Oxygen XML Editor plugin Determines which Catalog to Use

Oxygen XML Editor plugin uses *XML Catalogs* to resolve references for validations and transformations and it maps such references to the built-in local copies of the schemas associated with the various *frameworks* (DocBook, DITA, TEI, XHTML, SVG, etc.)

Oxygen XML Editor plugin includes default global catalogs as well as default catalogs for each of the built-in *frameworks*, and you can also create your own.

Oxygen XML Editor plugin looks for catalogs in the following order:

- Global user-defined catalogs that are set in the **XML Catalog** preferences page.
- User-defined catalogs that are set for each *frameworks* in the **Catalog** tab of the **Document Type** configuration dialog box.
- Default built-in catalogs.

Example:

An *XML Catalog* can be used to map a W3C XML Schema specified with an URN in the `xsi:noNamespaceSchemaLocation` attribute of an XML document to a local copy of the schema.

Considering the following XML document code snippet:

```
<topic xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
     xsi:noNamespaceSchemaLocation="urn:oasis:names:tc:dita:xsd:topic.xsd:1.1">
```

The URN can be resolved to a local schema file with a catalog entry like this:

```
<uri name="urn:oasis:names:tc:dita:xsd:topic.xsd:1.1"
    uri="topic.xsd"/>
```

Related Information:

XML Catalog Preferences on page 103

Resolving Schema Locations Through XML Catalogs

Schema locations can be mapped using an *XML Catalog*. Oxygen XML Editor plugin resolves the location of a schema in the following order:

- First, it attempts to resolve the schema location as a URI (`uri`, `uriSuffix`, `rewriteUri`, `delegateUri` mappings from the *XML Catalog*). If this succeeds, the process end here.
- If the **Resolve schema locations also through system mappings** option is selected, it attempts to resolve the schema location as a system ID (`system`, `systemSuffix`, `rewriteSuffix`, `rerwriteSystem` from the *XML Catalog*). If this succeeds, the process ends here.
- If the **Process "schemaLocation" namespaces through URI mappings for XML Schema** option is selected, the target namespace of the imported XML Schema is resolved through URI mappings. If the schema specified in the *schemaLocation* attribute is not resolved successfully, the namespace of the root element is taken into account. If this succeeds, the process ends here.
- If none of these succeeds, the actual schema location is used.

Related Information:

Working with XML Catalogs on page 591

Combining XML Content Using DTD Entities and XInclude

When documenting large projects, it is likely that there are multiple people involved. In this case, it is usually more efficient to using a modular approach so that everyone involved in the project can work in parallel. Other advantages of modular documentation include: reusable content possibilities, smaller file units are easier to edit, and better version control.

Two possible solutions for this are to use **DTD Entities** or **XInclude** to combine XML content in a *master file*. A master document can be created with references to various document parts, users can edit those documents individually, and then apply an XSLT stylesheet over the master document to obtain the output files in various formats (for example, PDF or HTML).

Combining XML Document Content Using DTD Entities

There are two conditions for including a document fragment using DTD entities:

- The master document should declare the DTD to be used, while the external entities should declare the XML fragments to be referenced.
- The referenced documents that contain the fragments cannot also define the DTD because the main document will not be valid. If you want to validate the parts separately you have to use XInclude for assembling the parts together with the *master file*.

The master document looks like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE book SYSTEM "../xml/docbookx.dtd" [
<!ENTITY testing SYSTEM "testing.xml" > ]
>
<book>
<chapter> ...
```

The referenced document (*testing.xml*) looks like this:

```
<section> ... here is the section content ... </section>
```

Note:

The indicated DTD and the element names (*section*, *chapter*) are used here only for illustrating the inclusion mechanism. You can use any DTD and element names you need.

The content from the referenced file (in the example above, it's a `section` in the *test.xml* file) can be inserted somewhere in the master document:

```
... &testing; ...
```

To obtain output in various formats (for example, PDF or HTML), you simply need to apply an XSLT stylesheet over the master document using a transformation scenario.

Viewing the Expanded Content in Oxygen XML Editor plugin

When a transformation scenario is applied on the *master file*, an intermediary file combines all the referenced content and it will be expanded in the final output. If you want to see how the referenced content will be expanded before applying the transformation, you can do one of the following:

- Simply switch to **Author** mode.
- Create a minimal XSLT stylesheet that simply copies the XML content, then create a new XSLT transformation scenario that applies the stylesheet over the XML. The XSLT stylesheet would look like this:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:math="http://www.w3.org/2005/xpath-functions/math"
    exclude-result-prefixes="xs math"
    version="3.0">
    <xsl:template match="node() | @*">
        <xsl:copy>
            <xsl:apply-templates select="node() | @*"/>
        </xsl:copy>
    </xsl:template>

</xsl:stylesheet>
```

Combining XML Documents and Fragments Using XInclude

XInclude is a standard for assembling XML instances into another XML document through inclusion. A *master file* can be dynamically created from smaller XML documents without having to physically duplicate the content of the smaller files. The advantage of using XInclude instead of the DTD Entities method is that each of the assembled documents is permitted to contain a Document Type Declaration (DOCTYPE). This means that each file is a valid XML instance and can be independently validated. It also means that the main document, which includes smaller instances, can be validated without having to remove or comment out the DOCTYPE (as is the case with External Entities).

Enabling XInclude Support in Oxygen XML Editor plugin

The XInclude support in Oxygen XML Editor plugin is enabled by default. It is controlled by the **Enable XInclude processing** option in the **XML** > **XML Parser** preferences page. When enabled, Oxygen XML Editor plugin will be able to validate and transform documents comprised of parts added using XInclude.

Example: Using XInclude to Combine Files

A chapter file (`introduction.xml`) looks like this:

```
<?xml version="1.0"?>
<!DOCTYPE chapter PUBLIC "-//OASIS//DTD DocBook XML V4.3//EN"
"http://www.oasis-open.org/docbook/xml/4.3/docbookx.dtd">
<chapter>
    <title>Getting started</title>
    <section>
        <title>Section title</title>
        <para>Para text</para>
    </section>
</chapter>
```

The main article (*master file*) looks like this:

```
<?xml version="1.0"?>
<!DOCTYPE article PUBLIC "-//OASIS//DTD DocBook XML V4.3//EN"
"http://www.docbook.org/xml/4.3/docbookx.dtd"
[ <!ENTITY % xinclude SYSTEM "../frameworks/docbook/dtd/xinclude.mod">
%xinclude;
]>
<article>
    <title>Install guide</title>
    <para>This is the install guide.</para>
    <xi:include xmlns:xi="http://www.w3.org/2001/XInclude"
                href="introduction.xml">
      <xi:fallback>
        <para>
          <emphasis>FIXME: MISSING XINCLUDE CONTENT</emphasis>
        </para>
      </xi:fallback>
    </xi:include>
</article>
```

In this example, note the following:

- The DOCTYPE declaration defines an entity that references a file containing the information to add the *xi* namespace to certain elements defined by the DocBook DTD.
- The href attribute of the xi:include element specifies that the `introduction.xml` file will replace the *xi:include* element when the document is parsed.
- If the `introduction.xml` file cannot be found, the parser will use the value of the *xi:fallback* element - a *FIXME* message.

Example: Using XInclude to Combine Fragments of Files

If you want to include only a fragment of a file in the *master file*, the fragment must be contained in a tag having an `xml:id` attribute and you must use an XPointer expression pointing to the `xml:id` value.

Notice: Oxygen XML Editor plugin supports the XPointer *Framework* and the XPointer element() Scheme, but it does NOT support the XPointer xpointer() Scheme.

For example, if the *master file* is:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-model href="test.rng" type="application/xml"
        schematypens="http://relaxng.org/ns/structure/1.0"?>
<test>
    <xi:include href="a.xml" xpointer="a1"
        xmlns:xi="http://www.w3.org/2001/XInclude"/>
</test>
```

and the file (`a.xml`) is:

```
<?xml version="1.0" encoding="UTF-8"?>
<test>
    <a xml:id="a1">test</a>
</test>
```

after resolving the XPointer reference, the document is:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-model href="test.rng" type="application/xml"
        schematypens="http://relaxng.org/ns/structure/1.0"?>
<test>
    <a xml:id="a1" xml:base="a.xml">test</a>
</test>
```

Viewing the Expanded Content in Oxygen XML Editor plugin

When a transformation scenario is applied on the *master file*, an intermediary file combines all the referenced content and it will be expanded in the final output. If you want to see how the referenced content will be expanded before applying the transformation, you can do one of the following:

- Simply switch to **Author** mode.
- Create a minimal XSLT stylesheet that simply copies the XML content, then create a new XSLT transformation scenario that applies the stylesheet over the XML. The XSLT stylesheet would look like this:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
```

```
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:math="http://www.w3.org/2005/xpath-functions/math"
    exclude-result-prefixes="xs math"
    version="3.0">
    <xsl:template match="node() | @*">
        <xsl:copy>
            <xsl:apply-templates select="node() | @*"/>
        </xsl:copy>
    </xsl:template>

</xsl:stylesheet>
```

XInclude 1.1 Features

Oxygen XML Editor plugin offers partial support for XInclude 1.1 features. This includes support for fragment identifiers and attribute copying.

- **Fragment Identifiers**

  You can `xi:include` a text file and specify the `@fragid` value so that you only get part of that text file in the main document. For some examples and to see how `xi:include` gets expanded when the `@fragid` specifies a line range or character range, see **Textual Inclusion Examples with RFC5147 Fragment Identifiers**.
- **Attribute Copying**

  Any *namespaced* attribute defined on the `xi:include` element wll be passed to the root element of the included content.

  For example, if you have this:

  ```
  <xi:include href="section2.xml" xmlns:xi="http://www.w3.org/2001/XInclude"
    xml:id="sectInner1"/>
  ```

  and `section2.xml` looks like this:

  ```
  <sect2 xmlns="http://docbook.org/ns/docbook" version="5.0"
      xmlns:xlink="http://www.w3.org/1999/xlink" xml:id="section2">
      <title>FS2</title>
      <para>P2</para>
  </sect2>
  ```

  then the final processed result will have the original `xml:id="section2"` replaced with the value specified in the *xi:included* section.

  For more information, see **Attribute Copying when Processing XML**. Also, to see more examples, see **Attribute Copying Examples**.

Related Information:

W3C Specifications: XML Inclusions (XInclude) Version 1.1

Refactoring XML Documents

In the life cycle of XML documents there are instances when the XML structure needs to be changed to accommodate various needs. For example, when an associated schema is updated, an attribute may have been removed, or a new element added to the structure.

These types of situations cannot be resolved with a traditional *Find/Replace* tool, even if the tool accepts regular expressions. The problem becomes even more complicated if an XML document is computed or referenced from multiple modules, since multiple resources need to be changed.

To assist you with these types of refactoring tasks, Oxygen XML Editor plugin includes a specialized **XML Refactoring** tool that helps you manage the structure of your XML documents.

XML Refactoring Tool

The **XML Refactoring** tool is presented in the form of an easy to use wizard that is designed to reduce the time and effort required to perform various structure management tasks. For example, you can insert, delete, or rename an attribute in all instances of a particular element that is found in all documents within your project.

To access the tool, select the **XML Refactoring** action from one of the following locations:

- The **XML Tools** menu.
- The **Refactoring** submenu from the contextual menu in the **Navigator** view.
- The **Refactoring** submenu from the contextual menu in the **DITA Maps Manager** view.

Note: The predefined refactoring operations are also available from the **Refactoring** submenu in the contextual menu of **Author** or **Text** mode. This is useful because by selecting the operations from the contextual menu, Oxygen XML Editor plugin considers the editing context to skip directly to the wizard page of the appropriate operation and to help you by preconfiguring some of the parameter values. For your convenience, the last 5 operations that were finished or previewed also appear in the **Refactoring** submenu of the contextual menu in the **DITA Maps Manager**.

XML Refactoring Wizard

The XML Refactoring tool includes the following wizard pages:

Refactoring operations

The first wizard page presents the available operations, grouped by category. To search for an operation, you can use the filter text box at the top of the page.

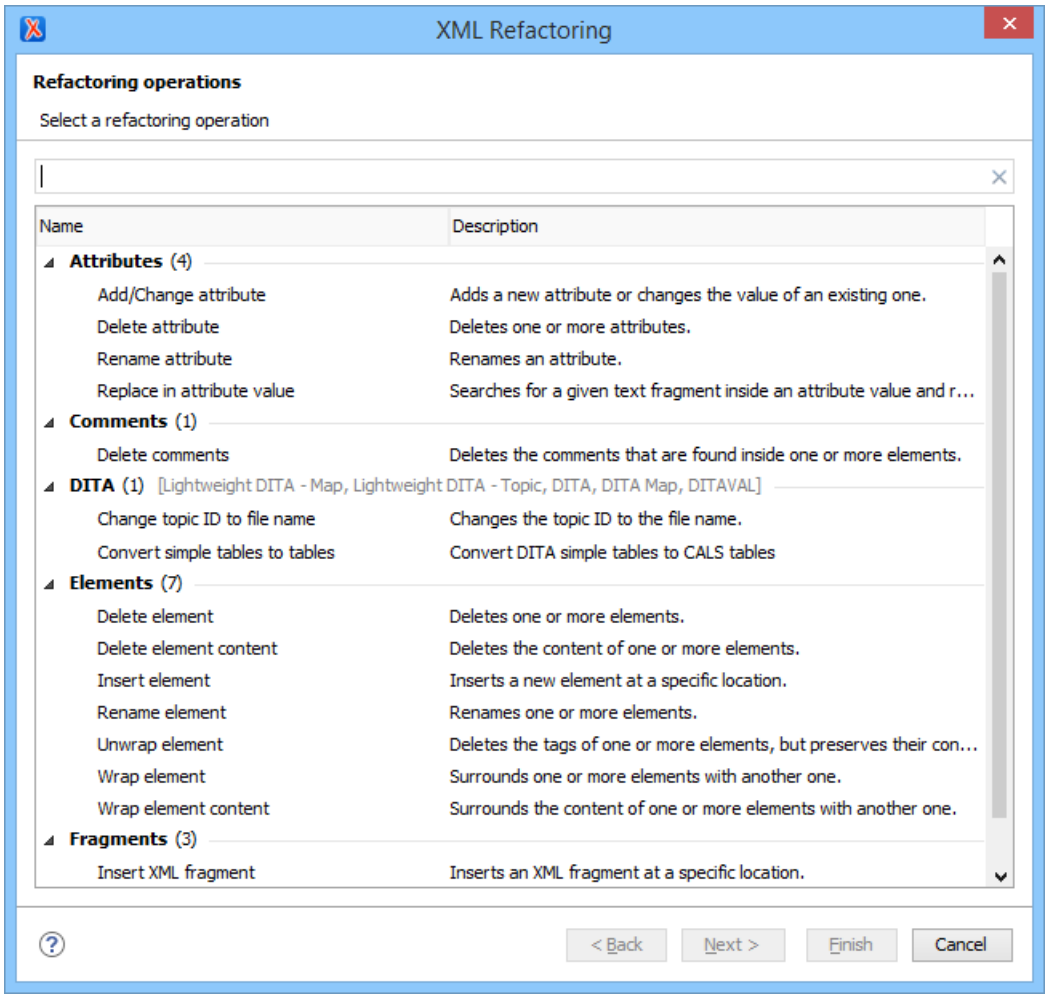


Figure 356: XML Refactoring Wizard

Configure Operation Parameters

The next wizard page allows you to specify the parameters for the refactoring operation. The parameters are specific to the type of refactoring operation that is being performed. For example, to delete an attribute you need to specify the parent element and the qualified name of the attribute to be removed.

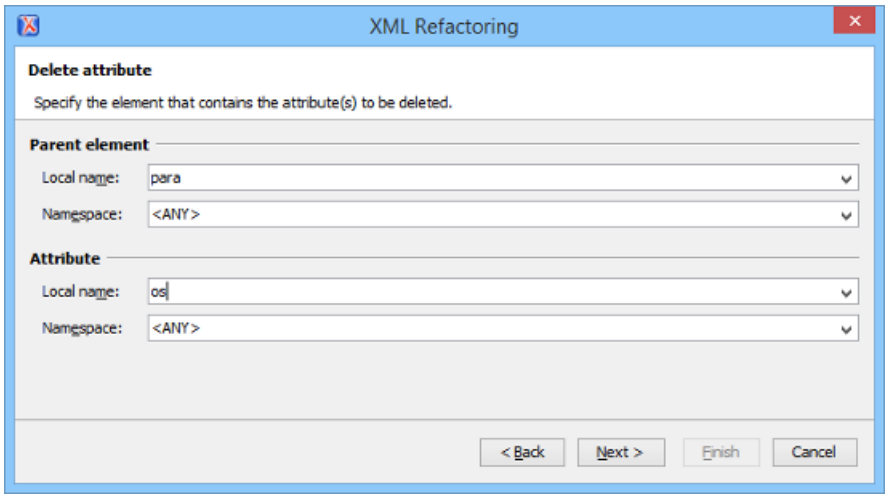


Figure 357: XML Refactoring 2nd Wizard Page (Delete Attribute Operation)

Scope and Filters

The last wizard page allows you to select the set of files that represent the input of the operation.

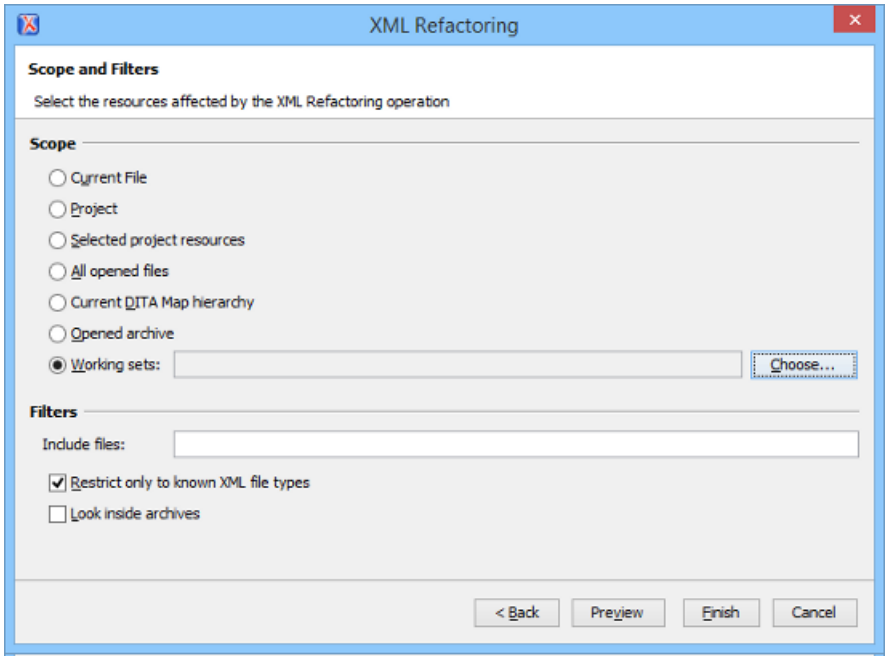


Figure 358: XML Refactoring - Scope and Filters Wizard Page

Scope section

In the **Scope** section, you can select from predefined resource sets (such as the current file, your whole project, the current *DITA map* hierarchy for DITA projects, etc.) or you can define your own set of resources by creating a *working set*.

Filters

The **Filters** section includes the following options:

- **Include files** - Allows you to filter the selected resources by using a file pattern. For example, to restrict the operation to only analyze build files you could use `build*.xml` for the file pattern.
- **Restrict only to known XML file types** - When selected, only resources with a known XML file type will be affected by the operation.

Preview

You can use the **Preview** button to open a comparison panel where you can review all the changes that will be made by the refactoring operation before applying the changes.

Finish

After clicking the **Finish** button, the operation will be processed and Oxygen XML Editor plugin provides no automatic means for reverting the operations. Any **Undo** action will only revert changes on the current document.

Trouble: If an operation fails, a notification will be displayed in the **Results** panel with some information about the error. For example, if the operation was invoked on a read-only resource, the error will indicate that a read-only file cannot be converted.

Tip: If an operation takes longer than expected you can use the **Stop** button in the progress bar to cancel the operation.

Predefined Refactoring Operations

The XML Refactoring tool includes a variety of predefined operations that can be used for common refactoring tasks. They are grouped by category in the **Refactoring operations** wizard page. You can also access the operations from the **Refactoring** submenu in the contextual menu of **Author** or **Text** mode. The operations are also grouped by category in this submenu. When selecting the operations from the contextual menu, Oxygen XML Editor plugin considers the editing context to get the names and namespaces of the current element or attribute, and uses this information to preconfigure some of the parameter values for the selected refactoring operation.

Tip: Each operation includes a link in the lower part of the wizard that opens the **XML / XSLT-FO-XQuery / XPath** preferences page where you can configure XPath options and declare namespace prefixes.

The following predefined operations are available:

Refactoring Operations for *Attributes*

Add/Change attribute

Use this operation to change the value of an attribute or insert a new one. This operation allows you to specify the following parameters:

- **Parent element** section
  - **Element** - The parent element of the attribute to be changed, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** section
  - **Local name** - The local name of the affected attribute.
  - **Namespace** - The namespace of the affected attribute.
  - **Value** - The value for the affected attribute.
- **Options** section
  - You can choose between one of the following options for the **Operation mode**:
    - **Add the attribute in the parent elements where it is missing**
    - **Change the value in the parent elements where the atrribute already exists**
    - **Both**

Convert attribute to element

Use this operation to convert a specified attribute to an element. This operation allows you to specify the following parameters:

- **Parent element** section
  - **Element** - The parent element of the attribute to be converted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** section
  - **Local name** - The local name of the affected attribute.

    - **Namespace** - The namespace of the affected attribute.
- **New element** section
    - **Local name** - The local name of the new element.
    - **Namespace** - The namespace of the new element.

Delete attribute

Use this operation to remove one or more attributes. This operation requires you to specify the following parameters:

- **Element** - The parent element of the attribute to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** - The name of the attribute to be deleted.

Rename attribute

Use this operation to rename an attribute. This operation requires you to specify the following parameters:

- **Element** - The parent element of the attribute to be renamed, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** - The name of the attribute to be renamed.
- **New local name** - The new local name of the attribute.

Replace in attribute value

Use this operation to search for a text fragment inside an attribute value and change the fragment to a new value. This operation allows you to specify the following parameters:

- **Target attribute** section
    - **Element** - The parent element of the attribute to be modified, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
    - **Attribute** - The name of the attribute to be modified.
- **Find / Replace** section
    - **Find** - The text fragments to find. You can use Perl-like regular expressions.
    - **Replace with** - The text fragment to replace the target with. This parameter can bind regular expression capturing groups ($1 , $2, etc.) from the find pattern.

Refactoring Operations for *Comments*

Delete comments

Use this operation to delete comments from one or more elements. This operation requires you specify the following parameter:

- **Element** - The target element (or elements) for which comments will be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Note: Comments that are outside the root element will not be deleted because the *serializer* preserves the content before and after the root.

Refactoring Operations for *DITA*

Change topic ID to file name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS tables to simple tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes. For more information and instructions for using this operation, see Converting Conrefs to Conkeyrefs on page 1544.

Convert simple tables to CALS tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting). For more information, see Converting DITA Topics to Another Type on page 1507.

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

All of these DITA refactoring actions allow you to choose a scope for the operation and some filters:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, **Current DITA map hierarchy**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

Refactoring Operations for *Elements*

Delete element

Use this operation to delete elements. This operation requires you to specify the following parameter:

- **Element** - The target element to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Delete element content

Use this operation to delete the content of elements. This operation requires you to specify the following parameter:

- **Element** - The target element whose content is to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Insert element

Use this operation to insert new elements. This operation allows you to specify the following parameters:

- **Element** section
  - **Local name** - The local name of the element to be inserted.
  - **Namespace** - The namespace of the element to be inserted.
- **Location** section

- **XPath**- An XPath expression that identifies an existing element to which the new element is relative, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Position** - The position where the new element will be inserted, in relation to the specified existing element. The possible selections in the drop-down menu are: **After**, **Before**, **First child**, or **Last child**.

Rename element

Use this operation to rename elements. This operation requires you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be renamed, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **New local name** - The new local name of the element.

Unwrap element

Use this operation to remove the surrounding tags of elements, while keeping the content unchanged. This operation requires you to specify the following parameter:

- **Target elements (XPath)** - The target elements whose surrounding tags will be removed, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.

Wrap element

Use this operation to surround elements with element tags. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be surrounded with tags, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Wrapper element** section
  - **Local name** - The local name of the *Wrapper element*.
  - **Namespace** - The namespace of the *Wrapper element*.

Wrap element content

Use this operation to surround the content of elements with element tags. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements whose content will be surrounded with tags, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Wrapper element** section
  - **Local name** - The local name of the *Wrapper element* that will surround the content of the target.
  - **Namespace** - The namespace of the *Wrapper element* that will surround the content of the target.

Refactoring Operations for *Fragments*

Insert XML fragment

Use this operation to insert an XML fragment. This operation allows you to specify the following:

- **XML Fragment** - The XML fragment to be inserted.
- **Location** section
  - **XPath** - An XPath expression that identifies an existing element to which the inserted fragment is relative, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
  - **Position** - The position where the fragment will be inserted, in relation to the specified existing element. The possible selections in the drop-down menu are: **After**, **Before**, **First child**, or **Last child**.

Replace element content with XML fragment

Use this operation to replace the content of elements with an XML fragment. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements whose content will be replaced, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.

- **XML Fragment** - The XML fragment with which to replace the content of the target element.

Replace element with XML fragment

Use this operation to replace elements with an XML fragment. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be replaced, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **XML Fragment** - The XML fragment with which to replace the target element.

Refactoring Operations for *JATSKit*

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Use this operation to add an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Use this operation to add a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Use this operation to normalize assigned IDs and assigned IDs to elements that are missing them.

All of these JATSKit refactoring actions allow you to choose a scope for the operation and some filters:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

Additional Notes

Note: There are some operations that allow <ANY> for the **local name** and **namespace** parameters. This value can be used to select an element or attribute regardless of its local name or namespace. Also, the <NO_NAMESPACE> value can be used to select nodes that do not belong to a namespace.

Note: Some operations have parameters that accept XPath expressions to match elements or attributes. In these XPath expressions you can only use the prefixes declared in the **Options** > **Preferences** > **XML** > **XSLT-FO-XQUERY** > **XPath** page. This preferences page can be easily opened by clicking the link in the note (**Each prefix used in an XPath expression must be declared in the Default prefix-namespace mappings section**) at the bottom of the **Configure Operation Parameters** wizard page.

Custom Refactoring Operations

While Oxygen XML Editor plugin includes a variety of predefined XML refactoring operations to help you accomplish particular tasks, you can also create custom operations according to your specific needs. For example, you could create a custom refactoring operation to convert an attribute to an element and insert the element as the first child of the parent element.

An XML Refactoring operation is defined as a pair of resources:

- An *XQuery Update script* or *XSLT stylesheet* that Oxygen XML Editor plugin will run to refactor the XML files.
- An *XML Operation Descriptor* file that contains information about the operation (such as the name, description, and parameters).

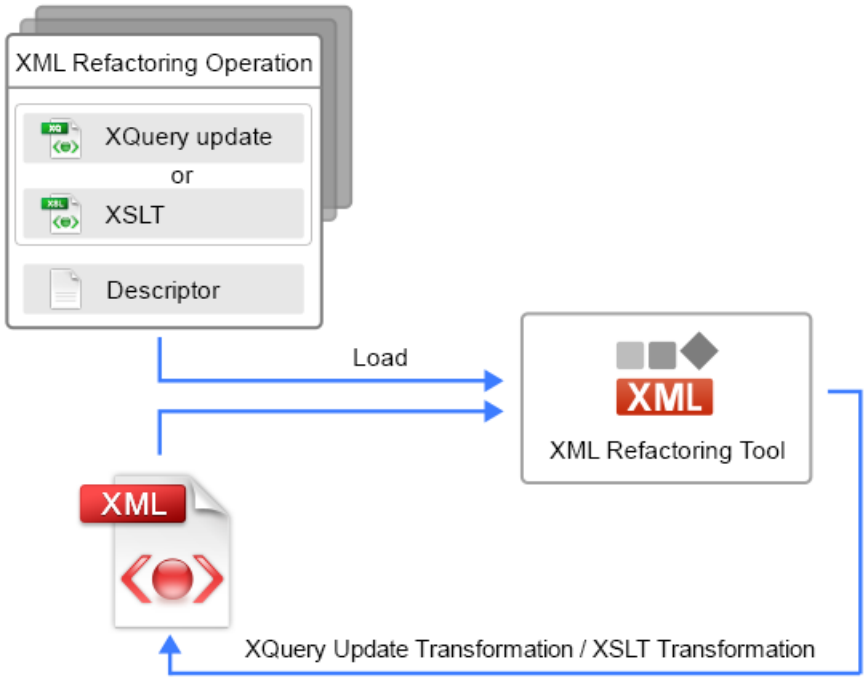


Figure 359: Diagram of an XML Refactoring Operation

All the defined custom operations are loaded by the **XML Refactoring Tool** and presented in the **Refactoring Operations** wizard page, along with the predefined built-in operations.

After the user chooses an operation and specifies its parameters, Oxygen XML Editor plugin processes an XQuery Update or XSLT transformation over the input file. This transformation is executed in a **safe mode**, which implies the following:

- When loading the document:
  - The **XInclude** mechanism is disabled. This means that the resources included by using XInclude will not be visible in the transformation.
  - The DTD entities will be processed without being expanded.
  - The associated DTD will be not loaded, so the default attributes declared in the DTD will not be visible in the transformation.
- When saving the updated XML document:
  - The DOCTYPE will be preserved.

    Note: This can be changed using Saxon extension functions in XSLT.
  - The DTD entities will be preserved as they are in the original document when the document is saved.
  - The attribute values will be kept in their original form without being normalized.
  - The spaces between attributes are preserved. Basically, the spaces are lost by a regular XML serialization since they are not considered important.

The result of this transformation overrides the initial input file.

Note: To achieve some of the previous goals, the XML Refactoring mechanism adds several attributes that are interpreted internally. The attributes belong to the `http://www.oxygenxml.com/ns/xmlRefactoring/additional_attributes` namespace. These attributes should not be taken into account when processing the input XML document since they are discarded when the transformed document is serialized.

Restriction: *Comments* or *processing instructions* that are in any node before or after the root element cannot be modified by an XML Refactoring operation. In other words, XML Refactoring operations can only be applied on the root element and the nodes inside it. However, as a work around to this limitation, you can use Saxon extension functions and the XSLT stylesheet method to implement the new custom XML refactoring operation.

Creating a Custom Refactoring Operation

To create a custom refactoring operation, follow these steps:

1. Create an XQuery Update script or XSLT stylesheet file.
2. Create an **XML Refactoring Operation Descriptor** file contains the path to the XQuery Update script or XSLT stylesheet.
3. Store both files in one of the locations that Oxygen XML Editor plugin scans when loading the custom operations.

   Result: Once you run the **XML Refactoring** tool again, the custom operation appears in the **Refactoring Operations** wizard page.

Related Information:

Storing and Sharing Refactoring Operations on page 614

Custom Refactoring Script

The first step in creating a custom refactoring operation is to create an XQuery Update script or XSLT stylesheet that is needed to process the refactoring operations. The easiest way to create this script file is to use the **New** document wizard to create a new **XQuery** or **XSLT** file and you can use our XQuery method example or XSLT method example to help you with the content.

There are cases when it is necessary to add parameters in the XQuery script or XSLT stylesheet. For instance, if you want to rename an element, you may want to declare an external parameter associated with the name of the element to be renamed. To allow you to specify the value for these parameters, they need to be declared in the *refactoring operation descriptor file* that is associated with this operation.

Note: The XQuery Update processing is disabled by default in Oxygen XML Editor plugin. Thus, if you want to create or edit an XQuery Update script you have to enable this mechanism by creating an XQuery transformation scenario and choose **Saxon EE** as the transformation engine. Also, you need to make sure the **Enable XQuery update** option is selected in the Saxon processor advanced options.

Note: If you are using an XSLT file, XPath expressions that are passed as parameters will automatically be rewritten to conform with the mapping of the namespace prefixes declared in the **XML /XSLT-FO-XQuery / XPath** preferences page.

The next step in creating a custom refactoring operation is to create an **XML Refactoring Operation Descriptor** file contains the path to the XQuery Update script or XSLT stylesheet.

Related Information:

XQuery Update Script for Creating a Custom Operation on page 608
XSLT Stylesheet for Creating a Custom Operation on page 610

Custom Refactoring Operation Descriptor File

The second step in creating a custom refactoring operation is to create an operation descriptor file. The easiest way to do this is to use the **New** document wizard and choose the **XML Refactoring Operation Descriptor** template.

Introduction to the Descriptor File

This file contains information (such as `name`, `description`, and `id`) that is necessarily when loading an XML Refactoring operation . It also contains the path to the XQuery Update script or XSLT stylesheet that is associated with the particular operation through the `script` element.

You can specify a `category` for your custom operations to logically group certain operations. The `category` element is optional and if it is not included in the descriptor file, the default name of the category for the custom operations is *Other operations*.

The descriptor file is edited and validated against the following schema: `frameworks/xml_refactoring/operation_descriptor.xsd`.

Declaring Parameters in the Descriptor File

If the XQuery Update script or XSLT stylesheet includes parameters, they should be declared in the **parameters** section of the descriptor file. All the parameters specified in this section of the descriptor file will be displayed in the **XML Refactoring** tool within the **Configure Operation Parameters** wizard page for that particular operation.

The value of the first `description` element in the **parameters** section will be displayed at the top of the **Configure Operation Parameters** wizard page.

To declare a parameter, specify the following information:

- **`label`** - This value is displayed in the user interface for the parameter.
- **`name`** - The parameter name used in the XQuery Update script or XSLT stylesheet and it should be the same as the one declared in the script.
- **`type`** - Defines the type of the parameter and how it will be rendered. There are several types available:
  - `TEXT` - Generic type used to specify a simple text fragment.
  - `XPATH` - Type of parameter whose value is an XPATH expression. For this type of parameter, Oxygen XML Editor plugin will use a text input with corresponding content completion and syntax highlighting.

    Note: The value of this parameter is transferred as plain text to the XQuery Update or XSLT transformation without being evaluated. You should evaluate the XPath expression inside the XQuery Update script or XSLT stylesheet. For example, you could use the `saxon:evaluate` Saxon extension function.

    Note: A relative XPath expression is converted to an absolute XPath expression by adding `//` before it (`//XPathExp`). This conversion is done before transferring the XPath expression to the XML refactoring engine.

    Note: When writing XPath expressions, you can only use prefixes declared in the **Options** > **Preferences** > **XML** > **XSLT-FO-XQUERY** > **XPath** options page.
  - `NAMESPACE` - Used for editing namespace values.
  - `REG_EXP_FIND` - Used when you want to match a certain text by using Perl-like regular expressions.
  - `REG_EXP_REPLACE` - Used along with `REG_EXP_FIND` to specify the replacement string.
  - `XML_FRAGMENT` - This type is used when you want to specify an XML fragment. For this type, Oxygen XML Editor plugin will display a text area specialized for inserting XML documents.
  - `NC_NAME` - The parameter for `NC_NAME` values. It is useful when you want to specify the local part of a *QName* for an element or attribute.
  - `BOOLEAN` - Used to edit boolean parameters.
  - `TEXT_CHOICE` - It is useful for parameters whose value should be from a list of possible values. Oxygen XML Editor plugin renders each possible value as a radio button option.
- **`description`** - The description of the parameter. It is used by the application to display a tooltip when you hover over the parameter.
- **`possibleValues`** - Contains the list with possible values for the parameter and you can specify the default value, as in the following example:

```
<possibleValues onlyPossibleValuesAllowed="true">
    <value name="before">Before</value>
    <value name="after"default="true">After</value>
    <value name="firstChild">First child</value>
    <value name="lastChild">Last child</value>
</possibleValues>
```

Specialized Parameters to Match Elements or Attributes

If you want to match elements or attributes, you can use some specialized parameters, in which case Oxygen XML Editor plugin will propose all declared elements or attributes based on the schema associated with the currently edited file. The following specialized parameters are supported:

`elementLocation`

This parameter is used to match elements. For this type of parameter, the application displays a text field where you can enter the element name or an XPath expression. The text from the `label` attribute is displayed in the application as the label of the text field. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. If the value of the `useCurrentContext`

attribute is set to **true**, the element name from the cursor position is used as proposed values for this parameter.

Example of an `elementLocation`:

```
<elementLocation name="elem_loc" useCurrentContext="false">
                <element label="Element location">
                    <description>Element location description.</description>
                </element>
</ ElementLocation>
```

attributeLocation

This parameter is used to match attributes. For this type of parameter, the application displays two text fields where you can enter the parent element name and the attribute name (both text fields accept XPath expressions for a finer match). The text from the `label` attributes is displayed in the application as the label of the associated text fields. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. The value of this parameter is an XPath expression that is computed by using the values of the expression from the `element` and `attribute` text fields. For example, if `section` is entered for the element and a `title` is entered for the attribute, the XPath expression would be computed as `//section/@title`. If the value of the `useCurrentContext` attribute is set to `true`, the element and attribute name from the cursor position is used as proposed values for the operation parameters.

Example of an `attributeLocation`:

```
<attributeLocation name="attr_xpath" useCurrentContext="true">
                <element label="Element path">
                    <description>Element path description.</description>
                </element>
                <attribute label="Attribute" >
                    <description>Attribute path description.</description>
                </attribute>
</ AttributeLocation>
```

elementParameter

This parameter is used to specify elements by local name and namespace. For this type of parameter, the application displays two combo boxes with elements and namespaces collected from the associated schema of the currently edited file. The text from the `label` attribute is displayed in the application as label of the associated combo. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. If you specify the `allowsAny` attribute, the application will propose *<ANY>* as a possible value for the **Name** and **Namespace** combo boxes. You can also use the `useCurrentContext` attribute and if its value is set to `true`, the element name and namespace from the cursor position is used as proposed values for the operation parameters.

Example of an `elementParameter`:

```
<elementParameter id="elemID" useCurrentContext="true">
    <localName label="Name" name="element_localName" allowsAny="true">
        <description>Local name of the parent element.</description>
    </localName>
    <namespace label="Namespace" name="element_namespace" allowsAny="true">
        <description>Local name of the parent element</description>
    </namespace>
</elementParameter>
```

attributeParameter

This parameter is used to specify attributes by local name and namespace. For this type of parameter, the application displays two combo boxes with attributes and their namespaces collected from the associated schema of the currently edited file. The text from the `label` attribute is displayed in the application as the label of the associated combo box. You can also use the `useCurrentContext` attribute and if its value is set to `true`, the attribute name and namespace from the cursor position is used as proposed values for the operation parameters.

Note: An `attributeParameter` is dependant upon an `elementParameter`. The list of attributes and namespaces are computed based on the selection in the `elementParameter` combo boxes.

Example of an `attributeParameter`:

```
<attributeParameter dependsOn="elemID" useCurrentContext="true">
```

```
    <localName label="Name" name="attribute_localName">
        <description>The name of the attribute to be converted.</description>
    </localName>
    <namespace label="Namespace" name="attribute_namespace" allowsAny="true">
        <description>Namespace of the attribute to be converted.</description>
    </namespace>
</attributeParameter>
```

Note: All predefined operations are loaded from the *[OXYGEN_INSTALL_DIR]*`/refactoring` folder.

Related Information:

Example of an Operation Descriptor File with an XSLT Stylesheet on page 612
Example of an Operation Descriptor File with an XQuery Update script on page 609

XQuery Update Script for Creating a Custom Operation

To demonstrate creating a custom operation, consider that we have a task where we need to convert an attribute into an element and insert it inside another element. A specific example would be if you have a project with a variety of `image` elements where a deprecated `alt` attribute was used for the description and you want to convert all instances of that attribute into an element with the same name and insert it as the first child of the `image` element.

Thus, our task is to convert this attribute into an element with the same name and insert it as the first child of the image element.

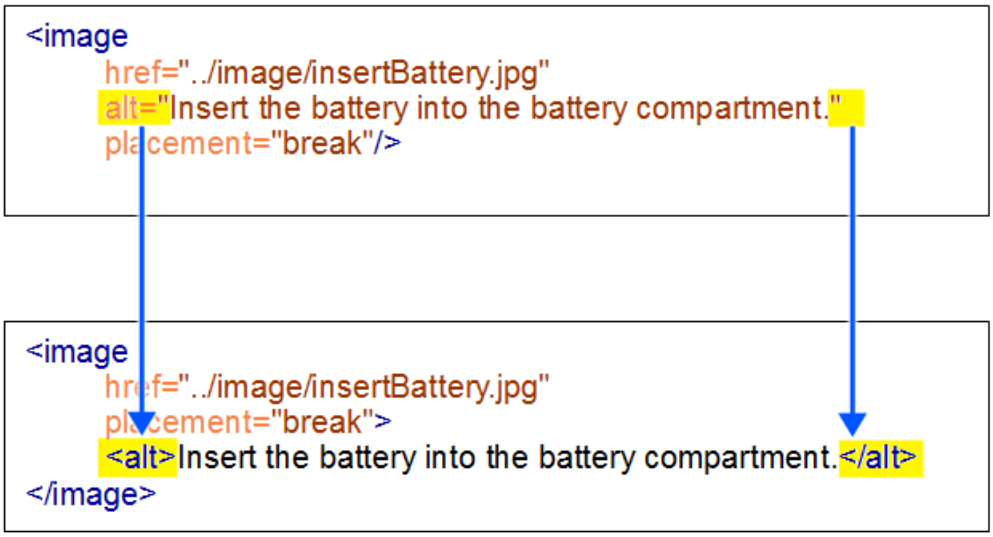


Figure 360: Example: Custom XML Refactoring Operation

We can use an XQuery Update script to implement the new custom XML refactoring operation. The second requirement is an XML Refactoring operation descriptor file that contains the path to the XQuery Update script.

Restriction: There is a limitation to using an XQuery script in that *comments* or *processing instructions* that are in any node before or after the root element cannot be modified by an XML Refactoring operation. In other words, XML Refactoring operations can only be performed on *comments* or *processing instructions* that are inside the root element. However, as a work around to this limitation, you can use Saxon extension functions and the XSLT stylesheet method to implement the new custom XML refactoring operation.

Example of an XQuery Update Script for Creating a Custom Operation to *Convert an Attribute to an Element*

The XQuery Update script does the following:

- Iterates over all elements from the document that have the specified local name and namespace.
- Finds the attribute that will be converted to an element.
- Computes the *QName* of the new element to be inserted and inserts it as the first child of the parent element.

```
(:
```

```
    XQuery document used to implement 'Convert attribute to element'
      operation from XML Refactoring tool.
:)

declare namespace output = "http://www.w3.org/2010/xslt-xquery-serialization";
declare option output:method   "xml";
declare option output:indent   "no";

(: Local name of the attribute's parent element. :)
declare variable $element_localName as xs:string external;

(: Namespace of the attribute's parent element. :)
declare variable $element_namespace as xs:string external;

(: The local name of the attribute to be converted :)
declare variable $attribute_localName as xs:string external;

(: The namespace of the attribute to be converted :)
declare variable $attribute_namespace as xs:string external;

(: Local name of the new element. :)
declare variable $new_element_localName as xs:string external;

(: Namespace of the new element. :)
declare variable $new_element_namespace as xs:string external;

(: Convert attribute to element:)
for $node in //*
(: Find the attribute to convert :)
let $attribute :=
    $node/@*[local-name() = $attribute_localName and
    ($attribute_namespace = '<ANY>' or $attribute_namespace = namespace-uri())]

(: Compute the prefix for the new element to insert :)
let $prefix :=
    for $p in in-scope-prefixes($node)
      where $new_element_namespace = namespace-uri-for-prefix($p, $node)
return $p

(: Compute the qname for the new element to insert :)
let $new_element_qName :=
    if (empty($prefix) or $prefix[1] = '') then $new_element_localName
    else $prefix[1] || ':' || $new_element_localName

 where ('<ANY>' = $element_localName or local-name($node) = $element_localName)
   and
 ($element_namespace = '<ANY>' or $element_namespace = namespace-uri($node))

  return
    if (exists($attribute)) then
      (insert node element {QName($new_element_namespace, $new_element_qName)}
      {string($attribute)} as first into $node,
      delete node $attribute)
      else ()
```

Example of an Operation Descriptor File That References the XQuery Script for Creating a Custom Operation to *Convert an Attribute to an Element*

After you have developed the XQuery script, you have to create an XML Refactoring operation descriptor. This descriptor is used by the application to load the operation details such as name, description, or parameters.

```
<?xml version="1.0" encoding="UTF-8"?>

<refactoringOperationDescriptor
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="http://www.oxygenxml.com/ns/xmlRefactoring"
 id="convert-attribute-to-element"
 name="Convert attribute to element">
 <description>Converts the specified attribute to an element.
           The new element will be inserted as first child of the attribute's
           parent element.</description>
 <!-- For the XSLT stylesheet option uncomment the following line and comment
           the line referring the XQuery Update script -->
 <!-- <script type="XSLT" href="convert-attribute-to-element.xsl"/> -->
 <script type="XQUERY_UPDATE" href="convert-attribute-to-element.xq"/>
  <parameters>
   <description>Specify the attribute to be converted to element.</description>
    <section label="Parent element">
     <elementParameter id="elemID">
      <localName label="Name" name="element_localName" allowsAny="true">
       <description>Local name of the parent element.</description>
        </localName>
       <namespace label="Namespace" name="element_namespace" allowsAny="true">
         <description>Local name of the parent element</description>
       </namespace>
     </elementParameter>
    </section>
    <section label="Attribute">
     <attributeParameter dependsOn="elemID">
      <localName label="Name" name="attribute_localName">
```

```
        <description>Name of the attribute to be converted.</description>
       </localName>
      <namespace label="Namespace" name="attribute_namespace" allowsAny="true">
        <description>Namespace of the attribute to be converted.</description>
      </namespace>
      </attributeParameter>
     </section>
     <section label="New element">
         <elementParameter>
            <localName label="Name" name="new_element_localName">
                <description>The name of the new element.</description>
            </localName>
            <namespace label="Namespace" name="new_element_namespace">
                <description>The namespace of the new element.</description>
            </namespace>
         </elementParameter>
     </section>
   </parameters>
</refactoringOperationDescriptor>
```

Results

After you have created these files, copy them into a folder scanned by Oxygen XML Editor plugin when it loads the custom operation. When the XML Refactoring tool is started again, you will see the created operation.

Since various parameters can be specified, this custom operation can also be used for other similar tasks. The following image shows the parameters that can be specified in our example of the custom operation to convert an attribute to an element:

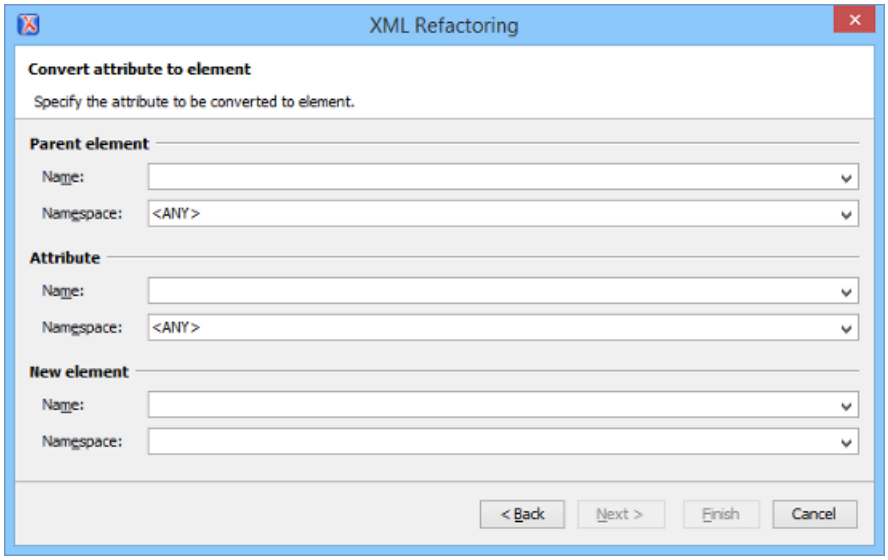


Figure 361: Example: XML Refactoring Wizard for a Custom Operation

XSLT Stylesheet for Creating a Custom Operation

To demonstrate creating a custom operation, consider that we have a task where we need to convert an attribute into an element and insert it inside another element. A specific example would be if you have a project with a variety of `image` elements where a deprecated `alt` attribute was used for the description and you want to convert all instances of that attribute into an element with the same name and insert it as the first child of the `image` element.

Thus, our task is to convert this attribute into an element with the same name and insert it as the first child of the image element.

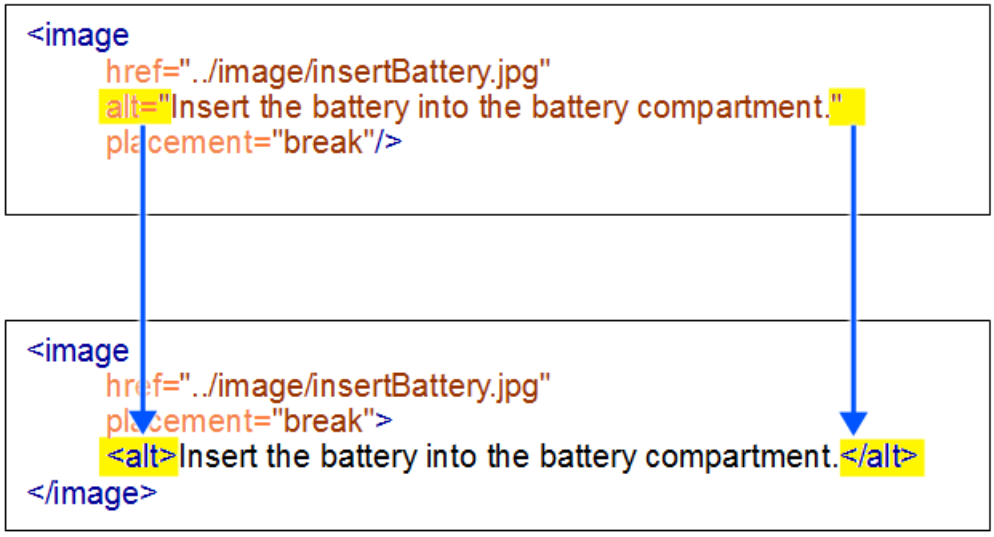


Figure 362: Example: Custom XML Refactoring Operation

We can use an XSLT stylesheet to implement the new custom XML refactoring operation. The second requirement is an XML Refactoring operation descriptor file that contains the path to the XSLT stylesheet.

Example of an XSLT Script for Creating a Custom Operation to *Convert an Attribute to an Element*

The XSLT stylesheet does the following:

- Iterates over all elements from the document that have the specified local name and namespace.
- Finds the attribute that will be converted to an element.
- Adds the new element as the first child of the parent element.

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  exclude-result-prefixes="xs"
  xmlns:xr="http://www.oxygenxml.com/ns/xmlRefactoring"
  version="2.0">

  <xsl:import
href="http://www.oxygenxml.com/ns/xmlRefactoring/resources/commons.xsl"/>

  <xsl:param name="element_localName" as="xs:string" required="yes"/>
  <xsl:param name="element_namespace" as="xs:string" required="yes"/>
  <xsl:param name="attribute_localName" as="xs:string" required="yes"/>
  <xsl:param name="attribute_namespace" as="xs:string" required="yes"/>
  <xsl:param name="new_element_localName" as="xs:string" required="yes"/>
  <xsl:param name="new_element_namespace" as="xs:string" required="yes"/>

  <xsl:template match="node() | @*">
      <xsl:copy>
          <xsl:apply-templates select="node() | @*"/>
      </xsl:copy>
  </xsl:template>
  <xsl:template match="//*[xr:check-local-name($element_localName, ., true())
     and
        xr:check-namespace-uri($element_namespace, .)]">

      <xsl:variable name="attributeToConvert"
         select="@*[xr:check-local-name($attribute_localName, ., true())
     and
        xr:check-namespace-uri($attribute_namespace, .)]"/>

      <xsl:choose>
          <xsl:when test="empty($attributeToConvert)">
              <xsl:copy>
                  <xsl:apply-templates select="node() | @*"/>
              </xsl:copy>
          </xsl:when>
      <xsl:otherwise>
          <xsl:copy>
              <xsl:for-each select="@*[empty(. intersect $attributeToConvert)]">
                   <xsl:copy-of select="."/>
              </xsl:for-each>
                <!-- The new element namespace -->
```

```
                <xsl:variable name="nsURI" as="xs:string">
                    <xsl:choose>
            <xsl:when test="$new_element_namespace eq $xr:NO-NAMESPACE">
                        <xsl:value-of select="''"/>
                    </xsl:when>
                    <xsl:otherwise>
                        <xsl:value-of select="$new_element_namespace"/>
                    </xsl:otherwise>
                </xsl:choose>
            </xsl:variable>
          <xsl:element name="{$new_element_localName}" namespace="{$nsURI}">
                    <xsl:value-of select="$attributeToConvert"/>
                </xsl:element>
              <xsl:apply-templates select="node()"/>
          </xsl:copy>
        </xsl:otherwise>
      </xsl:choose>
    </xsl:template>
  </xsl:stylesheet>
```

Note: The XSLT stylesheet imports a module library that contains utility functions and variables. The location of this module is resolved via an *XML Catalog* set in the XML Refactoring *framework*.

Example of an Operation Descriptor File That References the XSLT Stylesheet for Creating a Custom Operation to *Convert an Attribute to an Element*

After you have developed the XSLT stylesheet, you have to create an XML Refactoring operation descriptor. This descriptor is used by the application to load the operation details such as name, description, or parameters.

```
<?xml version="1.0" encoding="UTF-8"?>

<refactoringOperationDescriptor
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="http://www.oxygenxml.com/ns/xmlRefactoring"
 id="convert-attribute-to-element"
 name="Convert attribute to element">
 <description>Converts the specified attribute to an element.
          The new element will be inserted as first child of the attribute's
          parent element.</description>
 <!-- For the XSLT stylesheet option uncomment the following line and comment
          the line referring the XQuery Update script -->
 <!-- <script type="XSLT" href="convert-attribute-to-element.xsl"/> -->
 <script type="XQUERY_UPDATE" href="convert-attribute-to-element.xq"/>
  <parameters>
   <description>Specify the attribute to be converted to element.</description>
    <section label="Parent element">
     <elementParameter id="elemID">
      <localName label="Name" name="element_localName" allowsAny="true">
       <description>Local name of the parent element.</description>
        </localName>
       <namespace label="Namespace" name="element_namespace" allowsAny="true">
         <description>Local name of the parent element</description>
       </namespace>
     </elementParameter>
    </section>
    <section label="Attribute">
     <attributeParameter dependsOn="elemID">
      <localName label="Name" name="attribute_localName">
       <description>Name of the attribute to be converted.</description>
      </localName>
     <namespace label="Namespace" name="attribute_namespace" allowsAny="true">
       <description>Namespace of the attribute to be converted.</description>
     </namespace>
     </attributeParameter>
    </section>
    <section label="New element">
        <elementParameter>
           <localName label="Name" name="new_element_localName">
               <description>The name of the new element.</description>
           </localName>
           <namespace label="Namespace" name="new_element_namespace">
               <description>The namespace of the new element.</description>
           </namespace>
        </elementParameter>
    </section>
  </parameters>
</refactoringOperationDescriptor>
```

Note: If you are using an XSLT file, the line with the `script` element would look like this:

```
 <script type="XSLT" href="convert-attribute-to-element.xsl"/>
```

Results

After you have created these files, copy them into a folder scanned by Oxygen XML Editor plugin when it loads the custom operation. When the XML Refactoring tool is started again, you will see the created operation.

Since various parameters can be specified, this custom operation can also be used for other similar tasks. The following image shows the parameters that can be specified in our example of the custom operation to convert an attribute to an element:

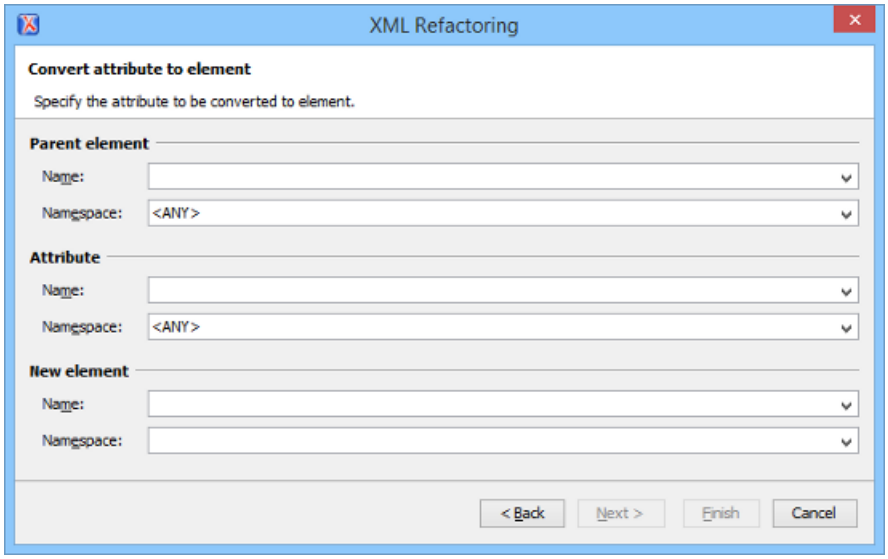


Figure 363: Example: XML Refactoring Wizard for a Custom Operation

Using Saxon Extension Functions to Allow Custom Refactoring Operations to Read and Modify Content Outside the Root Node

One advantage to using an XSLT stylesheet is that there is limitation when using an XQuery Update script in that refactoring operations can only be performed on *comments* or *processing instructions* that are inside the root element. Thus, using the XQuery method, *comments* or *processing instructions* that are in any node before or after the root element cannot be modified by an XML Refactoring operation.

The XSLT stylesheet method offers a work around to this limitation through the use of some Saxon extension functions.

To illustrate the use of these functions, consider the following sample XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- comment before root -->
<?pi before root ?>
<root>
    <child></child>
</root>
<!-- comment after root -->
<?pi after root ?>
```

The following Saxon extension functions can be used to read and modify content outside the root node:

Note: They belong to the `http://www.oxygenxml.com/ns/xmlRefactoring/functions` namespace.

- **get-content-after-root()** - Returns the content after root as `xs:string`.

  For the XML above, the call of this function will return the following string value:

  ```
  <!-- comment after root -->
  <?pi after root ?>
  ```

- **set-content-after-root(xs:string)** - Updates the content that will be serialized in the refactored document after the root node.

The function call `set-content-after-root('<!-- Inserted comment -->')` will result in replacing the nodes after the root element with the comment passed as string argument. The XML document will be modified as follows:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- comment before root -->
<?pi before root ?>
<root>
    <child></child>
</root><!-- Inserted comment -->
```

- **get-content-before-root()** - Returns the content before root as `xs:string`.

  For the XML above, the call of this function will return the following string value:

  ```
  <?xml version="1.0" encoding="UTF-8"?>
  <!-- comment before root -->
  <?pi before root ?>
  ```

- **set-content-before-root(xs:string)** - Updates the content that will be serialized in the refactored document after the root node.

  The function call `set-content-before-root('<!-- Inserted comment -->')` will result in replacing the nodes before the root element with the comment passed as string argument. The XML document will be modified as follows:

  ```
  <!-- Inserted comment --><root>
      <child></child>
  </root>
  <!-- comment after root -->
  <?pi after root ?>
  ```

XSLT Example:

To process content after the root node, the XSLT would look like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:xs="http://www.w3.org/2001/XMLSchema" exclude-result-prefixes="xs"
    xmlns:xrf="http://www.oxygenxml.com/ns/xmlRefactoring/functions" version="3.0">
    <xsl:template match="/">
        <!-- The comment content that will be inserted after the root element -->
        <xsl:variable name="commentAsText">&lt;!-- COMMENT ADDED FROM XR OPERATION-->
        </xsl:variable>
        <!-- Retrieve the content after the root element as is -->
        <xsl:variable name="after-root-content" as="xs:string"
                      select="xrf:get-content-after-root()"/>

        <xsl:variable name="processedContent"
                      select="concat($after-root-content, $commentAsText)"/>

        <!-- Update the content after the root element -->
        <xsl:value-of select="xrf:set-content-after-root($processedContent)"/>

        <xsl:apply-templates/>
    </xsl:template>

    <xsl:template match="node() | @*">
        <xsl:copy>
            <xsl:apply-templates select="node() | @*"/>
        </xsl:copy>
    </xsl:template>
</xsl:stylesheet>
```

Note: The above XSLT retrieves the nodes after the root element as string, appends a new comment, and then sets back the updated content into the XML document.

Storing and Sharing Refactoring Operations

Oxygen XML Editor plugin scans the following locations when looking for XML Refactoring operations to provide flexibility:

- A `refactoring` folder, created inside a directory that is associated to a *framework* you are customizing. To associate the parent directory to the *framework*, you need to add it in the **Classpath** tab of the **Document type** configuration dialog box.
- A folder that you specify in the **Load additional refactoring operations from** text box in the **XML Refactoring** preferences page.

- The `refactoring` folder from the Oxygen XML Editor plugin installation directory (*[OXYGEN_INSTALL_DIR]*`/refactoring/`).

Sharing Custom Refactoring Operations

The purpose of Oxygen XML Editor plugin scanning multiple locations for the XML Refactoring operations is to provide more flexibility for developers who want to share the refactoring operations with the other team members. Depending on your particular use case, you can attach the custom refactoring operations to other resources, such as *framework* or projects.

After storing custom operations, you can share them with other users by sharing the resources.

Localizing XML Refactoring Operations

Oxygen XML Editor plugin includes localization support for the XML refactoring operations.

The translation keys for the built-in refactoring operations are located in *[OXYGEN_INSTALL_DIR]*`/refactoring/i18n/translation.xml`.

The localization support is also available for custom refactoring operations. The following information can be translated:

- The operation `name`, `description`, and `category`.
- The `description` of the `parameters` element.
- The `label`, `description`, and `possibleValues` for each `parameter`.

Translated refactoring information uses the following form:

```
${i18n(translation_key)}
```

Oxygen XML Editor plugin scans the following locations to find the `translation.xml` files that are used to load the translation keys:

- A `refactoring/i18n` folder, created inside a directory that is associated to a customized *framework*.
- A `i18n` folder, created inside a directory that is associated to a customized *framework*.
- An `i18n` folder inside any specified folder. In this case, you need to open the **Preferences** dialog box , go to **XML** > **XML Refactoring**, and specify the folder in the **Load additional refactoring operations from** text box.
- The `refactoring/i18n` folder from the Oxygen XML Editor plugin installation directory (*[OXYGEN_INSTALL_DIR]*`/refactoring/i18n`).

Example: Refactoring Operation Descriptor File with *i18n* Support

```
<?xml version="1.0" encoding="UTF-8"?>

<refactoringOperationDescriptor
    xmlns="http://www.oxygenxml.com/ns/xmlRefactoring" id="remove_text_content"
          name="${i18n(Remove_text_content)}">
    <description>${i18n(Remove_text_content_description)}</description>
    <script type="XQUERY_UPDATE" href="remove_text_content.xq"/>
    <parameters>
        <description>${i18n(parameters_description)}</description>
        <parameter label="${i18n(Element_name)}" name="element_localName"
                   type="NC_NAME">
            <description>${i18n(Element_name_descriptor)}</description>
            <possibleValues>
                <value default="true" name="value1">${i18n(value_1)}</value>
                <value name="value2">${i18n(value_2)}</value>
            </possibleValues>
        </parameter>
    </parameters>
</refactoringOperationDescriptor>
```

XML Digital Signatures

This chapter explains how to apply and verify digital signatures on XML documents.

Digital Signatures Overview

Digital signatures are widely used as security tokens, not just in XML. A *digital signature* provides a mechanism for assuring integrity of data, the authentication of its signer, and the non-repudiation of the entire signature to an external party:

- A *digital signature* must provide a way to verify that the data has not been modified or replaced to ensure integrity.
- The *signature* must provide a way to establish the identity of the data's signer for authentication.
- The *signature* must provide the ability for the data's integrity and authentication to be provable to a third party for non-repudiation.

A *public key system* is used to create the digital signature and it's also used for verification. The signature binds the signer to the document because digitally signing a document requires the originator to create a hash of the message and then encrypt that hash value with their own private key. Only the originator has that private key and that person is the only one who can encrypt the hash so that it can be unencrypted using their public key. The recipient, upon receiving both the message and the encrypted hash value, can decrypt the hash value, knowing the originator's public key. The recipient must also try to generate the hash value of the message and compare the newly generated hash value with the unencrypted hash value received from the originator. If the hash values are identical, it proves that the originator created the message, because only the actual originator could encrypt the hash value correctly.

XML Signatures can be applied to any digital content (data object), including XML (see W3C Recommendation, XML-Signature Syntax and Processing). An XML Signature may be applied to the content of one or more resources:

- Enveloped or enveloping signatures are applied over data within the same XML document as the signature
- Detached signatures are applied over data external to the signature element; the signature is "detached" from the content it signs. This definition typically applies to separate data objects, but it also includes the instance where the signature and data object reside within the same XML document but are sibling elements.

The *XML Signature* is a method of associating a key with referenced data. It does not normatively specify how keys are associated with persons or institutions, nor the meaning of the data being referenced and signed.

The original data is not actually signed. Instead, the signature is applied to the output of a chain of *canonicalization* and transformation algorithms, which are applied to the data in a designated sequence. This system provides the flexibility to accommodate whatever "normalization" or desired preprocessing of the data that might be required or desired before subjecting it to being signed.

Since the signature is dependent on the content it is signing, a signature produced from a *non-canonicalized* document could possibly be different from one produced from a *canonicalized* document. The *canonical* form of an XML document is physical representation of the document produced by the method described in this specification. The *XML canonicalization* method is the algorithm defined by this specification that generates the canonical form of a given XML document or document subset. *XML canonicalization* is designed to be useful for applications that require the ability to test whether or not the information content of a document or document subset has been changed. This is done by comparing the *canonical* form of the original document before application processing with the *canonical* form of the document result of the application processing.

A digital signature over the *canonical* form of an XML document or document subset would allows the signature digest calculations to be oblivious to changes in the original document's physical representation. During signature generation, the digest is computed over the *canonical* form of the document. The document is then transferred to the relying party, which validates the signature by reading the document and computing a digest of the *canonical* form of the received document. The equivalence of the digests computed by the signing and relying parties (hence, the equivalence of the *canonical* forms for which they were computed) ensures that the information content of the document has not been altered since it was signed.

The following *canonicalization algorithms* are used in Oxygen XML Editor plugin:

- **Canonical XML (or Inclusive XML Canonicalization)** (XMLC14N) - Used for XML where the context doesn't change.

  Inclusive Canonicalization copies all the declarations, even if they are defined outside of the scope of the signature, and all the declarations you might use will be unambiguously specified. *Inclusive Canonicalization* is useful when it is less likely that the signed data will be inserted in other XML document and it is the safer method from the security standpoint because it requires no knowledge of the data that are to be secured to safely sign them. A problem may occur if the signed document is moved into another XML document that has other declarations because the *Inclusive Canonicalization* will copy them and the signature will be invalid.
- **Exclusive XML Canonicalization** (EXCC14N) - Designed for *canonicalization* where the context might change.

Exclusive Canonicalization just copies the namespaces you are actually using (the ones that are a part of the XML syntax). It does not look into attribute values or element content, so the namespace declarations required to process these are not copied. This is useful if you have a signed XML document that you want to insert into other XML documents (or you need self-signed structures that support placement within various XML contexts), as it will ensure the signature is verified correctly each time.

The *canonicalization* method can specify whether or not comments should be included in the *canonical* form output by the *XML canonicalization* method. If a *canonical* form contains comments corresponding to the comment nodes in the input node-set, the result is called *canonical* XML with comments. In an uncommented *canonical* form comments are removed, including delimiter for comments outside document element.

The three operations. **Canonicalize**, **Sign**, and **Verify Signature**, are available from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu.

Related Information:

Certificates on page 617
Canonicalizing Files on page 617
Signing Files on page 618
Verifying Signature on page 620
Example of How to Digitally Sign XML Files or Content on page 620

Certificates

A certificate is a digitally signed statement from the issuer (an individual, an organization, a website or a firm), saying that the public key (and some other information) of some other entity has a particular value. When data is digitally signed, the signature can be verified to check the data integrity and authenticity. Integrity means that the data has not been modified. Authenticity means the data comes indeed from the entity that claims to have created and signed it. Certificates are kept in special repositories called *keystores*.

All *keystore* entries (key and trusted certificate entries) are accessed via unique aliases. An alias must be assigned for every new entry of either a key or certificate as a reference for that entity. No *keystore* can store an entity if its alias already exists in that *keystore* and cannot store trusted certificates generated with keys in its *keystore*.

Oxygen XML Editor plugin provides two types of *keystores*: Java Key Store (JKS) and Public-Key Cryptography Standards version 12 (PKCS-12). A *keystore* file is protected by a password. In a PKCS 12 *keystore* you should not store a certificate without alias together with other certificates, with or without alias, as in such a case the certificate without alias cannot be extracted from the *keystore*.

To configure the options for a certificate or to validate it, open the **Preferences** dialog box and go to **XML** > **XML Signing Certificates**. This opens the certificates preferences page.

Related Information:

Digital Signatures Overview on page 615

Canonicalizing Files

You can select the *canonicalization* algorithm to be used for a document from the dialog box that is displayed by using the **Canonicalize** action that is available from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu.

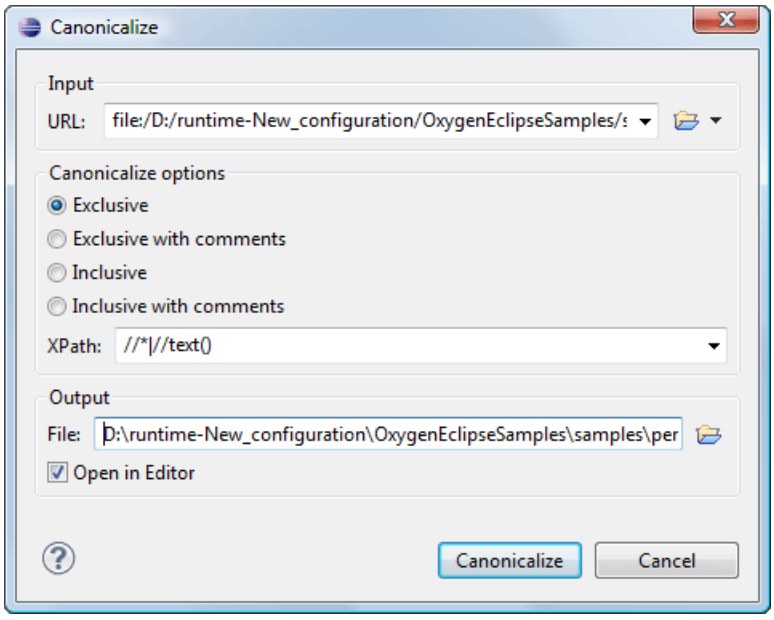


Figure 364: Canonicalization Settings Dialog Box

The **Canonicalize** dialog box allows you to set the following options:

- **Input URL** - Available if the **Canonicalize** action was selected from the **XML Tools** menu. It allows you to specify the location of the input file.
- **Exclusive** - If selected, the exclusive (uncommented) *canonicalization* method is used.

  Note: *Exclusive Canonicalization* just copies the namespaces you are actually using (the ones that are a part of the XML syntax). It does not look into attribute values or element content, so the namespace declarations required to process these are not copied. This is useful if you have a signed XML document that you want to insert into other XML documents (or you need self-signed structures that support placement within various XML contexts), as it will ensure the signature is verified correctly each time.
- **Exclusive with comments** - If selected, the exclusive with comments *canonicalization* method is used.
- **Inclusive** - If selected, the inclusive (uncommented) *canonicalization* method is used.

  Note: *Inclusive Canonicalization* copies all the declarations, even if they are defined outside of the scope of the signature, and all the declarations you might use will be unambiguously specified. Inclusive *Canonicalization* is useful when it is less likely that the signed data will be inserted in other XML document and it is the safer method from the security standpoint because it requires no knowledge of the data that are to be secured to safely sign them. A problem may occur if the signed document is moved into another XML document that has other declarations because the Inclusive *Canonicalization* will copy them and the signature will be invalid.
- **Inclusive with comments** - If selected, the inclusive with comments *canonicalization* method is used.
- **XPath** - The XPath expression provides the fragments of the XML document to be signed.
- **Output** - Available if the **Canonicalize** action was selected from the **XML Tools** menu. It allows you to specify the output file path where the signed XML document will be saved.
- **Open in editor** - If selected, the output file will be opened in the editor.

Related Information:

Digital Signatures Overview on page 615

Signing Files

You can select the type of signature to be used for documents from a signature settings dialog box. To open this dialog box, select the **Sign** action from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu.

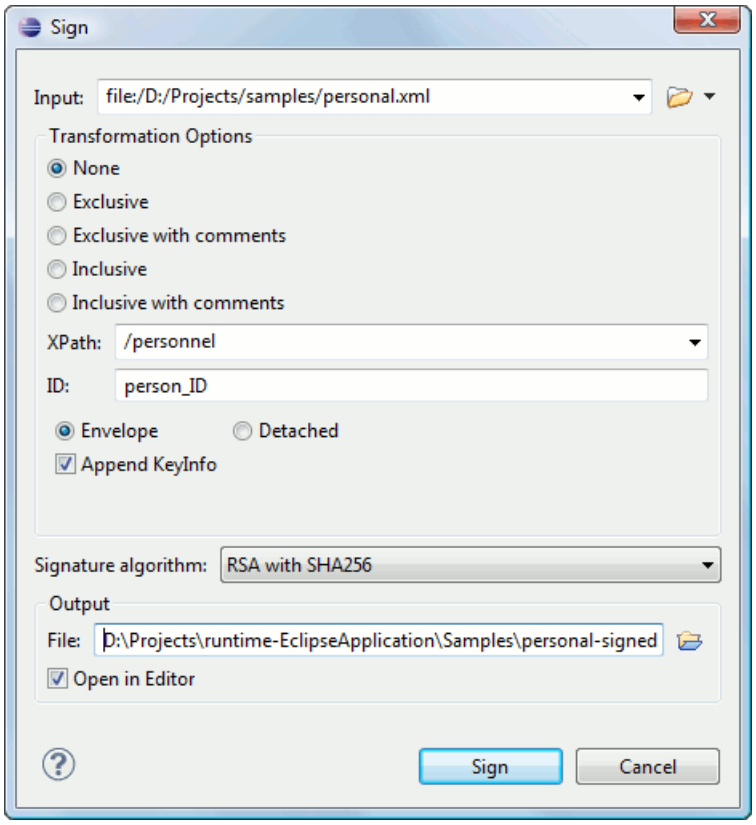


Figure 365: Signature Settings Dialog Box

The following options are available:

Note: If Oxygen XML Editor plugin could not find a valid certificate, a link is provided at the top of the dialog box that opens the XML Signing Certificates preferences page where you can configure a valid certificate.

- **Input** - Available if the **Sign** action was selected from the **XML Tools** menu. Specifies the location of the input URL.
- **Transformation Options** - See the Digital Signature Overview section for more information about these options.
  - **None** - If selected, no *canonicalization* algorithm is used.
  - **Exclusive** - If selected, the exclusive (uncommented) *canonicalization* method is used.

    Note: *Exclusive Canonicalization* just copies the namespaces you are actually using (the ones that are a part of the XML syntax). It does not look into attribute values or element content, so the namespace declarations required to process these are not copied. This is useful if you have a signed XML document that you want to insert into other XML documents (or you need self-signed structures that support placement within various XML contexts), as it will ensure the signature is verified correctly each time.
  - **Exclusive with comments** - If selected, the exclusive with comments *canonicalization* method is used.
  - **Inclusive** - If selected, the inclusive (uncommented) *canonicalization* method is used.

    Note: *Inclusive Canonicalization* copies all the declarations, even if they are defined outside of the scope of the signature, and all the declarations you might use will be unambiguously specified. Inclusive *Canonicalization* is useful when it is less likely that the signed data will be inserted in other XML document and it is the safer method from the security standpoint because it requires no knowledge of the data that are to be secured to safely sign them. A problem may occur if the signed document is moved into another XML document that has other declarations because the Inclusive *Canonicalization* will copy them and the signature will be invalid.
  - **Inclusive with comments** - If selected, the inclusive with comments *canonicalization* method is used.
- **XPath** - The XPath expression provides the fragments of the XML document to be signed.

- **ID** - Provides ID of the XML element to be signed.
- **Envelope** - If selected, the *enveloped* signature is used. See the Digital Signature Overview for more information.
- **Detached** - If selected, the *detached* signature is used. See the Digital Signature Overview for more information.
- **Append KeyInfo** - If this option is selected, the `ds:KeyInfo` element will be added in the signed document.
- **Signature algorithm** - The algorithm used for signing the document. The following options are available: **RSA with SHA1**, **RSA with SHA256**, **RSA with SHA384**, and **RSA with SHA512**.
- **Output** - Available if the **Sign** action was selected from the **XML Tools** menu. Specifies the path of the output file where the signed XML document will be saved.
- **Open in editor** - If selected, the output file will be opened in Oxygen XML Editor plugin.

Related Information:

Digital Signatures Overview on page 615
Verifying Signature on page 620
Example of How to Digitally Sign XML Files or Content on page 620

Verifying Signature

You can verify the signature of a file by selecting the **Verify Signature** action from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu. The **Verify Signature** dialog box then allows you to specify the location of the file whose signature is verified.

If the signature is valid, a dialog box displays the name of the signer. Otherwise, an error shows details about the problem.

Related Information:

Digital Signatures Overview on page 615
Signing Files on page 618
Example of How to Digitally Sign XML Files or Content on page 620

Example of How to Digitally Sign XML Files or Content

Suppose you want to digitally sign an XML document, but more specifically, suppose you have multiple instances of the same element in the document and you just want to sign a specific ID. Oxygen XML Editor plugin includes a signature tool that allows you to digitally sign XML documents or specific content.

The Oxygen XML Editor plugin installation directory includes a `samples` folder that contains a file called `personal.xml`. For the purposes of this example, this file will be used to demonstrate how to digitally sign specific content. Notice that this file has multiple `person` elements inside the `personnel` element. Suppose you want to digitally sign the specific `person` element that contains the `id=robert.taylor`. To do this, follow this procedure:

1. Open the `personal.xml` file in Oxygen XML Editor plugin in **Text** editing mode.
2. Right-click anywhere in the editor and select the **Sign** action from the **Source** submenu.
   The **Sign** dialog box is displayed.

   Tip: If you want to sign a file but create a new output file so that the original file remains unchanged, use the **Sign** action from the **XML Tools** menu. Selecting the action from this menu will allow you to choose an input file and output file in the **Sign** dialog box.
3. If Oxygen XML Editor plugin cannot find a valid certificate, click the link at the top of the dialog box to **configure a valid certificate**. This opens the **XML Signing Certificates** preferences page that allows you to configure and validate a certificate.
4. Once a valid certificate is recognized, continue to configure the **Sign** dialog box.
   a) Select one of the **Transformation Options**. For the purposes of this example, select the **Inclusive with comments** option.
   b) Specify the appropriate **XPath** expression for the specific element that needs to be signed. For this example, type `/personnel/person` in the **XPath** text box.
   c) Enter the specific **ID** that needs to be signed. For this example, type `robert.taylor` in the **ID** field.
   d) Select the **Envelope** option and leave the other options as their default values.

The digital signature is added at the end of the XML document, just before the end tag. It is always added at the end of the document, even if you only sign specific content within the document.

5. You can verify the signature by choosing the **Verify Signature** action from the **Source** submenu of the contextual menu.

Related Information:

Digital Signatures Overview on page 615
Signing Files on page 618
Verifying Signature on page 620

Editing XSLT Stylesheets

Oxygen XML Editor plugin includes a built-in editor for XSLT stylesheets. This section presents the features of the XSLT editor and how these features can be used. The features of the XSLT editor include:

- **Create new XSLT files and templates** - You can use the built-in new file wizards to create new XSLT documents or templates.
- **Open and Edit XSLT files** - XSLT files can be opened and edited in the source editor (**Text** mode).
- **Visual Editing** - XSLT stylesheets are rendered, and can be edited, in the visual **Author** editing mode.
- **Validation** - Presents validation errors in XSLT files.
- **Content completion** - Offers proposals for properties and the values that are available for each property.
- **Syntax highlighting** - The syntax highlighting in Oxygen XML Editor plugin makes XSLT files more readable.

Editing XSLT Stylesheets in the Master Files Context

Smaller interrelated modules that define a complex stylesheet cannot be correctly edited or validated individually, due to their interdependency with other modules. For example, a function defined in a main stylesheet is not visible when you edit an included or imported module. Oxygen XML Editor plugin provides the support for defining the main module (or modules), allowing you to edit any of the imported/included files in the context of the larger stylesheet structure.

You cat set a main XSLT stylesheet either using the *master files* support from the **Navigator** view, or using a validation scenario.

To set a *master file* using a validation scenario, add validation units that point to the main modules. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main stylesheet. In this case, it considers the current module as the main stylesheet.

The advantages of editing in the context of *master file* include:

- Correct validation of a module in the context of a larger stylesheet structure.
- *Content Completion Assistant* displays all components valid in the current context.
- The **Outline** view displays the components collected from the entire stylesheet structure.

For more information about editing XSLT stylesheets in the *master files* context, watch our video demonstration:

https://www.youtube.com/embed/UZwg385RKNw

Related Information:

XSLT Resource Hierarchy/Dependencies View on page 637
XSLT Component Dependencies View on page 639

Validating XSLT Stylesheets

Numerous XSLT code quality assurance checks are done during automatic validation to help you keep your stylesheets valid and well formed. Oxygen XML Editor plugin performs the validation of XSLT documents with the help of an XSLT processor that you can configure in the preferences pages according to the XSLT version.

For XSLT 1.0, the options are: Xalan, Saxon 6.5.5, Saxon 9.8.0.8 and a JAXP transformer specified by the main Java class. For XSLT 2.0, the options are: Saxon 9.8.0.8 and a JAXP transformer specified by the main Java class. For XSLT 3.0, the options are Saxon 9.8.0.8 and a JAXP transformer specified by the main Java class.

Creating a Validation Scenario for XSLT Stylesheets

You can validate an XSLT document using the engine defined in the transformation scenario, or a custom validation scenario. If you choose to validate using the engine from transformation scenario, and a transformation scenario is not associated with the current document or the engine has no validation support, the default engine is used. To set the default engine, open the **Preferences** dialog box and go to **XML** > **XSLT/FO/XQuery** > **XSLT**.

You can also create new validation scenarios or edit existing ones, and you can add *JARS* and classes that contain extension functions. To create or edit a validation scenario for an XSLT stylesheet, follow these steps:

1. With the XSLT file opened in Oxygen XML Editor plugin, select the **Configure Validation Scenario(s)** from the **XML** menu, or the toolbar, or from the **Validate** submenu when invoking the contextual menu on the XSLT file in the **Navigator** view.
   The **Configure Validation Scenario(s)** dialog box is displayed. It contains the existing scenarios, organized in categories depending on the type of file they apply to. You can use the options in the **Settings** drop-down menu to filter which scenarios are shown.
2. To edit an existing scenario, select the scenario and press the **Edit** button. If you try to edit one of the *read-only* predefined scenarios, Oxygen XML Editor plugin creates a customizable duplicate (you can also use the **Duplicate** button).
3. To add a new scenario, press the **New** button.
   The **New scenarios** dialog box is displayed. It lists all validation units of the scenario.

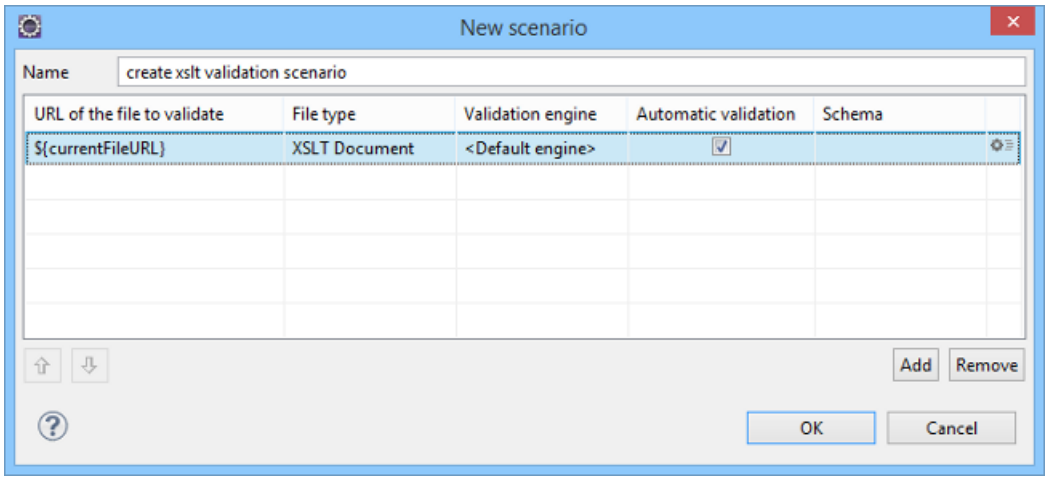


Figure 366: Add / Edit a Validation Unit

4. Configure the following information in this dialog box:
   a) **Name** - The name of the validation scenario.
   b) **URL of the file to validate** - In most cases, leave this field as the default selection (the URL of the current file). If you want to specify a different URL, click its cell and enter the URL in the text field, select it from the drop-down list, or use the **Browse** drop-down menu or **Insert Editor Variable** button.
   c) **File type** - The file type should be **XSLT Document**.
   d) **Validation engine** - Click the cell to select a validation engine. You must select an engine to be able to add or edit extensions.
   e) **Automatic validation** - If this option is selected, the validation operation defined by this row is also used by the automatic validation feature.
5. To add or edit extensions, click the **Edit extensions** button. This button is only available if the **File type** is set as **XSLT Document** and a **Validation engine** is chosen.
   The **Libraries** dialog box is opened. It is used to specify the *JARS* and classes that contain extension functions called from the XSLT file of the current validation scenario. They will be searched, in the specified extensions, in the order displayed in this dialog box. To change the order of the items, select the item and press the **Move up** or **Move down** buttons.
6. Press **OK** to close the **New scenario** dialog box.

The newly created validation scenario is now included in the list of scenarios in the **Configure Validation Scenario(s)** dialog box. You can select the scenario in this dialog box to associate it with the current XSLT document and press the **Apply associated** button to run the validation scenario.

Validating XSLT Stylesheets with Custom Engines

If you need to validate an XSLT stylesheet with a validation engine that is different from the built-in engine, you can configure external engines as custom XSLT validation engines in the Oxygen XML Editor plugin preferences. After a custom validation engine is properly configured, it can be applied on the current document by selecting it from the list of custom validation engines in the **Validation** toolbar drop-down menu. The document is validated against the schema declared in the document.

By default, there are two validators that are configured for XSLT stylesheets:

- **MSXML 4.0** - included in Oxygen XML Editor plugin (Windows edition). It is associated to the XSL Editor type in Preferences page.
- **MSXML.NET** - included in Oxygen XML Editor plugin (Windows edition). It is associated to the XSL Editor type in Preferences page.

Validating XSLT Stylesheets that Call Java Extensions

It is possible to validate XSLT that call Java extensions. This is achieved through a transformation scenario in which the Java extensions are specified, and the default validation will be processed using the parameters defined in the transformation scenario.

To validate XSLT with Java extensions, follow this procedure:

1. Create an XSLT transformation scenario for your XSLT document (select **Configure Transformation Scenario(s)** action from the toolbar, then click **New**, and select **XSLT transformation**).
2. In the **New scenario** dialog box, click the **Extensions** button (in the **XSLT** tab), specify the Java extensions (JAR libraries) that are needed, and click **OK**.
3. Once you are finished configuring the transformation scenario, click **OK**, then select **Save and close**.
4. Use the **Validate** button on the toolbar **(or Alt + Shift + V, V)** and the default validation will detect and use the transformation scenario profile you just configured and saved.

Related Information:

Debugging XSLT that Call Java Extensions on page 1223

XSLT Quick Fix Support

The Oxygen XML Editor plugin *Quick Fix* support helps you resolve various errors that appear in a stylesheet by proposing *Quick Fixes* to problems such as missing templates, misspelled template names, missing functions, or references to an undeclared variable or parameter.

To activate this feature, hover over or place the cursor in the highlighted area of text where a validation error or warning occurs. If a *Quick Fix* is available for that particular error or warning, you can access the *Quick Fix* proposals with any of the following methods:

- When hovering over the error or warning, the proposals are presented in a tooltip pop-up window.
- If you place the cursor in the highlighted area where a validation error or warning occurs, a *Quick Fix* icon ( ) is displayed in the stripe on the left side of the editor. If you click this icon, Oxygen XML Editor plugin displays the list of available fixes.
- With the cursor placed in the highlighted area of the error or warning, you can also invoke the *Quick Fix* menu by pressing **Ctrl + 1 (Command + 1 on OS X)** on your keyboard.

Note: The *Quick Fixes* are available only when validating an XSLT file with Saxon HE/PE/EE.

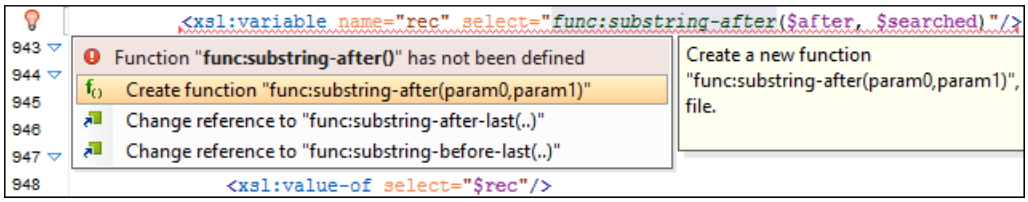


Figure 367: Example of an Undefined XSLT Functions Quick Fix

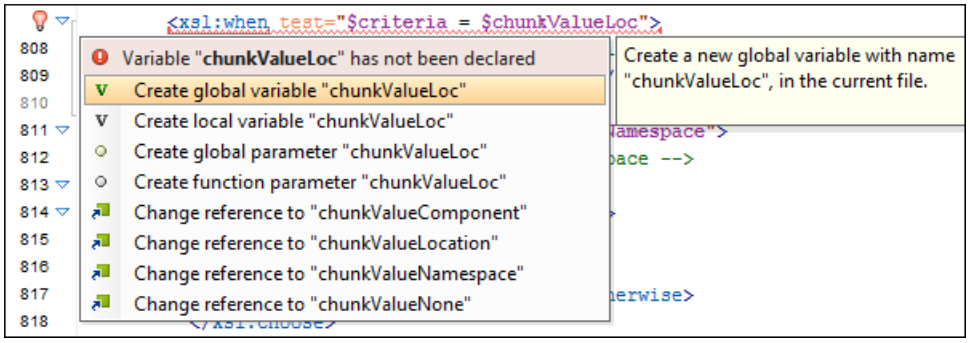


Figure 368: Example of an Undeclared XSLT Variables/Parameters Quick Fix

Oxygen XML Editor plugin provides XSLT *Quick Fixes* for the following types of instances:

- **Template does not exist**, when the template name referenced in a `call-template` element does not exist. The following fixes are available:
  - **Create template "templateName"** - creates a template and generates its corresponding parameters. The template name and parameter names and types are collected from the `call-template` element.
  - **Change reference to "newTemplateName"** - changes the name of the missing template referenced in the `call-template` element. The proposed new names are the existing templates with names similar with the missing one.
- **Variable/Parameter not declared**, when a parameter or variable reference cannot be found. The following fixes are available:
  - **Create global variable "varName"** - creates a global variable with the specified name in the current stylesheet. The new variable is added at the beginning of the stylesheet after the last global variable or parameter declaration.
  - **Create global parameter "paramName"** - creates a global parameter with the specified name in the current stylesheet. The new parameter is added at the beginning of the stylesheet after the last global parameter or variable declaration.
  - **Create local variable "varName"** - creates a local variable with the specified name before the current element.
  - **Create template parameter "paramName"** - creates a new parameter with the specified name in the current template. This fix is available if the error is located inside a template.
  - **Create function parameter "paramName"** - creates a new parameter with the specified name in the current function. This fix is available if the error is located inside a function.
  - **Change reference to "varName"** - changes the name of the referenced variable/parameter to an existing local or global variable/parameter, that has a similar name with the current one.
- **Parameter from a called template is not declared**, when a parameter referenced from a `call-template` element is not declared. The following fixes are available:
  - **Create parameter "paramName" in the template "templateName"** - creates a new parameter with the specified name in the referenced template.
  - **Change "paramName" parameter reference to "newParamName"** - changes the parameter reference from the `call-template` element to a parameter that is declared in the called template.
  - **Remove parameter "paramName" from call-template** - removes the parameter with the specified name from the `call-template` element.

- **No value supplied for required parameter**, when a required parameter from a template is not referenced in a `call-template` element. The following quick-fix is available::
  - **Add parameter "paramName" in call-template** - creates a new parameter with the specified name in call-template element.
- **Function "prefix:functionName()" has not been defined**, when a function declaration is not found. The following *Quick Fixes* are available:
  - **Create function "prefix:functionName(param1, param2)"** - creates a new function with the specified signature, after the current top level element from stylesheet.
  - **Change function to "newFunctionName(..)"** - changes the referenced function name to an already defined function. The proposed names are collected from functions with similar names and the same number of parameters.
- **Attribute-set "attrSetName" does not exist**, when the referenced attribute set does not exist. The following *Quick Fixes* are available:
  - **Create attribute-set "attrSetName"** - creates a new attribute set with the specified name, after the current top level element from stylesheet.
  - **Change reference to "attrSetName"** - changes the referenced attribute set to an already defined one.
- **Character-map "chacterMap" has not been defined**, when the referenced character map declaration is not found. The following *Quick Fixes* are available:
  - **Create character-map "characterMapName"** - creates a new character map with the specified name, after the current top level element from stylesheet.
  - **Change reference to "characterMapName"** - changes the referenced character map to an already defined one.

Content Completion in XSLT Stylesheets

The list of proposals offered by the *Content Completion Assistant* in XSLT are context-sensitive and includes proposals that are valid at the current cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

You can enhance the list of proposals by specifying an additional schema. This schema is defined in the **Content Completion / XSLT** preferences page and can be any of the following: XML Schema, DTD, RELAX NG schema, or NVDL schema.

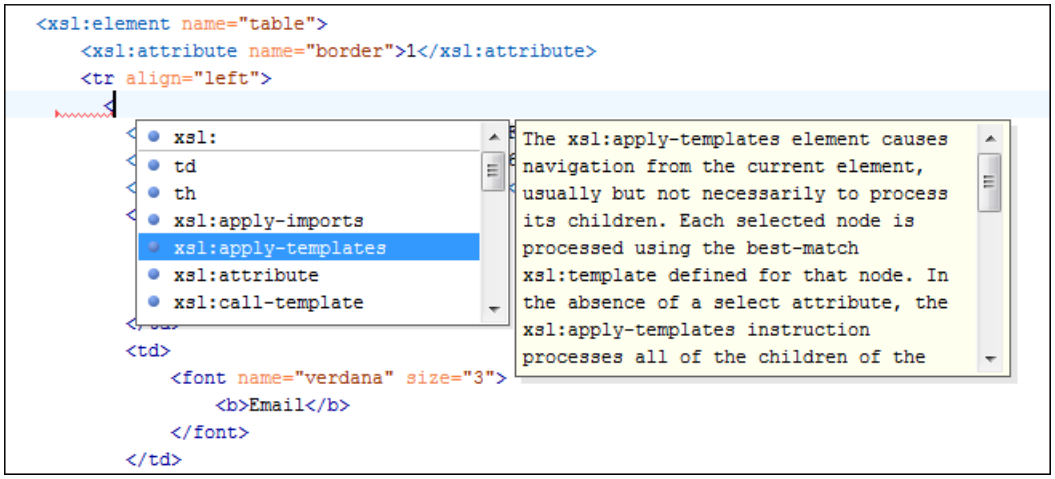


Figure 369: XSLT Content Completion Assistant

The feature is activated in **Text** mode in the following situations:

- After you press the **<** character when inserting an element, it is automatically activated after a short delay. You can adjust the activation delay with the **Activation delay of the proposals window (ms)** option from the **Content Completion** preferences page.

- After typing a partial element or attribute name, you can manually activate it by pressing **Ctrl + Space (Command + Space on OS X)** or **Alt + ForwardSlash (Command + Alt + ForwardSlash on OS X)**. If there is only one valid proposal at the current location, it is inserted without displaying the list of proposals.

The *Content Completion Assistant* proposes numerous item types (such as templates, variables, parameters, keys, etc.) that are defined in the current stylesheet, and in the imported and included XSLT stylesheets. The *Content Completion Assistant* also includes code templates that can be used to quickly insert code fragments into stylesheets.

Note: For XSL and XSD resources, the *Content Completion Assistant* collects its components starting from the *master files*. The *master files* can be defined in the project or in the associated validation scenario. For further details about the *Master Files* support go to Defining Master Files at Project Level.

The extension functions included in the Saxon 6.5.5 and 9.8.0.8 transformation engines are presented in the content completion list only if the Saxon namespace (*http://saxon.sf.net* for XSLT version 2.0 / 3.0 or *http://icl.com/saxon* for XSLT version 1.0) is declared and one of the following conditions is true:

- The edited file has a transformation scenario that uses as transformation engine Saxon 6.5.5 (for XSLT version 1.0), Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE (for XSLT version 2.0 / 3.0).
- The edited file has a validation scenario that uses as validation engine Saxon 6.5.5 (for version 1.0), Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE (for version 2.0 / 3.0).
- The validation engine specified in Options page is Saxon 6.5.5 (for version 1.0), Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE (for version 2.0 / 3.0).

Additionally. the Saxon-CE-specific extension functions and instructions are presented in the list of content completion assistance proposals only if the `http://saxonica.com/ns/interactive`XSLT namespace is declared.

Namespace prefixes in the scope of the current context are presented at the top of the content completion assistance window to speed up the insertion into the document of prefixed elements.

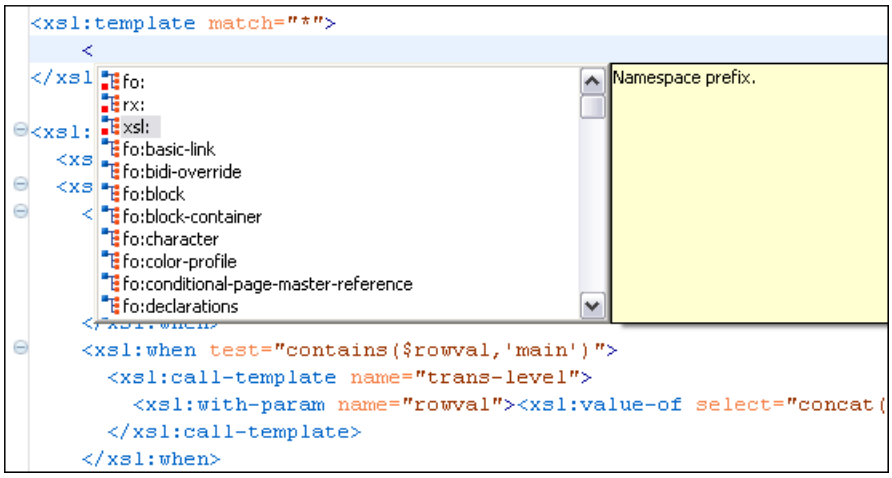


Figure 370: Namespace Prefixes in the Content Completion Assistant

For the common namespaces such as XSL namespace (`http://www.w3.org/1999/XSL/Transform`), XML Schema namespace (`http://www.w3.org/2001/XMLSchema`), or Saxon namespace (`http://icl.com/saxon` for version 1.0, `http://saxon.sf.net/` for version 2.0 / 3.0), Oxygen XML Editor plugin provides an easy mode to declare them by proposing a prefix for these namespaces.

Content Completion in XPath Expressions

In XSLT stylesheets, the *Content Completion Assistant* provides all the features available in the XML editor and also adds some enhancements. In XPath expressions used in attributes of XSLT stylesheets (elements such as `match`, `select`, and `test`), the *Content Completion Assistant* offers the names of XPath and XSLT functions, XSLT axes, and user-defined functions (the name of the function and its parameters). If a transformation scenario was defined and associated to the edited stylesheet, the *Content Completion Assistant* computes and presents elements and attributes based on:

- The input XML document selected in the scenario.
- The current context in the stylesheet.

The associated document is displayed in the **XSLT/XQuery Input** view.

Content completion for XPath expressions is started:

- On XPath operators detected in one of the `match`, `select` and `test` attributes of XSLT elements: ", ', /, //, (, [, |, :, ::, $
- For attribute value templates of non-XSLT elements, that is the { character when detected as the first character of the attribute value.
- On request, if the combination **Ctrl + Space (Command + Space on OS X)** is pressed inside an edited XPath expression.

The proposals presented in the *Content Completion Assistant* are dependent on:

- The context of the current XSLT element.
- The XML document associated with the edited stylesheet in the stylesheet transformation scenario.
- The XSLT version of the stylesheet (1.0, 2.0, or 3.0).

  Note: The XSLT 3.0 content completion list of proposals includes specific elements and attributes for the 3.0 version.

For example, if the document associated with the edited stylesheet is:

```
<personnel>
    <person id="Big.Boss">
        <name>
            <family>Boss</family>
            <given>Big</given>
        </name>
        <email>chief@oxygenxml.com</email>
        <link subordinates="one.worker"/>
    </person>
    <person id="one.worker">
        <name>
            <family>Worker</family>
            <given>One</given>
        </name>
        <email>one@oxygenxml.com</email>
        <link manager="Big.Boss"/>
    </person>
</personnel>
```

If you enter an `xsl:template` element using the *Content Completion Assistant*, the following actions are triggered:

- The `match` attribute is inserted automatically.
- The cursor is placed between the quotes.
- The XPath *Content Completion Assistant* automatically displays a pop-up window with all the XSLT axes, XPath functions and elements and attributes from the XML input document that can be inserted in the current context.

The set of XPath functions depends on the XSLT version declared in the root element `xsl:stylesheet`: 1.0, 2.0, or 3.0.

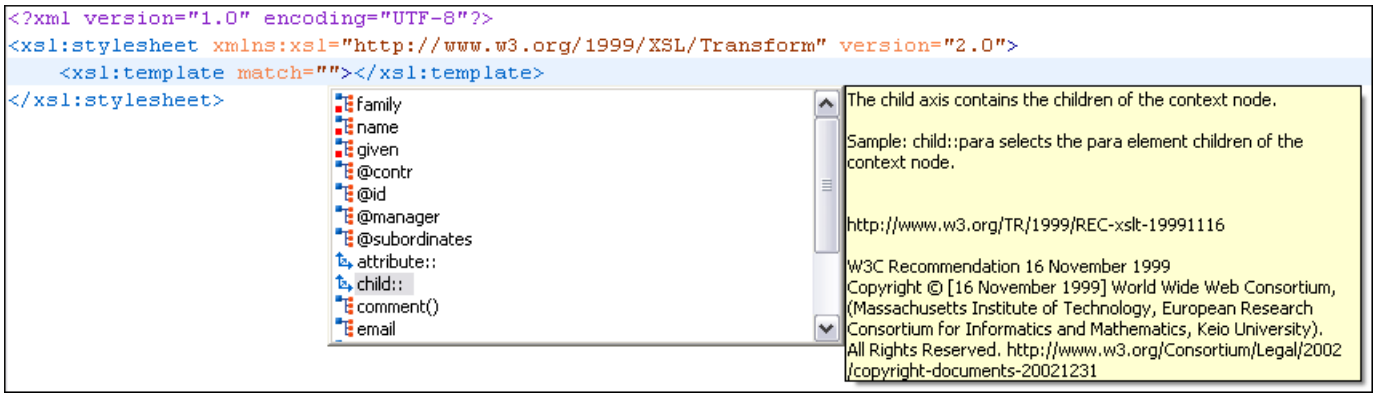


Figure 371: Content Completion in the `match` Attribute

If the cursor is inside the `select` attribute of an `xsl:for-each`, `xsl:apply-templates`, `xsl:value-of` or `xsl:copy-of` element the content completion proposals depend on the path obtained by concatenating the XPath expressions of the parent XSLT elements `xsl:template` and `xsl:for-each` as shown in the following figure:

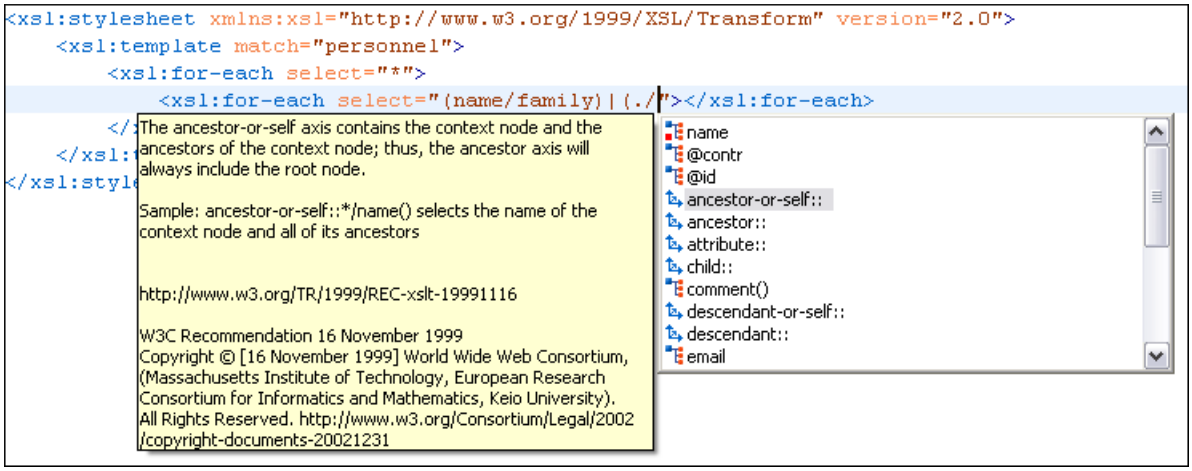


Figure 372: Content Completion in the `select` Attribute

Also XPath expressions typed in the `test` attribute of an `xsl:if` or `xsl:when` element benefit of the assistance of the content completion.

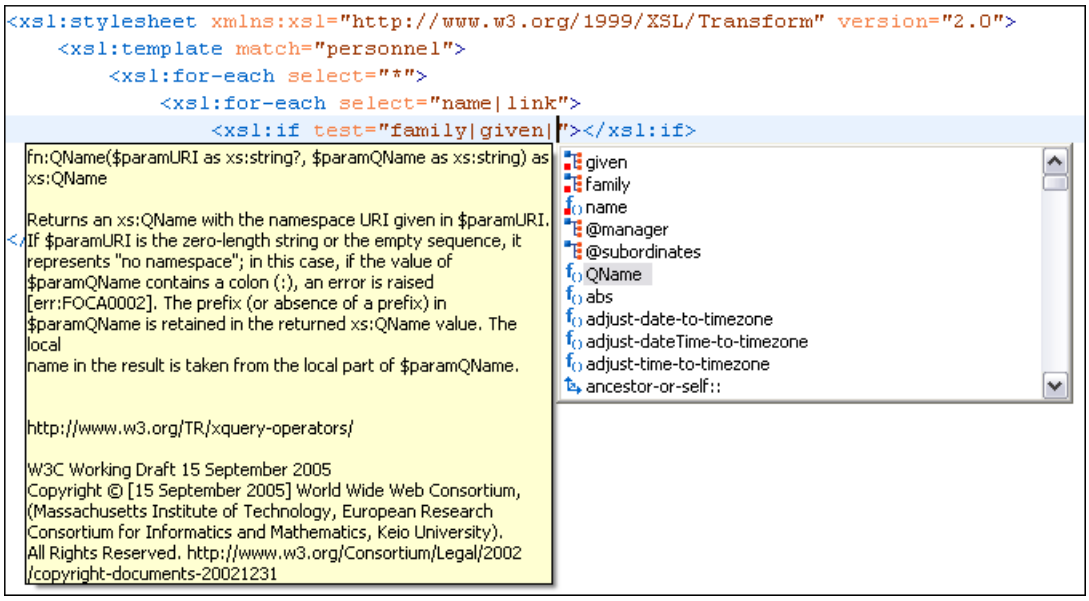


Figure 373: Content Completion in the `test` Attribute

XSLT variable references are easier to insert in XPath expressions with the help of the content completion pop-up triggered by the $ character, which signals the start of such a reference in an XPath expression.

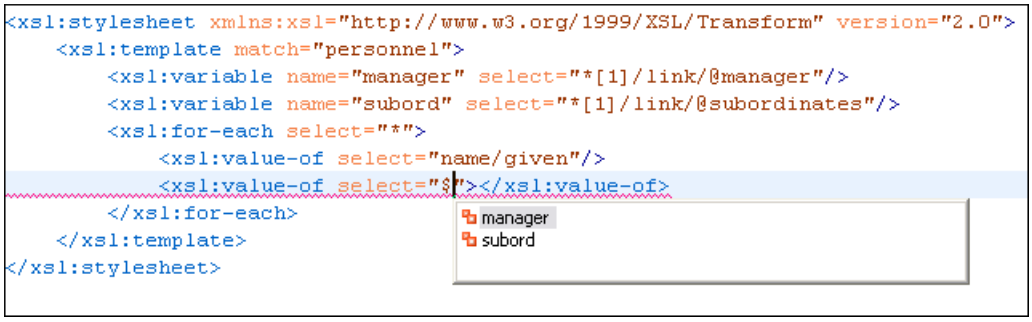


Figure 374: Content Completion in the `test` Attribute

If the { character is the first one in the value of the attribute, the same *Content Completion Assistant* is available also in attribute value templates of non-XSLT elements.

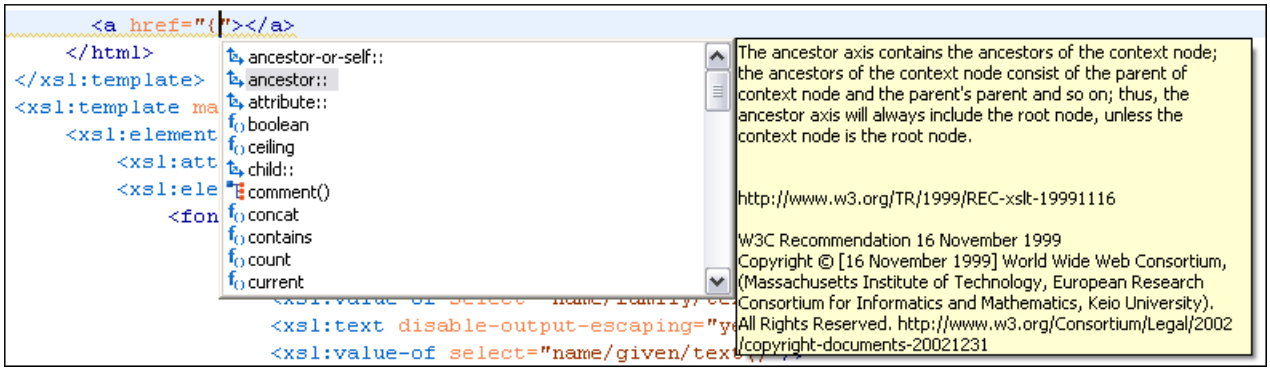


Figure 375: Content Completion in Attribute Value Templates

The time delay (configured in the **Content Completion** preferences page) for all content completion assistance windows is also applied for the content completion in XPath expressions.

Related Information:

Working with XPath Expressions on page 1129

Tooltip Helper for the XPath Functions Arguments

When editing the arguments of an XPath/XSLT function, Oxygen XML Editor plugin tracks the current entered argument by displaying a tooltip containing the function signature. The currently edited argument is highlighted with a bolder font.

When moving the cursor through the expression, the tooltip is updated to reflect the argument found at the cursor position.

Examples:

If you want to concatenate the absolute values of two variables, named *v1* and *v2*:

```
<xsl:template match="/">
    <xsl:value-of select="concat(abs($v1), abs($v2))"></xsl:value-of>
</xsl:template>
```

When moving the cursor before the first `abs` function, Oxygen XML Editor plugin identifies it as the first argument of the `concat` function. The tooltip shows in bold font the following information about the first argument:

- Its name is `$arg1`.
- Its type is `xdt:anyAtomicType`.
- It is optional (note the ? sign after the argument type).

The function also takes other arguments that have the same type and returns a `xs:string`.

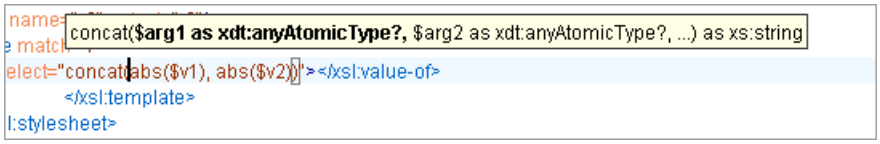


Figure 376: XPath Tooltip Helper - Identify the `concat` Function's First Argument

Moving the cursor on the first variable $v1, the editor identifies the `abs` as context function and shows its signature:

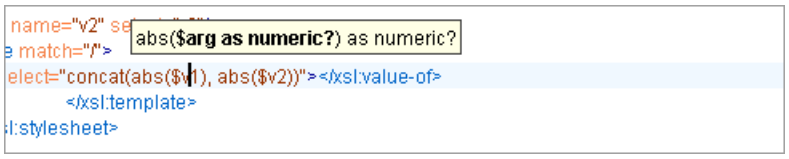


Figure 377: XPath Tooltip Helper - Identify the `abs` Function's Argument

Further, clicking the second `abs` function name, the editor detects that it represents the second argument of the `concat` function. The tooltip is repainted to display the second argument in bold font.

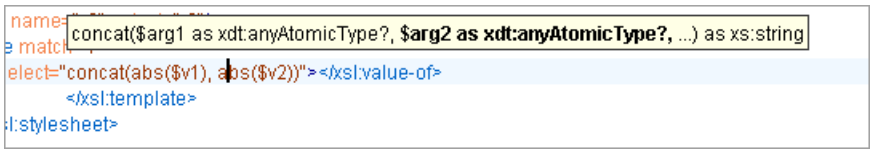


Figure 378: XPath Tooltip Helper - Identify the `concat` Function's Second Argument

Note: The tooltip helper is also available in the **XPath Builder** view.

Related Information:

Working with XPath Expressions on page 1129

Syntax Highlighting in XSLT

Oxygen XML Editor plugin supports syntax highlighting in XSLT documents to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for XSLT files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XSL** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/ Attributes by Prefix** preferences page.

Related Information:

Customize Syntax Highlight colors on page 92

XSLT Outline View

The **Outline** view for XSLT stylesheets displays the list of all the components (templates, attribute-sets, character-maps, variables, functions, keys, outputs) from both the edited stylesheet and its imports or includes. For XSL and XSD resources, the **Outline** view collects its components starting from the *master files*. The master files can be defined in the project or in the associated validation scenario. For further details about the *Master Files* support go to Defining Master Files at Project Level.

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

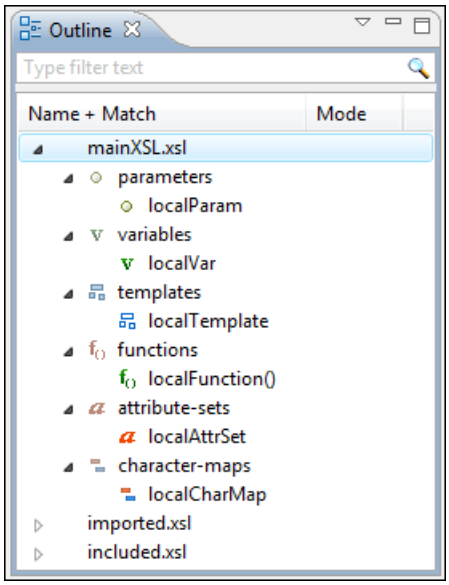


Figure 379: XSLT Outline View

The following actions are available in the **View Menu** on the **Outline** view action bar:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches;

Selection update on cursor move

Controls the synchronization between **Outline** view and source document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes in the XSLT editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

When the **Show components** option is selected, the following actions are available:

Show XML structure

Displays the XML document structure in a tree-like structure.

Show all components

Displays all components that were collected starting from the *master file*. This option is set by default.

Show only local components

Displays the components defined in the current file only.

Group by location/type

The stylesheet components can be grouped by location and type.

When the **Show XML structure** option is selected, the following actions are available:

Show components

Switches the **Outline** view to the components display mode.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the **XML Structured Outline** preferences page.

The following contextual menu actions are also available when the **Show components** option is selected in the **View menu**:

Edit Attributes

Opens a small in-place editor that allow you to edit the attributes of the selected node.

Cut

Cuts the currently selected node.

Copy

Copies the currently selected node.

Delete

Deletes the currently selected node.

Search References Ctrl + Shift + R (Command + Shift + R on OS X)

Searches all references of the item found at current cursor position in the defined scope, if any. See Finding XSLT References and Declarations for more details.

Search References in

Searches all references of the item found at current cursor position in the specified scope. See Finding XSLT References and Declarations for more details.

Component Dependencies

Opens the **Component Dependencies** view that allows you to see the dependencies for the current selected component.

Resource Hierarchy

Opens the **Resource Hierarchy/Dependencies** view that displays the hierarchy for the currently selected resource.

Resource Dependencies

Opens the **Resource Hierarchy/Dependencies** view that displays the dependencies of the currently selected resource.

Rename Component in

Renames the selected component. See XSLT Refactoring Actions for more details.

The following contextual menu actions are available in the **Outline** view when the **Show XML structure** option is selected in the **View menu**:

Append Child

Displays a list of elements that you can insert as children of the current element.

Insert Before

Displays a list of elements that you can insert as siblings of the current element, before the current element.

Insert After

Displays a list of elements that you can insert as siblings of the current element, after the current element.

Edit Attributes

Opens a small in-place editor that allow you to edit the attributes of the selected node.

Toggle Comment

Comments/uncomments the currently selected element.

Search references

Searches for the references of the currently selected component.

Search references in

Searches for the references of the currently selected component in the context of a scope that you define.

Component dependencies

Opens the **Component Dependencies** view that displays the dependencies of the currently selected component.

Rename Component in

Renames the currently selected component in the context of a scope that you define.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

The stylesheet components information is presented on two columns: the first column presents the `name` and `match` attributes, the second column the `mode` attribute. If you know the component name, match or mode, you can search it in the **Outline** view by typing one of these pieces of information in the filter text field from the top of the view or directly on the tree structure. When you type de component name, match or mode in the text field, you can switch to the tree structure using:

- Keyboard arrow keys
- **Enter** key
- **Tab** key
- **Shift-Tab** key combination

To switch from tree structure to the filter text field, you can use **Tab** and **Shift-Tab**.

Tip: The search filter is case insensitive. The following wildcards are accepted:

- ***** - any string
- **?** - any character
- **,** - patterns separator

If no wildcards are specified, the string to search is used as a partial match.

The content of the **Outline** view and the editing area are synchronized. When you select a component in the **Outline** view, its definition is highlighted in the editing area.

Oxygen XML Editor plugin allows you to sort the components of the tree in the **Outline** view.

Note: Sorting groups in the **Outline** view is not supported.

Oxygen XML Editor plugin has a predefined order of the groups in the **Outline** view:

- For location, the names of the files are sorted alphabetically. The file you are editing is located at the top of the list.
- For type, the order is: parameters, variables, templates, functions, set attributes, character-map.

  Note: When no grouping is available and the table is not sorted, Oxygen XML Editor plugin sorts the components depending on their order in the document. Oxygen XML Editor plugin also takes into account the name of the file that the components are part of.

XSLT/XQuery Input View

The structure of the XML document associated to the edited XSLT stylesheet, or the structure of the source documents of the edited XQuery is displayed in a tree form in a view called the **XSLT/XQuery Input** view. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu. The tree nodes represent the elements of the documents.

XSLT

If you click a node in the **XSLT/XQuery Input** view, the corresponding template from the stylesheet is highlighted. A node can be dragged from this view and dropped in the editor area for quickly inserting `xsl:template`, `xsl:for-each`, or other XSLT elements that have the `match/select/test` attribute already completed. The value of the attribute is the correct XPath expression that refers to the dragged tree node. This value is based on the current editing context of the drop spot.

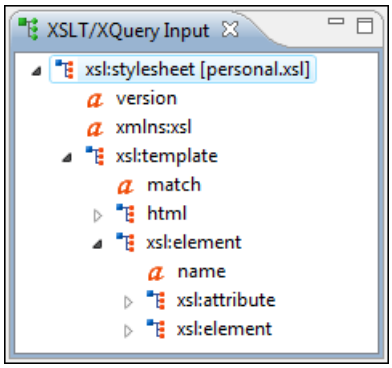


Figure 380: XSLT Input View

XSLT Example:

For the following XML document:

```
<personnel>
    <person id="Big.Boss">
        <name>
            <family>Boss</family>
            <given>Big</given>
        </name>
        <email>chief@oxygenxml.com</email>
        <link subordinates="one.worker"/>
    </person>
    <person id="one.worker">
        <name>
            <family>Worker</family>
            <given>One</given>
        </name>
        <email>one@oxygenxml.com</email>
        <link manager="Big.Boss"/>
    </person>
</personnel>
```

and the following XSLT stylesheet:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
        version="2.0">
    <xsl:template match="personnel">
        <xsl:for-each select="*">

        </xsl:for-each>
    </xsl:template>
</xsl:stylesheet>
```

if you drag the `given` element and drop it inside the `xsl:for-each` element, the following pop-up menu is displayed:

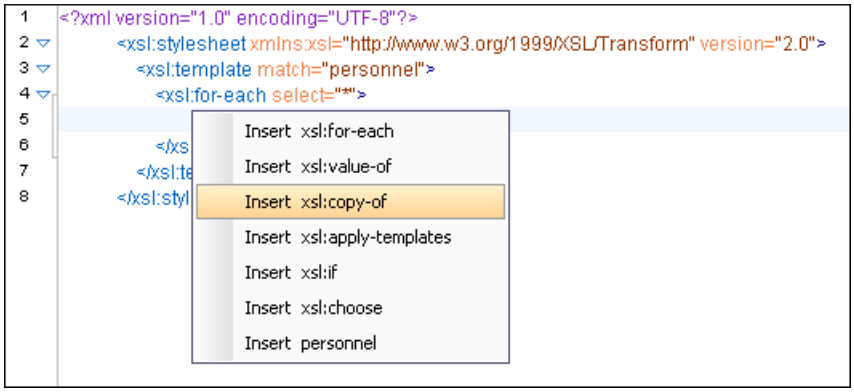


Figure 381: XSLT Input Drag and Drop Pop-up Menu

If you select **Insert xsl:copy-of** (for example), the resulting document will look like this:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0">
    <xsl:template match="personnel">
        <xsl:for-each select="*">
            <xsl:copy-of select="name/given"/>
        </xsl:for-each>
    </xsl:template>
</xsl:stylesheet>
```

Figure 382: XSLT Input Drag and Drop Result

XQuery

You can also use the **XSLT/XQuery Input** view to drag and drop a node into the editing area to quickly insert XQuery expressions.

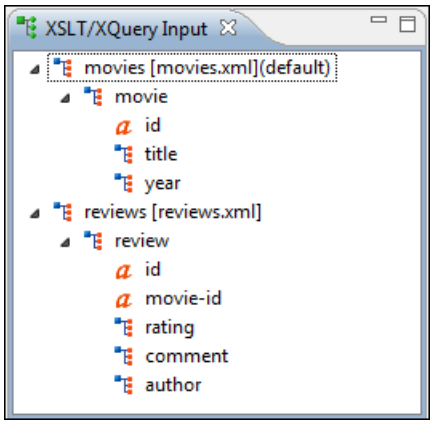


Figure 383: XQuery Input View

XQuery Example:

For the following XML documents:

```
<movies>
<movie id="1">
<title>The Green Mile</title>
<year>1999</year>
</movie>
<movie id="2">
<title>Taxi Driver</title>
<year>1976</year>
</movie>
</movies>
```

```
<reviews>
<review id="100" movie-id="1">
<rating>5</rating>
<comment>It is made after a great Stephen King book.
</comment>
<author>Paul</author>
</review>
<review id="101" movie-id="1">
<rating>3</rating>
<comment>Tom Hanks does a really nice acting.</comment>
<author>Beatrice</author>
</review>
<review id="104" movie-id="2">
<rating>4</rating>
<comment>Robert De Niro is my favorite actor.</comment>
<author>Maria</author>
</review>
</reviews>
```

and the following XQuery:

```
let $review := doc("reviews.xml")
for $movie in doc("movies.xml")/movies/movie
let $movie-id := $movie/@id
return
<movie id="{$movie/@id}">
{$movie/title}
{$movie/year}
<maxRating>
{

}
</maxRating>
</movie>
```

If you drag the **review** element and drop it between the braces, the following pop-up menu is displayed:

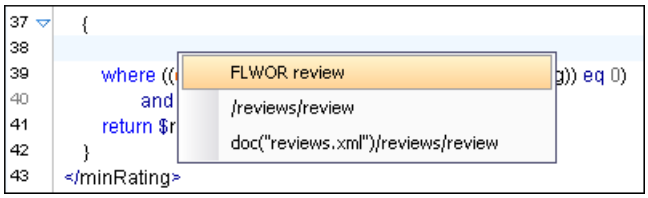


Figure 384: XQuery Input Drag and Drop Pop-up Menu

Select **FLWOR review**, the resulting document will look like this:

```
{
    for $review in doc("reviews.xml")/reviews/review
    return
    where ((compare($rev/rating/text(), string($minRating)) eq 0)
            and ($rev/@movie-id = $movie/@id))
    return $rev/author
}
```

Figure 385: XQuery Input Drag and Drop Result

XSLT Resource Hierarchy/Dependencies View

The **Resource Hierarchy/Dependencies** view allows you to see the hierarchy/dependencies for a stylesheet. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

If you want to see the hierarchy of a stylesheet, select the desired stylesheet in the **Navigator** view and choose **Resource Hierarchy** from the contextual menu.

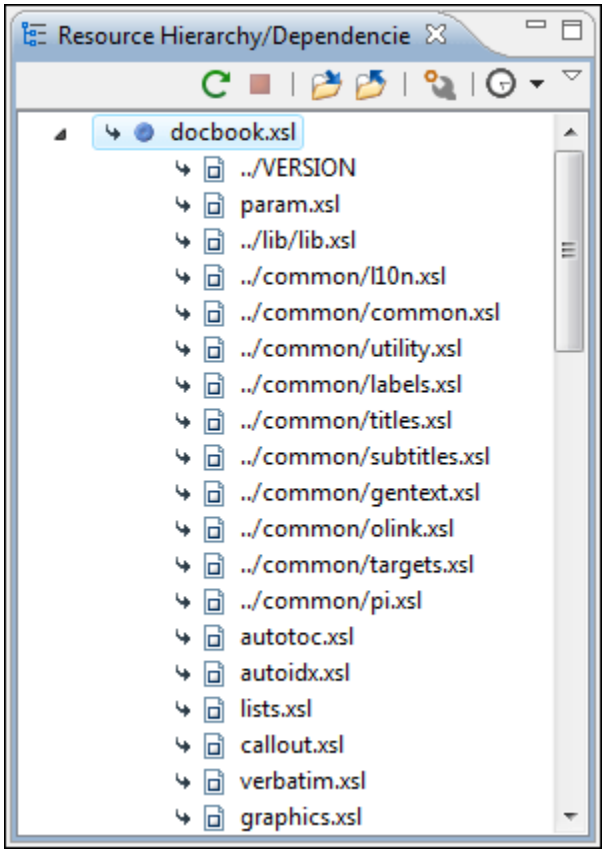


Figure 386: Resource Hierarchy/Dependencies View - Hierarchy for `docbook.xsl`

If you want to see the dependencies of a stylesheet, select the desired stylesheet in the **Navigator** view and choose **Resource Dependencies** from the contextual menu.

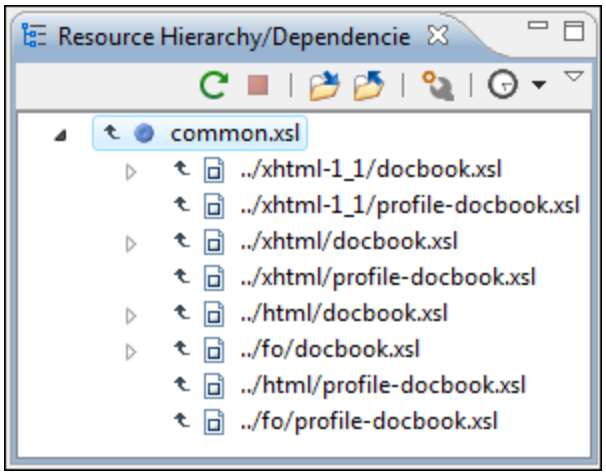


Figure 387: Resource Hierarchy/Dependencies View - Dependencies for common.xsl

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Related Information:

Search and Refactor Operations Scope on page 588

Moving/Renaming XSLT Resources

You can move and rename a resource presented in the **Resource/Hierarchy Dependencies** view, using the **Rename resource** and **Move resource** refactoring actions from the contextual menu.

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

XSLT Component Dependencies View

The **Component Dependencies** view allows you to see the dependencies for a selected component. This is helpful if you want to see where components are used in the entire hierarchy. For example, if you want to find all the references where a given component is used.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

To see the dependencies of an XSLT component:

1. Right-click the desired component in the editor or **Outline** view.
2. Select the **Component Dependencies** action from the contextual menu.

The action is available for all named components (templates, variables, parameters, attribute sets, keys, functions, outputs).

If a component contains multiple references, a small table is displayed at the bottom of the view that contains all the references. When a recursive reference is encountered, it is marked with a special icon .

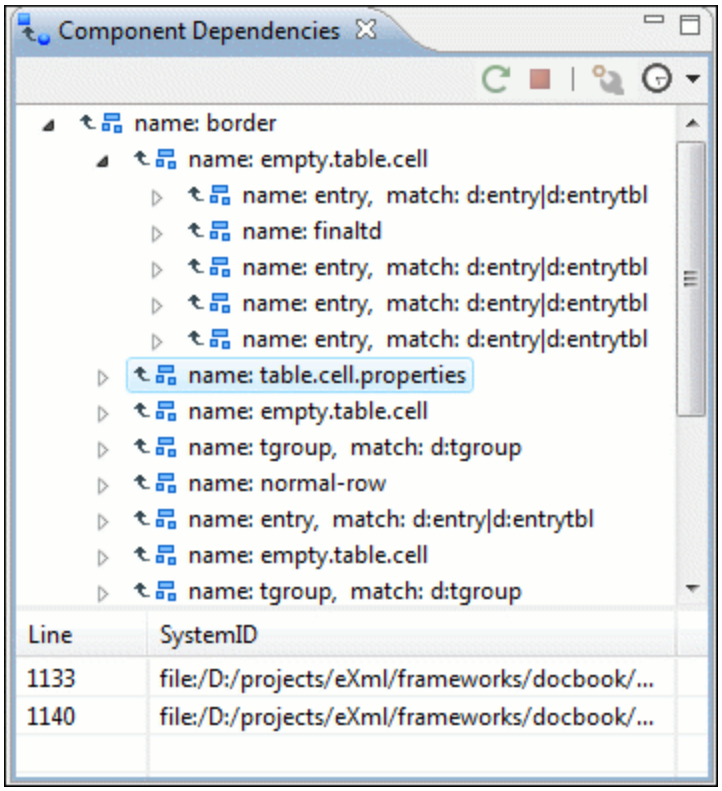


Figure 388: Component Dependencies View - Hierarchy for table.xsl

The **Component Dependencies** view includes the following toolbar actions:

Refresh

Refreshes the dependencies structure.

Stop

Stops the dependency computation.

Configure

Allows you to choose the search scope for computing the dependencies structure. This is helpful for making sure all imported/included resources are computed.

History

Allows you to select from a list of the most recently used dependency computations.

In addition, the following actions are available in the contextual menu:

Go to First Reference

Selects the first reference of the currently selected component in the dependencies tree.

Go to Component

Shows the definition of the currently selected component in the dependencies tree.

Related Information:

Search and Refactor Operations Scope on page 588

Highlight Component Occurrences

When a component (for example variable or named template) is found at current cursor position, Oxygen XML Editor plugin performs a search over the entire document to find the component declaration and all its references. When found, they are highlighted both in the document and in the stripe bar, at the right side of the document.

Note: Oxygen XML Editor plugin also supports occurrences highlight for template modes.

Customizable colors are used: one for the component definition and another one for component references. Occurrences are displayed until another component is selected and a new search is performed. All occurrences are removed when you start to edit the document.

This feature is enabled by default. To configure it, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**. A search can also be triggered with the **Search** > **Search Occurrences in File (Ctrl + Shift + U (Command + Shift + U on OS X))** contextual menu action. Matches are displayed in separate tabs of the **Results** view.

Finding XSLT References and Declarations

The following search actions related with XSLT references and declarations are available from the **Search** submenu of the contextual menu:

- **Search References** (Also available from the **XSL** menu) - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined but the currently edited resource is not part of the range of determined resources, a warning dialog box is displayed that allows you to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when a scope is defined.
- **Search Declarations** (Also available from the **XSL** menu) - Searches all declarations of the item found at current cursor position in the defined scope, if any. If a scope is defined but the current edited resource is not part of the range of resources determined by this scope, a warning dialog box is displayed that allows you to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when a scope is defined.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

The following action is available from the **XSL** menu:

- **Go to Definition** - Moves the cursor to the location of the definition of the current item.

  Note: You can also use the **Ctrl + Single-Click (Command + Single-Click on OS X)** shortcut on a reference to display its definition.

Related Information:

Search and Refactor Operations Scope on page 588

XSLT Stylesheet Component Documentation Support

Oxygen XML Editor plugin offers built-in support for documenting XSLT stylesheets. If the expanded *QName* of the element has a non-null namespace URI, the `xsl:stylesheet` element may contain any element not from the XSLT namespace. Such elements are referenced as user-defined data elements. Such elements can contain the documentation for the stylesheet and its elements (top-level elements whose names are in the XSLT namespace). Oxygen XML Editor plugin offers its own XML schema that defines such documentation elements. The schema is named `stylesheet_documentation.xsd` and can be found in *`[OXYGEN_INSTALL_DIR]`*`/frameworks/stylesheet_documentation`. The user can also specify a custom schema in XSL Content Completion options.

Content Completion

When content completion is invoked inside an XSLT editor by pressing **Ctrl + Space (Command + Space on OS X)**, it offers elements from the XSLT documentation schema (either the built-in one or one specified by user).

Adding Documentation Blocks

In **Text** mode, to add documentation blocks, press **Ctrl + Alt + D (Command + Alt + D on OS X)** or select **Add component documentation** from the contextual menu.

In **Author** mode, the following stylesheet documentation actions are available in the contextual menu, **Component Documentation** submenu:

- **Add component documentation** - Adds documentation blocks for the component at cursor position.
- **Paragraph** - Inserts a new documentation paragraph.
- **Bold** - Makes the selected documentation text bold.
- **Italic** - Makes the selected documentation text italic.
- **List** - Inserts a new list.
- **List Item** - Inserts a list item.
- **Reference** - Inserts a documentation reference.

If the cursor is positioned inside the `xsl:stylesheet` element context, documentation blocks are generated for all XSLT elements. If the cursor is positioned inside a specific XSLT element (such as a template or function), a documentation block is generated for that element only.

Example: Documentation Block Using Oxygen XML Editor plugin Built-in Schema

```
<xd:doc>
  <xd:desc>
    <xd:p>Search inside parameter <xd:i>string</xd:i>
        for the last occurrence of parameter
    <xd:i>searched</xd:i>. The substring starting from the 0 position
        to the identified last occurrence will be returned.
    <xd:ref name="f:substring-after-last" type="function"
        xmlns:f="http://www.oxygenxml.com/doc/xsl/functions">See also
    </xd:ref>
    </xd:p>
  </xd:desc>
  <xd:param name="string">
    <xd:p>String to be analyzed</xd:p>
    </xd:param>
  <xd:param name="searched">
    <xd:p>Marker string. Its last occurrence will be identified</xd:p>
    </xd:param>
  <xd:return>
    <xd:p>A substring starting from the beginning of <xd:i>string</xd:i>
        to the last occurrence of <xd:i>searched</xd:i>.
        If no occurrence is found an empty string will be returned.
    </xd:p>
  </xd:return>
</xd:doc>
```

XSLT Documentation Links

Oxygen XML Editor plugin includes support for links inside XSLT documentation blocks. Using a construct like `<xd:a docid="user-defined-id">TEXT</xd:a>` will cause the browser to scroll to the particular anchor (the defined ID) in the current document. Using a construct like `<xd:a href="http://www.my-web-site">TEXT</xd:a>` or `<xd:a href="local-file-path/filename">TEXT</xd:a>` will open the referenced link in a new tab.

Example: Documentation Links

```
<xd:doc xmlns:xd="http://www.oxygenxml.com/ns/doc/xsl" id="thisDoc">
   <xd:desc>
      <xd:p>
         <xd:ref name="test" type="variable">My test variable</xd:ref>
            <xd:a docid="thisDoc">Link to this documentation, see
the the id="thisDoc" above</xd:a>
            <xd:a docid="otherDocID" href="included.xsl">Link to
otherDocID defined in included.xsl</xd:a>
      </xd:p>
   </xd:desc>
</xd:doc>
```

Related Information:

Generating Documentation for an XSLT Stylesheet on page 649

XSLT 3.0 Text Value Templates

Oxygen XML Editor plugin offers built-in support for XSLT 3.0 *Text Value Templates*, including content completion to present the variables and parameters from the current context and syntax highlighting.

A text node in the stylesheet is treated as a *text value template* if the following things are true:

- It is part of a sequence constructor or a child of an `xsl:text` instruction.
- There is an ancestor element with an `[xsl:]expand-text` attribute and on the innermost ancestor element that has such an attribute, the value of the attribute is `yes`.

Example:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
xmlns:xs="http://www.w3.org/2001/XMLSchema"
expand-text="yes"
version="3.0">

  <xsl:param name="seq" as="xs:string*" select="'c', 'a', 'b', 'z'"/>
  <xsl:template name="main">
    {sort($seq)}
  </xsl:template>
</xsl:stylesheet>
```

For more information, see: W3C XSLT Specifications: Text Value Templates.

XSLT Refactoring Actions

Oxygen XML Editor plugin offers a set of actions that allow you to change the structure of an XSLT stylesheet without changing the results of running it in an XSLT transformation. Depending on the selected text, the following XSLT refactoring actions are available from the **Refactoring** submenu of the contextual menu:

- **Extract template** (Active only when the selection contains well-formed elements) - Extracts the selected XSLT instructions sequence into a new template. It opens a dialog box that allows you to specify the name of the new template to be created. The possible changes to perform on the document can be previewed before altering the document. After pressing OK, the template is created and the selection is replaced with a `<xsl:call-template>` instruction referencing the newly created template.

  Note: The newly created template is indented and its name is highlighted in the `<xsl:call-template>` element.
- **Extract function** - Extracts the selected XSLT instructions sequence into a new function. It opens a dialog box that allows you to specify the name of the new function. It then moves the selected lines to a newly created XSLT function and inserts a function call in the place of the selected lines. You can also use parts of an XPath expression to create the new functions.
- **Create local variable** - Creates an XSLT variable, wrapped around the selection. It opens a dialog box that allows you to specify the name of the new variable. It then wraps the selection in the variable and you can reference it at anytime in the code.
- **Move to another stylesheet** (Active only when entire components are selected) - Allows you to move one or more XSLT global components (templates, functions, or parameters) to another stylesheet. It opens a dialog box that allows you to specify where the selected components will be moved to. Follow these steps when using the dialog box:

  1. Choose whether you want to move the selected components to a new stylesheet or an existing one.
  2. If you choose to move the components to an existing one, select the destination stylesheet. Press the **Choose** button to select the destination stylesheet file. Oxygen XML Editor plugin will automatically check if the destination stylesheet is already contained by the hierarchy of the current stylesheet. If it is not contained, choose whether or not the destination stylesheet will be referenced (imported or included) from the current stylesheet. The following options are available:
     - **Include** - The current stylesheet will use an `xsl:include` instruction to reference the destination stylesheet.
     - **Import** - The current stylesheet will use an `xsl:import` instruction to reference the destination stylesheet.
     - **None** - There will be created no relation between the current and destination stylesheets.
  3. Press the **Move** button to move the components to the destination. The moved components are highlighted in the destination stylesheet.
- **Convert attributes to xsl:attributes** - Converts the attributes from the selected element and represents each of them with an `<xsl:attribute>` instruction. For example, the following element:

  ```
  <person id="Big{test}Boss"/>
  ```

is converted to:

```
<person>
    <xsl:attribute name="id">
        <xsl:text>Big</xsl:text>
        <xsl:value-of select="test"/>
        <xsl:text>Boss</xsl:text>
    </xsl:attribute>
</person>
```

- **Convert xsl:attributes to attributes** - Converts `<xsl:attribute>` elements to inline attributes for elements outside the XSL namespace. For example, the following element: It is the reverse of the **Convert attributes to xsl:attributes** action with the following limitations:
  - The `<xsl:attribute>` element is "text only".
  - The `<xsl:attribute>` element has a single `xsl:text` child element.
  - The `<xsl:attribute>` element has a single `xsl:value-of` child element. In this case, the value of the attribute will be the XPath expression from the `select` attribute surrounded by curly brackets (*text value template*).

```
<person>
  <xsl:attribute name="id">john.doe</xsl:attribute>
  <xsl:attribute name="email"><xsl:text>john.doe@example.com</xsl:text></xsl:attribute>
  <xsl:attribute name="manager"><xsl:value-of select="person[@id='boss']/name"/></xsl:attribute>
</person>
```

is converted to:

```
<person id="john.doe" email="john.doe@example.com" manager="{person[@id='boss']/name}"/>
```

- **Convert xsl:if into xsl:choose/xsl:when** - Converts one or more `xsl:if` element blocks into one or more `xsl:when` blocks surrounded by an `xsl:choose` element. If it is invoked on a selection, the selection must contain a well-formed fragment. If there is no selection, the `xsl:if` element that surrounds the content at the current cursor position is converted.

  For example, the following block:

```
<xsl:if test="a">
  <!-- XSLT code -->
</xsl:if>
```

  is converted to:

```
<xsl:choose>
    <xsl:when test="a">
        <!-- XSLT code -->
    </xsl:when>
    <xsl:otherwise>
        |
    </xsl:otherwise>
</xsl:choose>
```

  (where the | character is the current cursor position)
- **Convert xsl:choose/xsl:when into xsl:if** - Converts each `xsl:when` block into an `xsl:if` block. For the *otherwise* branch, it also adds an *and* statement to each negated form of the conditions. For example, the following block:

```
<xsl:choose>
    <xsl:when test="c1">
        <!-- XSLT statement 1 -->
    </xsl:when>
    <xsl:when test="c2">
        <!-- XSLT statement 2 -->
    </xsl:when>
    <xsl:when test="c3">
        <!-- XSLT statement 3 -->
    </xsl:when>
    <xsl:otherwise>
        <!-- XSLT "otherwise" statement-->
    </xsl:otherwise>
</xsl:choose>
```

  is converted to:

```
<xsl:if test="c1">
```

```
    <!-- XSLT statement 1 -->
</xsl:if>
<xsl:if test="c2">
    <!-- XSLT statement 2 -->
</xsl:if>
<xsl:if test="c3">
    <!-- XSLT statement 3 -->
</xsl:if>
<xsl:if test="not(c1) and not(c2) and not(c3)">
    <!-- XSLT "otherwise" statement-->
</xsl:if>
```

- **Extract local variable** (Active on a selection made inside an attribute that contains an XPath expression) - Allows you to create a new local variable by extracting the selected XPath expression. After creating the new local variable before the current element, Oxygen XML Editor plugin allows you to edit the name of the variable.
- **Extract global variable** (Active on a selection made inside an attribute that contains an XPath expression) - Allows you to create a new global variable by extracting the selected XPath expression. After creating the new global variable, Oxygen XML Editor plugin allows you to edit the name of the variable.

  Note: Oxygen XML Editor plugin checks if the selected expression depends on local variables or parameters that are not available in the global context where the new variable is created.
- **Extract template parameter** (Active on a selection made inside an attribute that contains an XPath expression) - Allows you to create a new template parameter by extracting the selected XPath expression. After creating the new parameter, Oxygen XML Editor plugin allows you to edit the name of the parameter.
- **Extract global parameter** (Active on a selection made inside an attribute that contains an XPath expression) - Allows you to create a new global parameter by extracting the selected XPath expression. After creating the new parameter, Oxygen XML Editor plugin allows you to edit the name of the parameter.

  Note: Oxygen XML Editor plugin checks if the selected expression depends on local variables or parameters that are not available in the global context where the new parameter is created.
- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

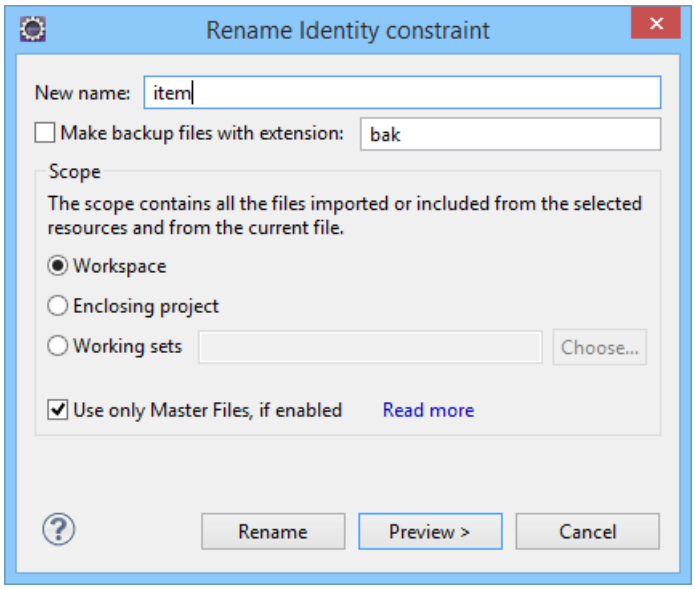


Figure 389: Rename Identity Constraint Dialog Box

Note: Many of these refactoring actions are also proposed by the *Quick Assist* support.

For more information about XSLT refactoring, watch our video demonstration:

https://www.youtube.com/embed/4ir5XWyp8Zo

XSLT Quick Assist Support

The *Quick Assist* support helps you to rapidly access search and refactoring actions. If one or more actions are available in the current context, they are accessible via a yellow bulb help ( ) placed at the current line in the stripe on the left side of the editor. Also, you can invoke the *Quick Assist* menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

Two categories of actions are available in the *Quick Assist* menu:

- Actions available on a selection made inside an attribute that contains an XPath expression:

  Extract template

  Extracts the selected XSLT instructions sequence into a new template.

  Move to another stylesheet

  Allows you to move one or more XSLT global components (templates, functions, or parameters) to another stylesheet.

  Extract local variable

  Allows you to create a new local variable by extracting the selected XPath expression.

  Extract global variable

  Allows you to create a new global variable by extracting the selected XPath expression.

  Extract template parameter

  Allows you to create a new template parameter by extracting the selected XPath expression.

  Extract global parameter

  Allows you to create a new global parameter by extracting the selected XPath expression.

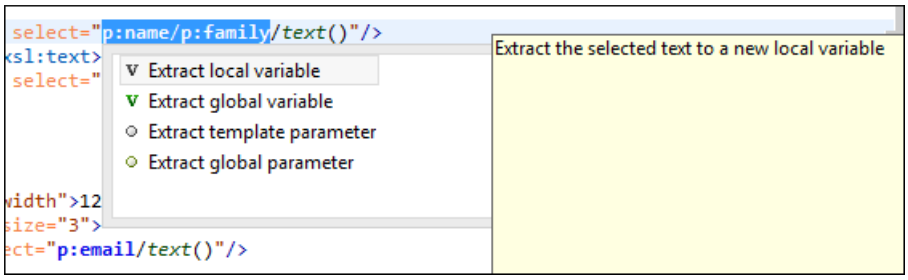


Figure 390: XSLT Quick Assist Support - Refactoring Actions

- Actions available when the cursor is positioned over the name of a component:

  Rename Component in

  Renames the component and all its dependencies.

  Search Declarations

  Searches the declaration of the component in a predefined scope. It is available only when the context represents a component name reference.

  Search References

  Searches all references of the component in a predefined scope.

  Component Dependencies

  Searches the component dependencies in a predefined scope.

  Change Scope

  Configures the scope that will be used for future search or refactor operations.

Rename Component

Allows you to rename the current component in-place.

Search Occurrences

Searches all occurrences of the component within the current file.

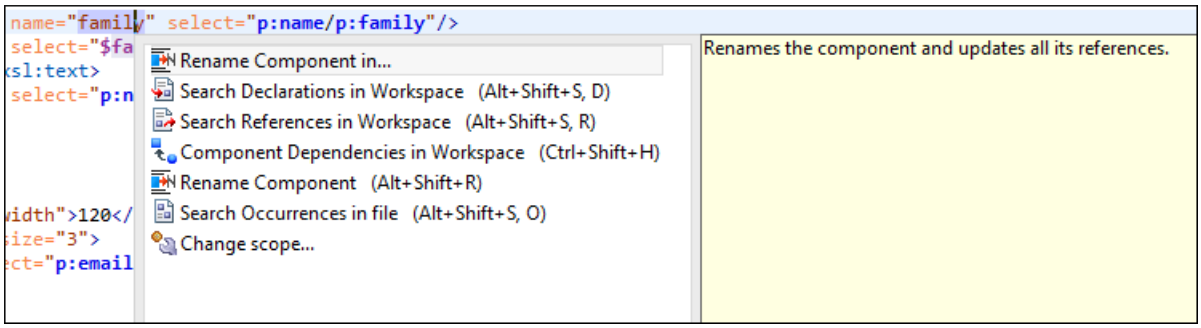


Figure 391: XSLT Quick Assist Support - Component Actions

Related Information:

Component Dependencies View on page 639
XSLT Hierarchy View on page 637
XSLT Refactoring Actions on page 643
Search and Refactor Operations Scope on page 588

XSLT Unit Test (XSpec)

XSpec is a behavior driven development (BDD) *framework* for XSLT, XQuery, and Schematron. XSpec consists of a syntax for describing the behavior of your XSLT, XQuery, or Schematron code, and some code that enables you to test your code against those descriptions.

Creating an XSLT Unit Test

To create an XSLT Unit Test, go to **File** > **New** > **XSLT Unit Test**. You can also create an XSLT Unit Test from the contextual menu of an XSL file in the **Navigator** view. Oxygen XML Editor plugin allows you to customize the XSpec document when you create it. In the customization dialog box, you can enter the path to an XSL document or to a master XSL document.

When you create an XSpec document based on an XSL document, Oxygen XML Editor plugin uses information from the validation and transformation scenarios associated with the XSL file. From the transformation scenario Oxygen XML Editor plugin uses extensions and properties of Saxon 9.8.0.8, improving the Ant scenario associated with the XSpec document.

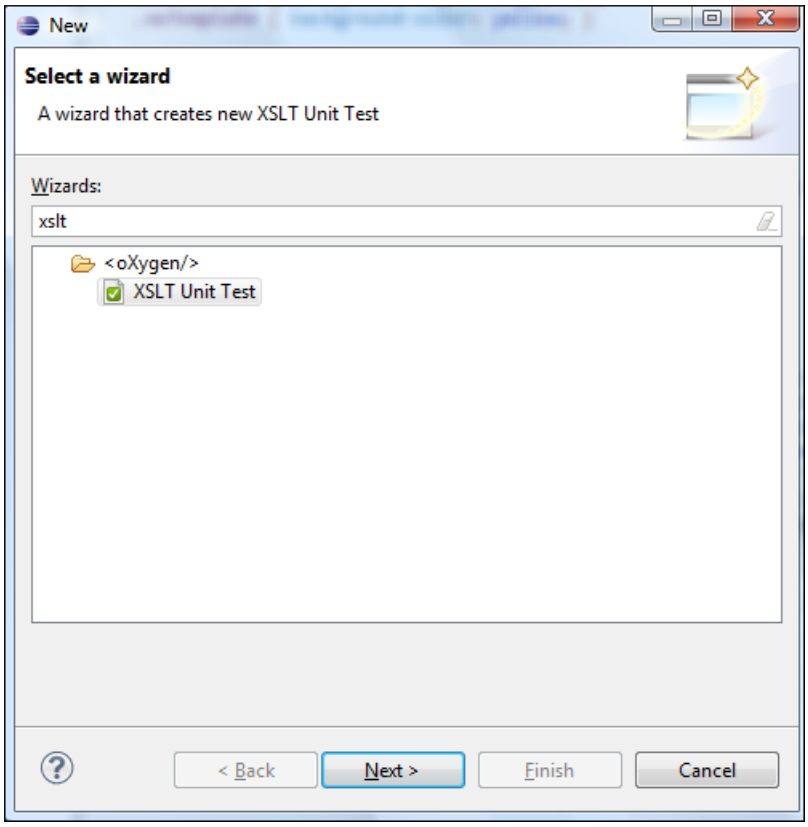


Figure 392: New XSLT Unit Test Wizard

Running an XSLT Unit Test

To run an XSLT Unit Test, open the XSpec file in an editor and click **Apply Transformation Scenario(s)** on the main toolbar. This will run the built-in **Run XSpec Test** transformation scenario that is defined in the XSpec *framework*.

Testing a Stylesheet

An XSpec file contains one or more test scenarios. You can test a stylesheet in one of the following ways:

- Test an entire stylesheet.

  Testing is performed in a certain context. You can define a context as follows:

  - Inline context, building the test based on a string.

    ```
    <x:scenario label="when processing a para element">
        <x:context>
            <para>...</para>
        </x:context>
        ...
    </x:scenario>
    ```

  - Based on an external file, or on a part of an external file extracted with an XPath expression.

    ```
    <x:scenario label="when processing a para element">
        <x:context href="source/test.xml" select="/doc/body/p[1]" />
        ...
    </x:scenario>
    ```

- Test a function.

  ```
  <x:scenario label="when capitalising a string">
    <x:call function="eg:capital-case">
      <x:param select="'an example string'" />
      <x:param select="true()" />
    </x:call>
    ...
  ```

```
</x:scenario>
```

- Test a template with a name.

```
<x:scenario label="when creating a table">
  <x:call template="createTable">
    <x:param name="nodes">
      <value>A</value>
      <value>B</value>
    </x:param>
    <x:param name="cols" select="2" />
  </x:call>
</x:scenario>
```

You can reference test files between each other, which allows you to define a suite of tests. For further details about test scenarios, go to https://github.com/expath/xspec/wiki/Writing-Scenarios.

Adding a Catalog to an XSpec Transformation

If your XSLT needs a catalog, you can add one to the XSpec transformation by doing one of the following:

- If you are using a project in Oxygen XML Editor plugin, create a `catalog.xml` file in the project directory. This catalog will then be loaded automatically.
- Edit the **Run XSpec Test** transformation scenario, go to the **Parameters** tab, and set the value of the `catalog` parameter to the location of your catalog file.

Generating Documentation for an XSLT Stylesheet

You can use Oxygen XML Editor plugin to generate detailed documentation in HTML format for the elements (top-level elements whose names are in the XSLT namespace) of an XSLT stylesheet. You can select what XSLT elements to include in the generated documentation and also the level of details to present for each of them. The elements are hyperlinked. To generate documentation in a custom output format, you can edit the XSLT stylesheet used to generate the documentation, or create your own stylesheet.

To open the **XSLT Stylesheet Documentation** dialog box, select **XSLT Stylesheet Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate Stylesheet Documentation** action from the contextual menu of the **Navigator** view.

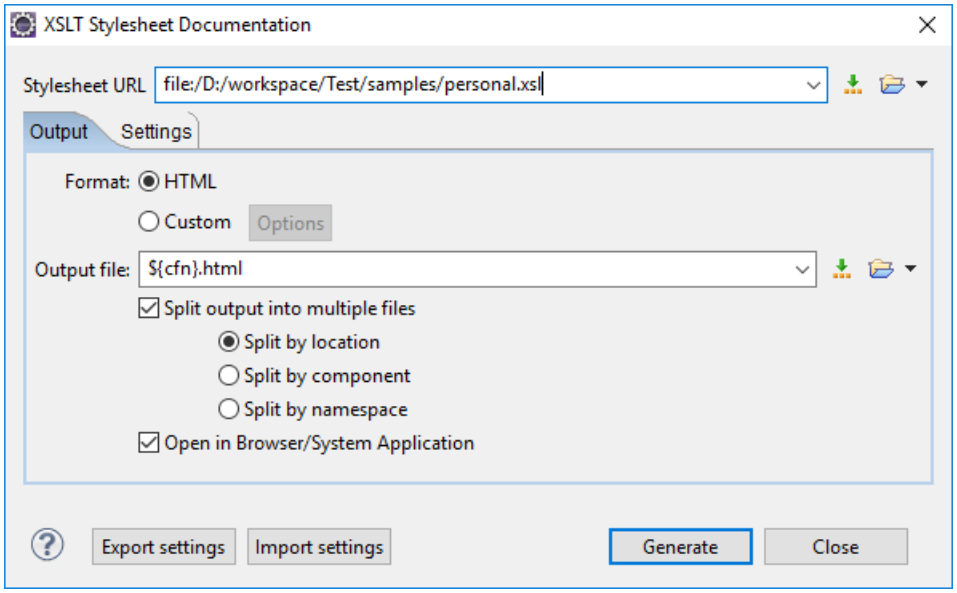


Figure 393: XSLT Stylesheet Documentation Dialog Box

The **XSL URL** field of the dialog box must contain the full path to the XSL Stylesheet file you want to generate documentation for. The stylesheet may be a local or a remote file. You can specify the path to the stylesheet by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:
  - **HTML** - The documentation is generated in HTML output format.
  - **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.
- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. For large XSLT stylesheets, choosing another split criterion may generate smaller output files, providing faster documentation browsing. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.

Settings Tab

When you generate documentation for an XSLT stylesheet you can choose what XSLT elements to include in the output (templates, functions, global parameters, global variables, attribute sets, character maps, keys, decimal formats, output formats, XSLT elements from referenced stylesheets) and the details to include in the documentation.

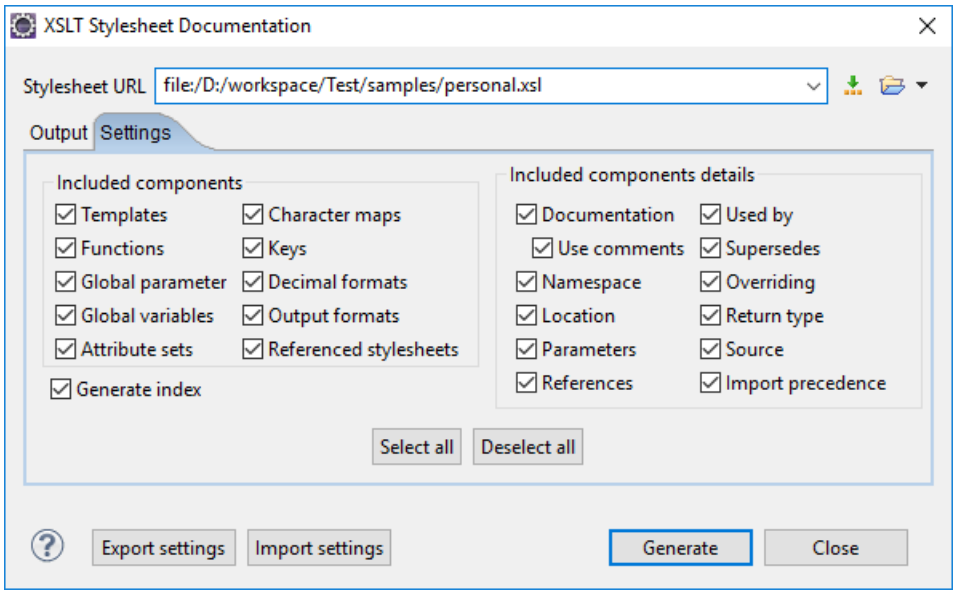


Figure 394: Settings Tab of the XSLT Stylesheet Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following components: **Templates**, **Functions**, **Global parameters**, **Global variables**, **Attribute sets**, **Character maps**, **Keys**, **Decimal formats**, **Output formats**, **Referenced stylesheets**.

You can choose whether or not to include the following other details:

- **Documentation** - Shows the documentation for each XSLT element. For HTML format, the user-defined data elements that are recognized and transformed in documentation blocks of the XSLT elements they precede, are the ones from the following schemas:

- Oxygen XML Editor plugin built-in XSLT documentation schema.
- A subset of DocBook 5 elements. The recognized elements are: *section*, *sect1* to *sect5*, *emphasis*, *title*, *ulink*, *programlisting*, *para*, *orderedlist*, *itemizedlist*.
- A subset of DITA elements. The recognized elements are: *concept*, *topic*, *task*, *codeblock*, *p*, *b*, *i*, *ul*, *ol*, *pre*, *sl*, *sli*, *step*, *steps*, *li*, *title*, *xref*.
- Full XHTML 1.0 support.
- XSLStyle documentation environment. XSLStyle uses DocBook or DITA languages inside its own user-defined data elements. The supported DocBook and DITA elements are the ones mentioned above.
- DOXSL documentation *framework*. Supported elements are : *codefrag*, *description*, *para*, *docContent*, *documentation*, *parameter*, *function*, *docSchema*, *link*, *list*, *listitem*, *module*, *parameter*, *template*, *attribute-set*;

  Other XSLT documentation blocks that are not recognized will just be serialized inside an HTML *pre* element. You can change this behavior by using a custom format instead of the built-in HTML format and providing your own XSLT stylesheets.

- **Use comments** - Controls whether or not the comments that precede an XSLT element is treated as documentation for the element they precede. Comments that precede or succeed the *xsl:stylesheet* element, are treated as documentation for the whole stylesheet. Note that comments that precede an import or include directive are not collected as documentation for the imported/included module. Also, comments from within the body of the XSLT elements are not collected at all.
- **Namespace** - Shows the namespace for named XSLT elements.
- **Location** - Shows the stylesheet location for each XSLT element.
- **Parameters** - Shows parameters of templates and functions.
- **References** - Shows the named XSLT elements that are referenced from within an element.
- **Used by** - Shows the list of all the XSLT elements that reference the current named element.
- **Supersedes** - Shows the list of all the XSLT elements that are superseded the current element.
- **Overriding** - Shows the list of all the XSLT elements that override the current element.
- **Return type** - Shows the return type of the function.
- **Source** - Shows the text stylesheet source for each XSLT element.
- **Import precedence** - Shows the computed import precedence as declared in the XSL transformation specifications.
- **Generate index** - Creates an index with all the XSLT elements included in the documentation.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command-line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the XSLT documentation.

Related Information:

XSLT Stylesheet Component Documentation Support on page 641

Generate XSLT Documentation in HTML Format

When using the XSLT Stylesheet Documentation dialog box to generate XSLT documentation in HTML format, it is presented in a visual diagram style with various sections, hyperlinks, and options.

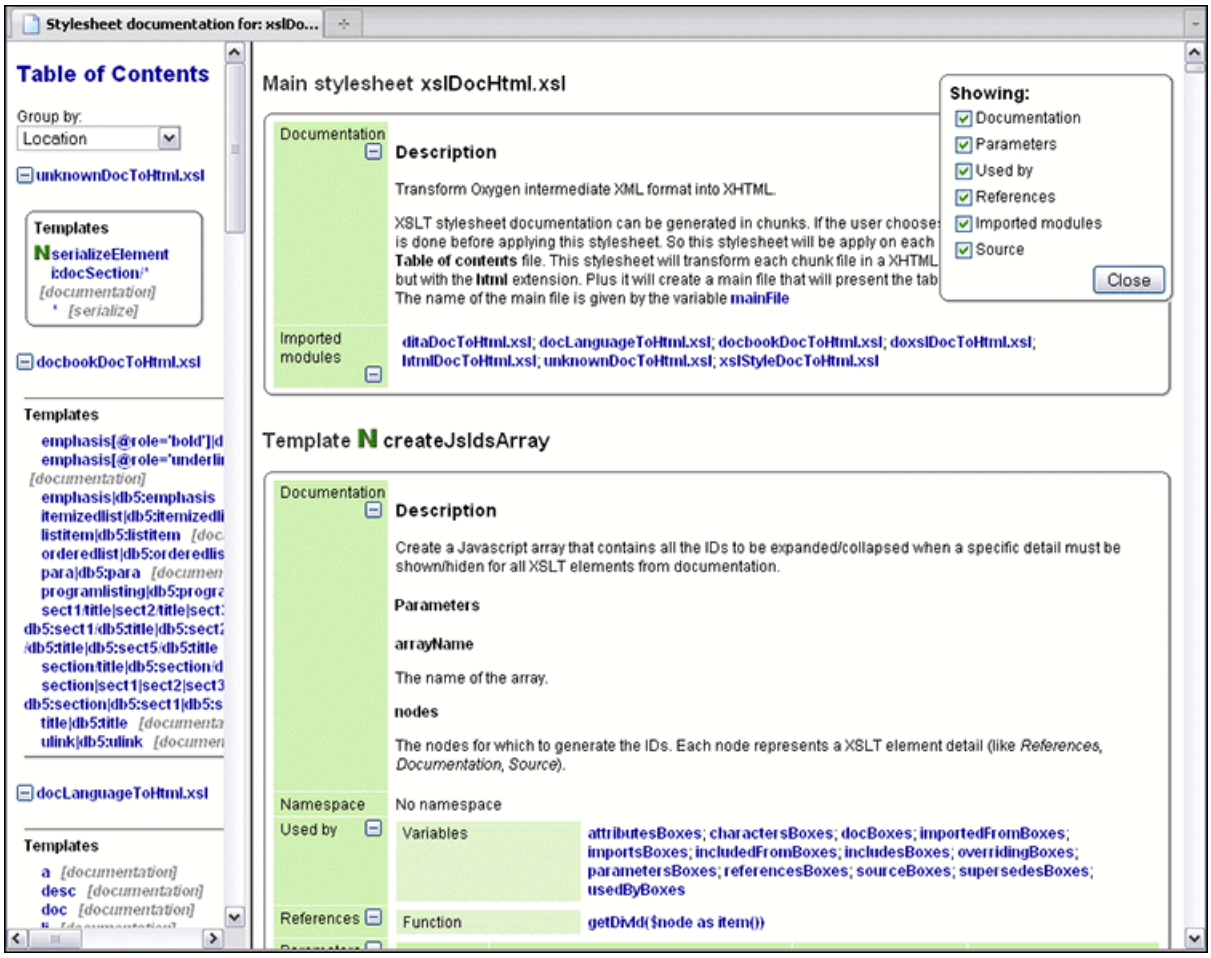


Figure 395: XSLT Stylesheet Documentation Example

The generated documentation includes the following:

- Table of Contents - You can group the contents by namespace, location, or component type. The XSLT elements from each group are sorted alphabetically (named templates are presented first and the `match` ones second).
- Information about main, imported, and included stylesheets. This information consists of:
  - XSLT modules included or imported by the current stylesheet.
  - The XSLT stylesheets where the current stylesheet is imported or included.
  - The stylesheet location.

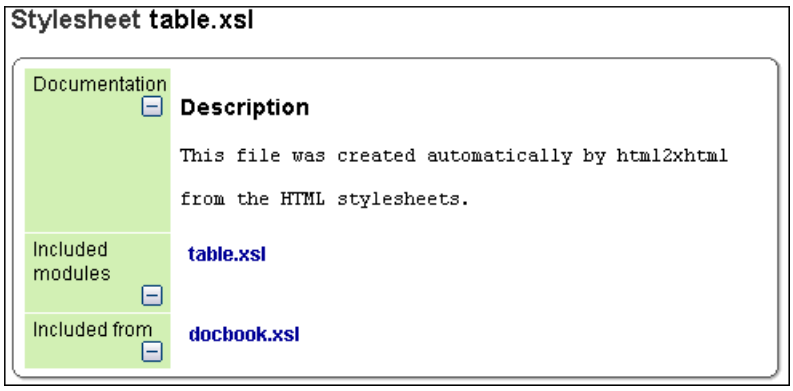


Figure 396: Information About an XSLT Stylesheet

If you choose to split the output into multiple files, the table of contents is displayed in the left frame. The contents are grouped using the same criteria as the split.

After the documentation is generated, you can collapse or expand details for some stylesheet XSLT elements by using the **Showing** options or the **Collapse** or **Expand** buttons.

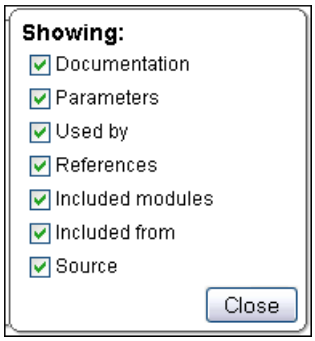


Figure 397: Showing Options

For each element included in the documentation, the section presents the element type followed by the element name (value of the `name` or `match` attribute for match templates).

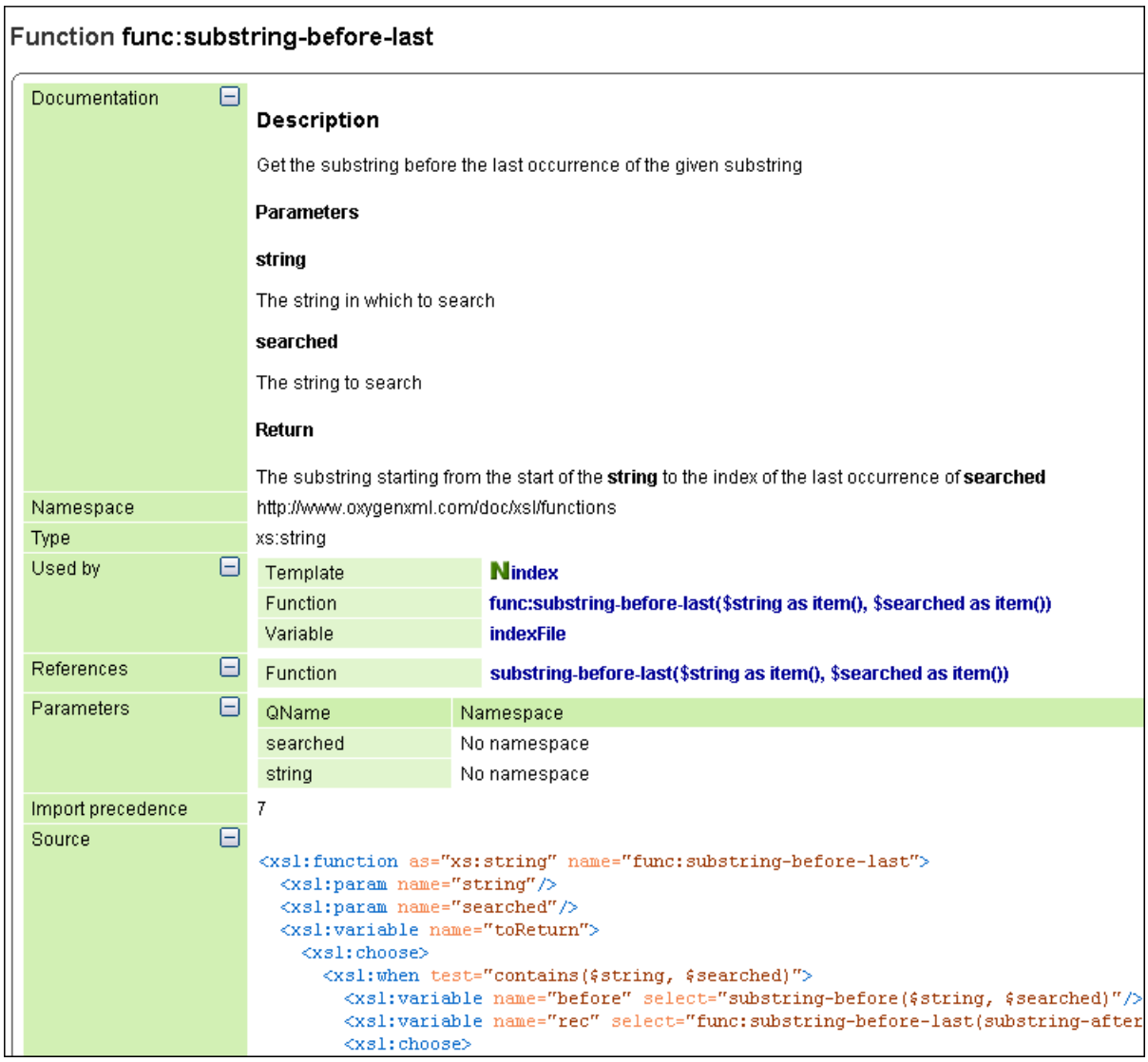


Figure 398: Documentation for an XSLT Element

Generate XSLT Documentation in a Custom Format

XSLT stylesheet documentation can be also generated in a custom format. You must write your custom stylesheet based on the schema `xslDocSchema.xsd` from *`[OXYGEN_INSTALL_DIR]`*`/frameworks/`

`stylesheet_documentation`. You can create a custom format starting from one of the stylesheets used in the predefined HTML, PDF, and DocBook formats. These stylesheets are available in *[OXYGEN_INSTALL_DIR]*`/frameworks/stylesheet_documentation/xsl`.

To generate XSLT documentation in a custom format:

1. Select **Tools** > **Generate Documentation** > **XSLT Stylesheet Documentation** to open the XSLT Stylesheet Documentation dialog box.
2. Select **Custom** for the **Format** and click the **Options** button.
3. In this next dialog box, specify your own stylesheet to transform the intermediary XML generated in the documentation process.
4. You can also choose to copy additional resources into the output folder or choose whether or not to keep the intermediate XML files created during the documentation process.
5. Click **OK** to close this dialog box and then click **Generate**.

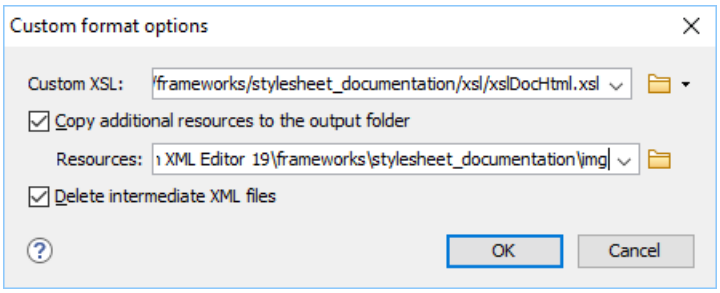


Figure 399: Custom Format Options Dialog Box

Generating XSLT Documentation From the Command-Line Interface

You can export the settings of the **XSLT Stylesheet Documentation** dialog box to an XML file by pressing the **Export settings** button. With the exported settings file, you can generate the same documentation from the command line by running the script `stylesheetDocumentation.bat` (on Windows) / `stylesheetDocumentation.sh` (on OS X / Linux) located in the Oxygen XML Editor plugin installation folder. The script can be integrated in an external batch process launched from the command-line interface.

The command-line parameter of the script is the relative path to the exported XML settings file. The files that are specified with relative paths in the exported XML settings are resolved relative to the script directory.

Example:

```
<serialized>
    <map>
        <entry>
            <String xml:space="preserve">xsd.documentation.options</String>
            <xsdDocumentationOptions>
                <field name="outputFile">
                    <String xml:space="preserve">${cfn}.html</String>
                </field>
                <field name="splitMethod">
                    <Integer xml:space="preserve">1</Integer>
                </field>
                <field name="openOutputInBrowser">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="format">
                    <Integer xml:space="preserve">1</Integer>
                </field>
                <field name="customXSL">
                    <null/>
                </field>
                <field name="deleteXMLFiles">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeIndex">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeGlobalElements">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeGlobalAttributes">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeLocalElements">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
```

```
                <field name="includeLocalAttributes">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeSimpleTypes">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeComplexTypes">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeGroups">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeAttributesGroups">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeRedefines">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="includeReferencedSchemas">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsDiagram">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsNamespace">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsLocation">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsType">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsTypeHierarchy">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsModel">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsChildren">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsInstance">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsUsedby">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsProperties">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsFacets">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsAttributes">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsIdentityConstr">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsEscapeAnn">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsSource">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
                <field name="detailsAnnotations">
                    <Boolean xml:space="preserve">true</Boolean>
                </field>
            </xsdDocumentationOptions>
        </entry>
    </map>
</serialized>
```

Compiling an XSL Stylesheet for Saxon

As of Saxon 9.7, it is possible to export a compiled form of a stylesheet as an XML file (called a *stylesheet export file* or SEF). Oxygen XML Editor plugin includes a simple tool called **Compile XSL Stylesheet for Saxon** (found in the **XML Tools** menu) that does this for you.

Use-Cases for a Stylesheet Export File (SEF)

- **Use Saxon-JS to run transformations in a browser** - A *stylesheet export file* (SEF) is needed if you want to use the Saxon-JS product to run transformations in a browser, as in the following example:

```
<script type="text/javascript" src="SaxonJS/SaxonJS.min.js"></script>
<script>
    window.onload = function() {
```

```
        SaxonJS.transform({
           stylesheetLocation: "books.sef",
           sourceLocation: "books.xml"
           });
    }
</script>
```

- **Use SEF to run transformations in Oxygen XML Editor plugin** - You can also use a *stylesheet export file* (SEF) in Oxygen XML Editor plugin to apply an XSLT transformation over an XML file. This requires **Saxon-EE** or **Saxon-PE** versions of the Saxon product and you must select one of those two versions for the **Target** when you configure the SEF file. When configuring the XSLT transformation, you will specify the SEF file in the **XSL URL** field.

Compiling an SEF File

The **Compile XSL Stylesheet for Saxon** tool can be found in the **XML Tools** menu and it compiles a specified stylesheet as an XML file (*stylesheet export file* with a file extension of `.sef`).

Selecting this tool opens the **Compile XSL Stylesheet for Saxon** dialog box that allows you to configure some options for conversion.

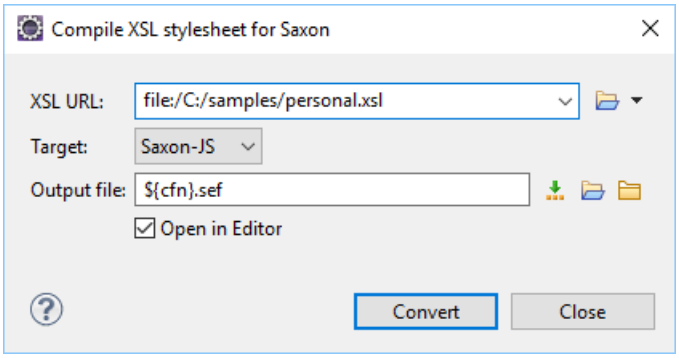


Figure 400: Compile XSL Stylesheet for Saxon Dialog Box

This dialog box includes the following options:

XSL URL

Allows you to select URL of the source XSL stylesheet. You can specify the URL by using the text field, the history drop-down, or the browsing tools in the **Browse** drop-down list.

Target

Allows you to select the type of Saxon product that the export file will be used with. You can choose **Saxon-JS**, **Saxon-EE**, **Saxon-PE**, or **Saxon-HE**.

Output file

You can specify the path where the output file will be saved by entering it in the text field, using the **Insert Editor Variables** button, or using the browsing tool buttons ( ).

Open in Editor

Select this option to open the resulting *stylesheet export file* in the main Oxygen XML Editor plugin editing pane.

Convert

Use this button to generate the *stylesheet export file* according the options selected in this dialog box.

Editing XML Schemas

An XML Schema describes the structure of an XML document and is used to validate XML document instances against it, to check that the XML instances conform to the specified requirements. If an XML instance conforms to the schema then it is said to be valid. Otherwise, it is invalid.

Oxygen XML Editor plugin offers support for both XML Schema 1.0 and 1.1 and you can edit XML Schema files in the following editing modes:

- **Text editing mode** - Allows you to edit XML Schema files in a source editing mode.
- **Grid editing mode** - Displays XML Schema files in a structured spreadsheet-like grid.
- **Design editing mode** - Visual schema designer that helps you understand the structure and develop complex schemas.
- **Author editing mode** - The visual **Author** mode is also available for XML Schema, allowing you to visually edit the schema annotations. It presents a polished and compact view of the XML Schema, with support for links on imported/included schemas.

For information about applying and detecting schemas, see Associating a Schema to XML Documents on page 579.

For more information about editing XML Schemas, see our video demonstration:

https://www.youtube.com/embed/vz1eIZELQgc

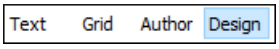
Related Information:

Associating a Schema to XML Documents on page 579

Design Editing Mode (XML Schema Diagram Editor)

XML Schemas allow document designers to specify the allowed structure and content of an XML document and to check if an XML document is valid.

Oxygen XML Editor plugin provides a simple and expressive XML Schema diagram editor (**Design** mode) for editing XML Schemas. The schema diagram helps both the content authors who want to understand a schema and schema designers who develop complex schemas.

To switch to this mode, select **Design** at the bottom of the editing area. 

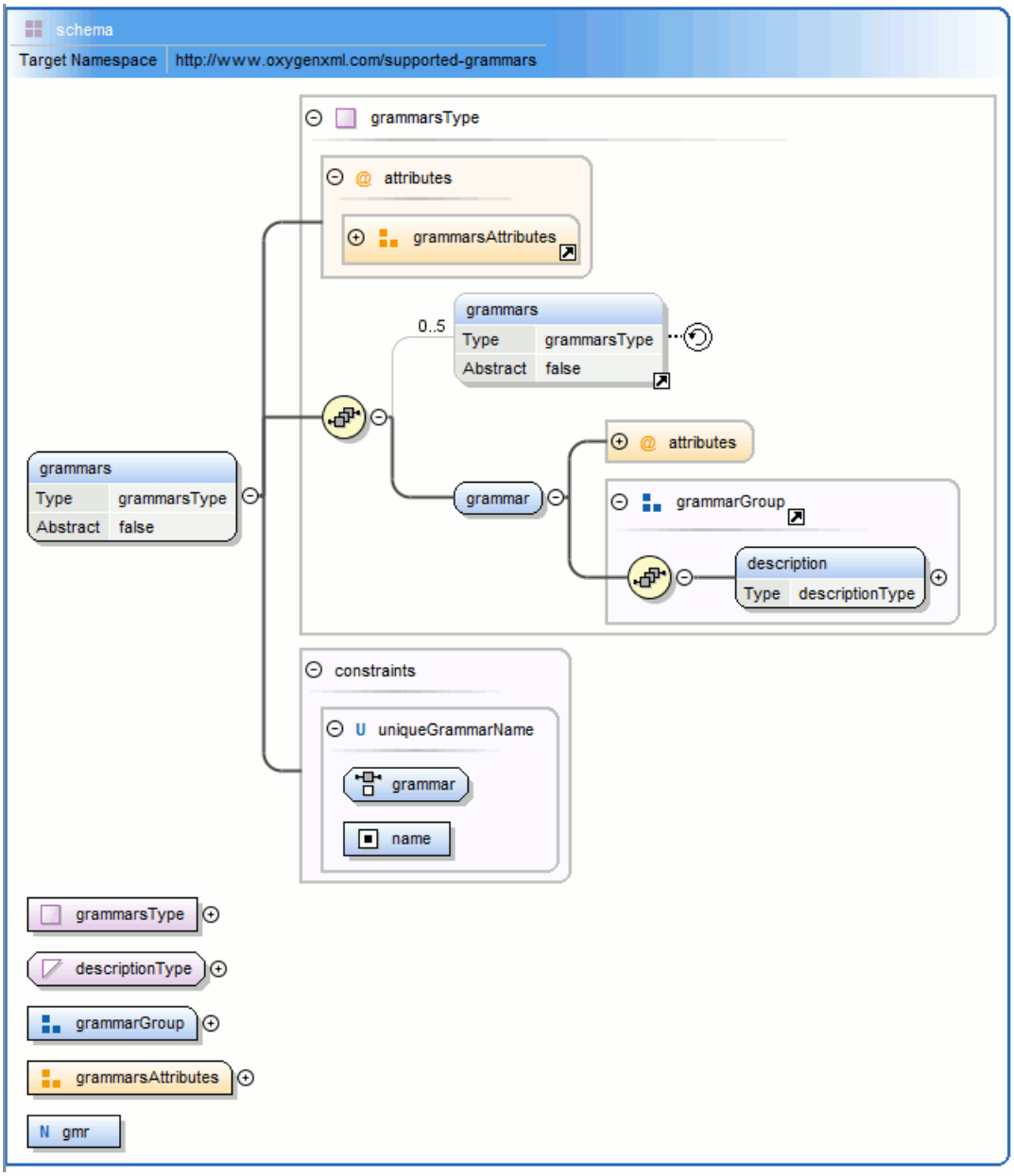


Figure 401: XML Schema Diagram

For more information about designing XML Schemas, watch our video demonstration:

https://www.youtube.com/embed/vz1eIZELQgc

Navigation in the XML Schema Design Mode

The following editing and navigation features work for all types of schema components in the XML Schema **Design** mode:

- Move/reference components in the diagram using drag-and-drop actions.
- Select consecutive components on the diagram (components from the same level) using the *Shift* key. You can also make discontinuous selections in the schema diagram using the **Ctrl (Meta on Mac OS)** key. To deselect one of the components, use **Ctrl + Single-Click (Command + Single-Click on OS X)**.
- Use the arrow keys to navigate the diagram vertically and horizontally.
- Use *Home*/*End* keys to jump to the first/last component from the same level. Use **Ctrl + Home (Command + Home on OS X)** key combination to go to the diagram root and **Ctrl + End (Command + End on OS X)** to go to the last child of the selected component.

- You can easily go back to a previously visited component while moving from left to right. The path will be preserved only if you use the left arrow key or right arrow key. For example, if the current selection is on the second attribute from an attribute group and you press the left arrow key to jump to the attribute group, when you press the right arrow key, then the selection will be moved to the second attribute.
- Go back and forward between components viewed or edited in the diagram by selecting them in the **Outline** view:
  - **Back** (go to previous schema component).
  - **Forward** (go to next schema component).
  - **Go to Last Modification** (go to last modified schema component).
- Copy, reference, or move global components, attributes, and identity constraints to another position and from one schema to another using the **Cut/Copy** and **Paste/Paste as Reference** actions.
- Go to the definition of an element or attribute with the **Go to Definition** action.
- You can expand and see the contents of the imports/includes/redefines in the diagram. In order to edit components from other schemas the schema for each component will be opened as a separate file in Oxygen XML Editor plugin.

  Tip: If an XML Schema referenced by the current opened schema was modified on disk, the change will be detected and you will be asked to refresh the current schema contents.
- Recursive references are marked with a *recurse symbol* (). Click this symbol to navigate between the element declaration and its reference.

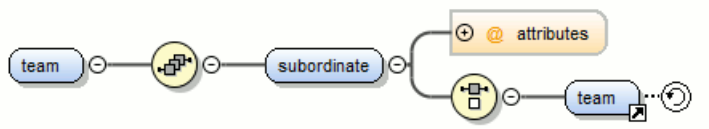


Figure 402: Recursive Reference

Schema Editing Actions

You can edit an XML schema using drag and drop operations or contextual menu actions.

Drag and drop is the easiest way to move the existing components to other locations in an XML schema. For example, you can quickly insert an element reference in the diagram with a drag and drop from the **Outline** view to a compositor in the diagram. Also, the components order in an `xs:sequence` can be easily changed using drag and drop.

If this property has not been set, you can easily set the attribute/element type by dragging over it a simple type or complex type from the diagram. If the type property for a simple type or complex type is not already set, you can set it by dragging over it a simple or complex type.

Depending on the drop area, various actions are available:

- **move** - Context dependent, the selected component is moved to the destination.
- **reference** - Context dependent, the selected component is referenced from the parent.
- **copy** - If **(Ctrl (Meta on Mac OS))** key is pressed, a copy of the selected component is inserted to the destination.

Visual clues about the operation type are indicated by the mouse pointer shape:

- - When moving a component.
- - When referencing a component.
- - When copying a component.

You can edit some schema components directly in the diagram. For these components, you can edit the name and the additional properties presented in the diagram by double clicking the value you want to edit. If you want

to edit the name of a selected component, you can also press **(Enter)**. The list of properties that can be displayed for each component can be customized in the Preferences.

When editing references, you can choose from a list of available components. Components from an imported schema for which the target namespace does not have an associated prefix is displayed in the list as `componentName#targetNamespace`. If the reference is from a target namespace that was not yet mapped, you are prompted to add prefix mappings for the inserted component namespace in the current edited schema.

You can also change the compositor by double-clicking it and choose the compositor you want from the proposals list.

There are some components that cannot be edited directly in the diagram: imports, includes, redefines. The editing action can be performed if you double-click or press **(Enter)** on an import/include/redefine component. An edit dialog box is displayed, allowing you to customize the directives.

Related Information:

Searching and Refactoring Actions in XML Schemas on page 699
XML Schema Component Dependencies View on page 697
XML Schema Resource Hierarchy / Dependencies View on page 695
Generating Sample XML Files on page 701
Schema Design Preferences on page 83

Contextual Menu Actions in the Design Mode

The contextual menu of the **Design** mode includes the following actions:

Go to Definition (Ctrl + Shift + Enter)

Shows the definition for the current selected component. For references, this action is available by clicking the arrow displayed in its bottom right corner.

Open Schema (Ctrl + Shift + Enter)

Opens the selected schema. This action is available for `xsd:import`, `xsd:include` and `xsd:redefine` elements. If the file you try to open does not exist, a warning message is displayed and you have the possibility to create the file.

Edit Attributes (Alt + Shift + Enter)

Allows you to edit the attributes of the selected component in a small in-place editor that presents the same attributes as in the **Attributes** view and the **Facets** view. The actions that can be performed on attributes in this dialog box are the same actions presented in the two views.

Append child

Offers a list of valid components, depending on the context, and appends your selection as a child of the currently selected component. You can set a name for a named component after it has been added in the diagram.

Insert before

Offers a list of valid components, depending on the context, and inserts your selection before the selected component, as a sibling. You can set a name for a named component after it has been added in the diagram.

Insert after

Offers a list of valid components, depending on the context, and inserts your selection after the selected component, as a sibling. You can set a name for a named component after it has been added in the diagram.

New global

Inserts a global component in the schema diagram. This action does not depend on the current context. If you choose to insert an import you have to specify the URL of the imported file, the target namespace and the import ID. The same information, excluding the target namespace, is requested for an `xsd:include` or `xsd:redefine` element.

Note: If the imported file has declared a target namespace, the field **Namespace** is completed automatically.

Edit Schema Namespaces

When performed on the schema root, it allows you to edit the schema target namespace and namespace mappings. You can also invoke the action by double-clicking the target namespace property from **Attributes** view for the schema or by double-clicking the schema component.

Edit Annotations

Allows you to edit the annotation for the selected schema component in the **Edit Annotations** dialog box. You can perform the following operations in the dialog box:

- **Edit all `appinfo/documentation` items for a specific annotation** - All `appinfo/documentation` items for a specific annotation are presented in a table and can be easily edited. Information about an annotation item includes: type (documentation/appinfo), content, source (optional, specify the source of the `documentation/appinfo` element) and `xml:lang`. The content of a `documentation/appinfo` item can be edited in the **Content** area below the table.
- **Insert/Insert before/Remove documentation/appinfo.** The **Add** button allows you to insert a new annotation item (`documentation/appinfo`). You can add a new item before the item selected in table by pressing the **Insert Before** button. Also, you can delete the selected item using the **Remove** button.
- **Move items up/down** - to do this use the **Move up** and **Move down** buttons.
- **Insert/Insert before/Remove annotation** - Available for components that allow multiple annotations such as schemas or redefines.
- **Specify an ID for the component annotation**. An optional identifier for the annotation.

Annotations are rendered by default under the graphical representation of the component. When you have a reference to a component with annotations, these annotations are presented in the diagram also below the reference component. The **Edit Annotations** action invoked from the contextual menu edit the annotations for the reference. If the reference component does not have annotations, you can edit the annotations of the referenced component by double-clicking the annotations area. Otherwise, you can edit the referenced component annotations only if you go to the definition of the component.

Note: For imported/included components that do not belong to the currently edited schema, the **Edit Annotations** dialog box presents the annotation as read-only. To edit its annotation, open the schema where the component is defined.

Extract Global Element

Action that is available for local elements. A local element is made global and is replaced with a reference to the global element. The local element properties that are also valid for the global element declaration are kept.

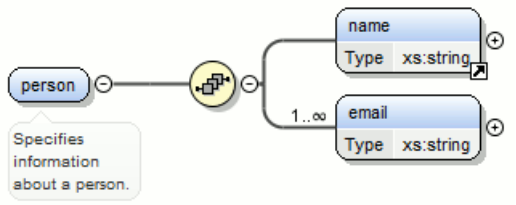


Figure 403: Extracting a Global Element

If you use the **Extract Global Element** action on a `name` element , the result is:

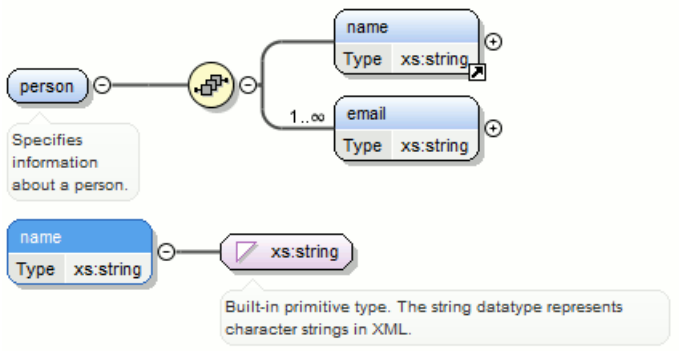


Figure 404: Extracting a Global Element on a `name` Element

Extract Global Attribute

Action available for local attributes. A local attribute is made global and replaced with a reference to the global attribute. The properties of local attribute that are also valid in the global attribute declaration are kept.

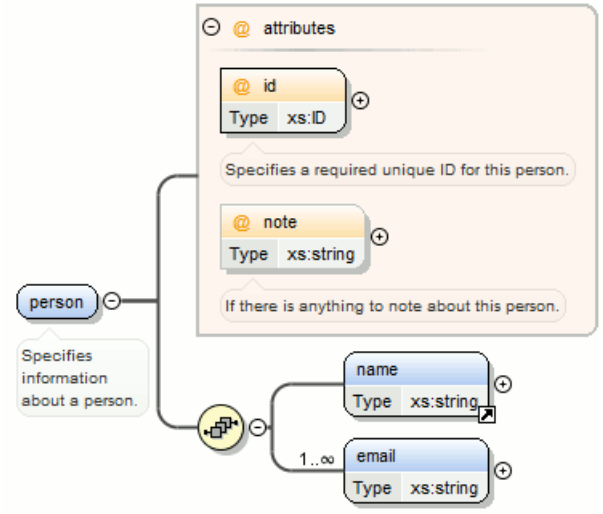


Figure 405: Extracting a Global Attribute

If you use the **Extract Global Attribute** action on a `note` attribute, the result is:

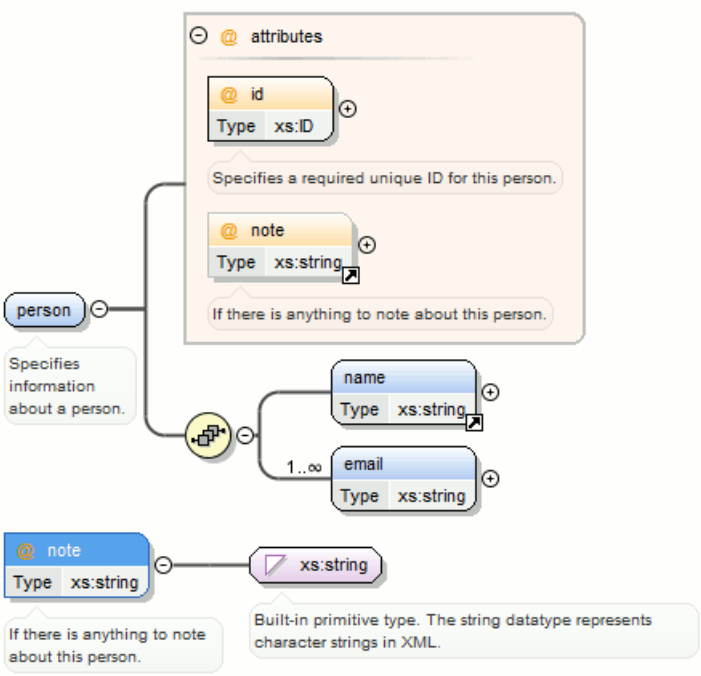
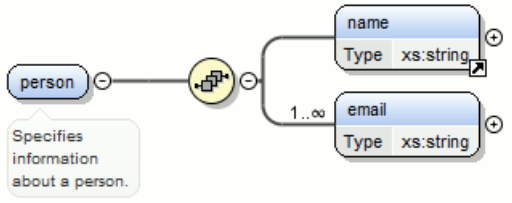


Figure 406: Extracting a Global Attribute on a `note` Attribute

Extract Global Group

Action available for compositors (sequence, choice, all). This action extracts a global group and makes a reference to it. The action is available only if the parent of the compositor is not a group.



If you use the **Extract Global Group** action on the `sequence` element, the **Extract Global Component** dialog box is displayed and you can choose a name for the group. If you type `personGroup`, the result is:

Figure 407: Extracting a Global Group

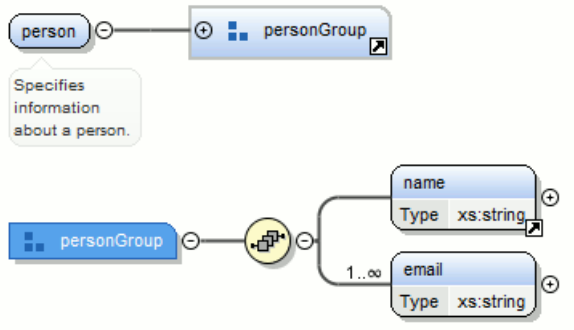


Figure 408: Extracting a Global Gropu on a `sequence` Element

Extract Global Type

Action used to extract an anonymous simple type or an anonymous complex type as global. For anonymous complex types, the action is available on the parent element.

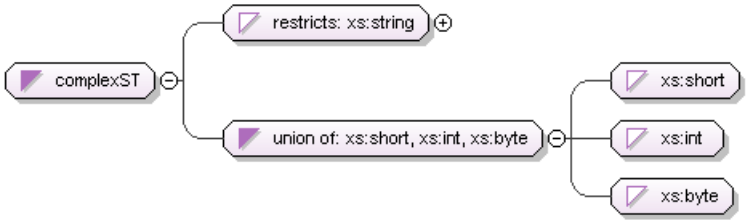


Figure 409: Extracting a Global Simple Type

If you use the action on the `union` component and choose `numericST` for the new global simple type name, the result is:

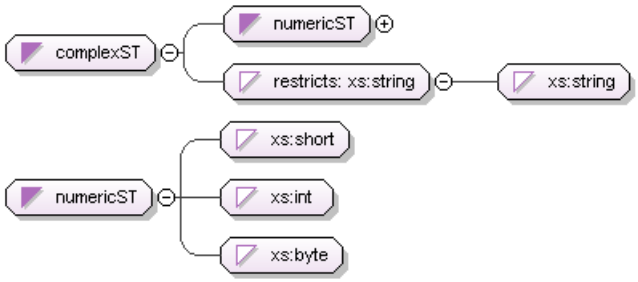


Figure 410: Extracting a Global Simple Type on a `union` Component

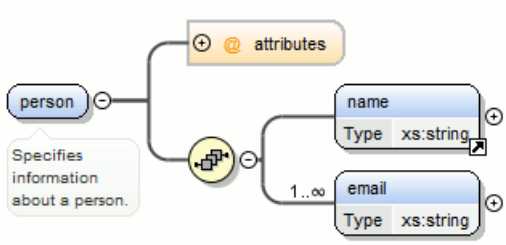


Figure 411: Extracting a Global Complex Type

If you use the action on a `person` element and choose `person_type` for the new complex type name, the result is:

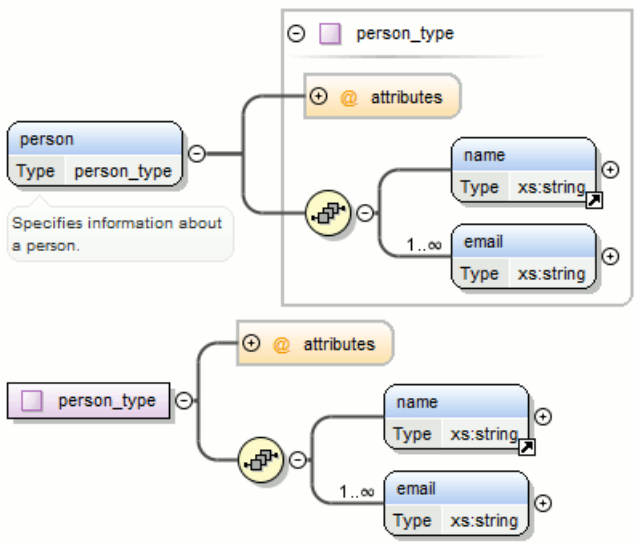


Figure 412: Extracting a Global Complex Type on a `person` Element

Rename Component in

Rename the selected component.

Cut Ctrl + X (Command + X on OS X)

Cut the selected component(s).

Copy Ctrl + C (Command + C on OS X)

Copy the selected component(s).

Copy XPath

This action copies an XPath expression that identifies the selected element or attribute in an instance XML document of the edited schema and places it in the clipboard.

Paste Ctrl + V (Command + V on OS X)

Paste the component(s) from the clipboard as children of the selected component.

Paste as Reference

Create references to the copied component(s). If not possible a warning message is displayed.

Remove (Delete)

Remove the selected component(s).

Override component

Copies the overridden component in the current XML Schema. This option is available for `xs:override` components.

Redefine component

The referenced component is added in the current XML Schema. This option is available for `xs:redefine` components.

Optional

Can be performed on element/attribute/group references, local attributes, elements, compositors, and element wildcards. The `minOccurs` property is set to 0 and the `use` property for attributes is set to `optional`.

Unbounded

Can be performed on element/attribute/group references, local attributes, elements, compositors, and element wildcards. The `maxOccurs` property is set to `unbounded` and the `use` property for attributes is set to `required`.

Search

Can be performed on local elements or attributes. This action makes a reference to a global element or attribute.

Search References

Searches all references of the item found at current cursor position in the defined scope if any.

Search References in

Searches all references of the item found at current cursor position in the specified scope.

Search Occurrences in File

Searches all occurrences of the item found at current cursor position in the current file.

Component Dependencies

Opens the **Component Dependencies** view that allows you to see the dependencies for the current selected component.

Resource Hierarchy

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the hierarchy for the current selected resource.

Flatten Schema

Recursively adds the components of included Schema files to the main one. It also flattens every imported XML Schema from the hierarchy.

Resource Dependencies

Allows you to see the dependencies for the current selected resource.

Expand All

Recursively expands all sub-components of the selected component.

Collapse All

Recursively collapses all sub-components of the selected component.

Save as Image

Save the diagram as image, in JPEG, BMP, SVG or PNG format.

Generate Sample XML Files

Generate XML files using the current opened schema. The selected component is the XML document root. See more in the Generate Sample XML Files section.

Options

Show the Schema preferences panel.

XML Schema Components

A schema diagram contains a series of interconnected components. To quickly identify the relation between two connected components, the connection is represented as:

- A thick line to identify a connection with a required component (in the following image, `family` is a required element).

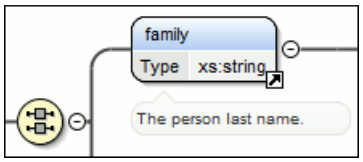


Figure 413: Example: Required Component

- A thin line to identify a connection with an optional component (in the following image, `email` is an optional element).

Figure 414: Example: Optional Component

The following topics explain in detail all available components and their symbols as they appear in an XML schema diagram.

xs:schema

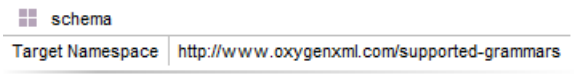


Figure 415: The *xs:schema* Component

Defines the root element of a schema. A schema document contains representations for a collection of schema components, such as type definitions and element declarations, that have a common target namespace. See more info at http://www.w3.org/TR/xmlschema11-1/#element-schema.

By default, it displays the *targetNamespace* property when rendered.

Table 38: *xs:schema* Properties

Property Name	Description	Possible Values
Target Namespace	The schema target namespace.	Any URI
Element Form Default	Determining whether or not local element declarations will be namespace-qualified by default.	qualified, unqualified, [Empty]. Default value is unqualified.
Attribute Form Default	Determining whether or not local attribute declarations will be namespace-qualified by default.	qualified, unqualified, [Empty]. Default value is unqualified.
Block Default	Default value of the *block* attribute of *xs:element* and *xs:complexType*.	#all, extension, restriction, substitution, restriction extension, restriction substitution, extension substitution, restriction extension substitution, [Empty].
Final Default	Default value of the *final* attribute of *xs:element* and *xs:complexType*.	#all, restriction, extension, restriction extension, [Empty].
Default Attributes	Specifies a set of attributes that apply to every complex Type in a schema document.	Any.
Xpath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
Version	Schema version	Any token.
ID	The schema ID	Any ID.
Component	The edited component name.	Not editable property.
SystemID	The schema system ID	Not editable property.

xs:element

Figure 416: The *xs:element* Component

Defines an element. An element declaration is an association of a name with a type definition, either simple or complex, an (optional) default value and a (possibly empty) set of identity-constraint definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-element.

An element by default displays the following properties when rendered in the diagram: *default*, *fixed*, *abstract* and *type*. When referenced or declared locally, the element graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the element are drawn using dotted lines if the element is optional.

Table 39: *xs:element* Properties

Property Name	Description	Possible Values	Mentions
Name	The element name. Always required.	Any NCName for global or local elements, any *QName* for element references.	If missing, will be displayed as '[element]' in diagram.

Property Name	Description	Possible Values	Mentions
Is Reference	When set, the local element is a reference to a global element.	true/false	Appears only for local elements.
Type	The element type.	All declared or built-in types. In addition, the following anonymous types are available: [ST-restriction], [ST-union], [ST-list], [CT-anonymous], [CT-extension SC], [CT-restriction SC], [CT-restriction CC], [CT-extension CC].	For all elements. For references, the value is set in the referenced element.
Base Type	The extended/restricted base type.	All declared or built-in types	For elements with complex type, with simple or complex content.
Mixed	Defines if the complex type content model will be mixed.	true/false	For elements with complex type.
Content	The content of the complex type.	simple/complex	For elements with complex type that extends/restricts a base type. It is automatically detected.
Content Mixed	Defines if the complex content model will be mixed.	true/false	For elements with complex type that has a complex content.
Default	Default value of the element. A default value is automatically assigned to the element when no other value is specified.	Any string	The fixed and default attributes are mutually exclusive.
Fixed	A simple content element may be fixed to a specific value using this attribute. A fixed value is also automatically assigned to the element and you cannot specify another value.	Any string	The fixed and default attributes are mutually exclusive.
Min Occurs	Minimum number of occurrences of the element.	A numeric positive value. Default value is 1	Only for references/local elements
Max Occurs	Maximum number of occurrences of the element.	A numeric positive value. Default value is 1	Only for references/local elements
Substitution Group	Qualified name of the head of the substitution group that this element belongs to.	All declared elements. For XML Schema 1.1 this property supports multiple values.	For global and reference elements

Property Name	Description	Possible Values	Mentions
Abstract	Controls whether or not the element may be used directly in instance XML documents. When set to true, the element may still be used to define content models, but it must be substituted through a substitution group in the instance document.	true/false	For global elements and element references
Form	Defines if the element is "qualified" (belongs to the target namespace) or "unqualified" (doesn't belong to any namespace).	unqualified/qualified	Only for local elements
Nillable	When this attribute is set to true, the element can be declared as nil using an *xsi:nil* attribute in the instance documents.	true/false	For global elements and element references
Target Namespace	Specifies the target namespace for local element and attribute declarations. The namespace URI may be different from the schema target namespace. This property is available for local elements only.	Not editable property.	For all elements.
Block	Controls if the element can be subject to a type or substitution group substitution. '#all' blocks any substitution, 'substitution' blocks any substitution through substitution groups and 'extension'/'restriction' block any substitution (both through *xsi:type* and substitution groups) by elements or types, derived respectively by extension or restriction from the type of the element. Its default value is defined by the *blockDefault* attribute of the parent *xs:schema*.	#all, restriction, extension,substitution, extension restriction, extension substitution, restriction substitution, restriction extension substitution	For global elements and element references

Property Name	Description	Possible Values	Mentions
Final	Controls whether the element can be used as the head of a substitution group for elements whose types are derived by extension or restriction from the type of the element. Its default value is defined by the *finalDefault* attribute of the parent *xs:schema*.	#all, restriction, extension, restriction extension, [Empty]	For global elements and element references
ID	The component ID.	Any ID	For all elements.
Component	The edited component name.	Not editable property.	For all elements.
Namespace	The component namespace.	Not editable property.	For all elements.
System ID	The component system ID.	Not editable property.	For all elements.

xs:attribute

Figure 417: The *xs:attribute* Component

Defines an attribute. See more info at http://www.w3.org/TR/xmlschema11-1/#element-attribute.

An attribute by default displays the following properties when rendered in the diagram: *default*, *fixed*, *use* and *type*. Connectors to the attribute are drawn using dotted lines if the attribute use is optional. The attribute name is stroked out if prohibited.

Table 40: *xs:attribute* Properties

Property Name	Description	Possible Value	Mentions
Name	Attribute name. Always required.	Any NCName for global/ local attributes, all declared attributes' *QName* for references.	For all local or global attributes. If missing, will be displayed as '[attribute]' in the diagram.
Is Reference	When set, the local attribute is a reference.	true/false	For local attributes.
Type	Qualified name of a simple type.	All global simple types and built-in simple types. In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for creating anonymous simple types more easily.	For all attributes. For references, the type is set to the referenced attribute.

Property Name	Description	Possible Value	Mentions
Default	Default value. When specified, an attribute is added by the schema processor (if it is missing from the instance XML document) and it is given this value. The default and fixed attributes are mutually exclusive.	Any string	For all local or global attributes. For references the value is from the referenced attribute.
Fixed	When specified, the value of the attribute is fixed and must be equal to this value. The default and fixed attributes are mutually exclusive.	Any string	For all local or global attributes. For references the value is from the referenced attribute.
Use	Possible usage of the attribute. Marking an attribute "prohibited" is useful to exclude attributes during derivations by restriction.	optional, required, prohibited	For local attributes
Form	Specifies whether or not the attribute is qualified (must have a namespace prefix in the instance XML document). The default value for this attribute is specified by the *attributeFormDefault* attribute of the *xs:schema* document element.	unqualified/qualified	For local attributes.
Inheritable	Specifies if the attribute is inheritable. Inheritable attributes can be used by <alternative> element on descendant elements.	true/false	For all local or global attributes. The default value is false. This property is available for XML Schema 1.1.
Target Namespace	Specifies the target namespace for local attribute declarations. The namespace URI may be different from the schema target namespace.	Any URI	Setting a target namespace for local attribute is useful only when restricts attributes of a complex type that is declared in other schema with a different target namespace. This property is available for XML Schema 1.1.
ID	The component ID.	Any ID	For all attributes.
Component	The edited component name.	Not editable property.	For all attributes.
Namespace	The component namespace.	Not editable property.	For all attributes.

Property Name	Description	Possible Value	Mentions
System ID	The component system ID.	Not editable property.	For all attributes.

xs:attributeGroup

Figure 418: The *xs:attributeGroup* Component

Defines an attribute group to be used in complex type definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-attributeGroup.

Table 41: *xs:attributeGroup* Properties

Property Name	Description	Possible Values	Mentions
Name	Attribute group name. Always required.	Any NCName for global attribute groups, all declared attribute groups for reference.	For all global or referenced attribute groups. If missing, will be displayed as '[attributeGroup]' in diagram.
ID	The component ID.	Any ID	For all attribute groups.
Component	The edited component name.	Not editable property.	For all attribute groups.
Namespace	The component namespace.	Not editable property.	For all attribute groups.
System ID	The component system ID.	Not editable property.	For all attribute groups.

xs:complexType

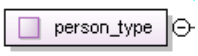


Figure 419: The *xs:complexType* Component

Defines a top level complex type. Complex Type Definitions provide for: See more data at http://www.w3.org/TR/xmlschema11-1/#element-complexType.

- Constraining element information items by providing Attribute Declarations governing the appearance and content of attributes.
- Constraining element information item children to be empty, or to conform to a specified element-only or mixed content model, or else constraining the character information item children to conform to a specified simple type definition.
- Using the mechanisms of Type Definition Hierarchy to derive a complex type from another simple or complex type.
- Specifying post-schema-validation infoset contributions for elements.
- Limiting the ability to derive additional types from a given complex type.
- Controlling the permission to substitute, in an instance, elements of a derived type for elements declared in a content model to be of a given complex type.

Tip: A complex type that is a base type to another type will be rendered with yellow background.

Table 42: *xs:complexType* Properties

Property Name	Description	Possible Values	Mentions
Name	The name of the complex type. Always required.	Any NCName	Only for global complex types. If missing, will be displayed as '[complexType]' in diagram.
Base Type Definition	The name of the extended/restricted types.	Any from the declared simple or complex types.	For complex types with simple or complex content.
Derivation Method	The derivation method.	restriction/ extension	Only when base type is set. If the base type is a simple type, the derivation method is always extension.
Content	The content of the complex type.	simple/ complex	For complex types that extend/restrict a base type. It is automatically detected.
Content Mixed	Specifies if the complex content model will be mixed.	true/false	For complex contents.
Mixed	Specifies if the complex type content model will be mixed.	true/false	For global and anonymous complex types.
Abstract	When set to *true*, this complex type cannot be used directly in the instance documents and needs to be substituted using an *xsi:type* attribute.	true/false	For global and anonymous complex types.
Block	Controls if a substitution (either through a *xsi:type* or substitution groups) can be performed for a complex type, which is an extension or a restriction of the current complex type. This attribute can only block such substitutions (it cannot "unblock" them), which can also be blocked in the element definition. The default value is defined by the *blockDefault* attribute of *xs:schema*.	all, extension, restriction, extension restriction, [Empty]	For global complex types.
Final	Controls whether the complex type can be further derived by extension or restriction to create new complex types.	all, extension, restriction, extension restriction, [Empty]	For global complex types.

Property Name	Description	Possible Values	Mentions
Default Attributes Apply	The *schema* element can carry a *defaultAttributes* attribute, which identifies an attribute group. Each *complexType* defined in the schema document then automatically includes that attribute group, unless this is overridden by the *defaultAttributesApply* attribute on the *complexType* element.	true/false	This property is available only for XML Schema 1.1.
ID	The component ID.	Any ID	For all complex types.
Component	The edited component name.	Not editable property.	For all complex types.
Namespace	The component namespace.	Not editable property.	For all complex types.
System ID	The component system ID.	Not editable property.	For all complex types.

xs:simpleType

Figure 420: The *xs:simpleType* Component

Defines a simple type. A simple type definition is a set of constraints on strings and information about the values they encode, applicable to the normalized value of an attribute information item or of an element information item with no element children. Informally, it applies to the values of attributes and the text-only content of elements. See more info at http://www.w3.org/TR/xmlschema11-1/#element-simpleType.

Tip: A simple type that is a base type to another type will be rendered with yellow background.

Table 43: *xs:simpleType* Properties

Name	Description	Possible Values	Scope
Name	Simple type name. Always required.	Any NCName.	Only for global simple types. If missing, will be displayed as '[simpleType]' in diagram.
Derivation	The simple type category: restriction, list or union.	restriction,list or union	For all simple types.
Base Type	A simple type definition component. Required if derivation method is set to restriction.	All global simple types and built-in simple types. In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to restriction.

Name	Description	Possible Values	Scope
Item Type	A simple type definition component. Required if derivation method is set to list.	All global simple types and built-in simple types(from schema for schema). In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to list. Derivation by list is the process of transforming a simple datatype (named the item type) into a whitespace-separated list of values from this datatype. The item type can be defined inline by adding a simpleType definition as a child element of the list element, or by reference, using the itemType attribute (it is an error to use both).
Member Types	Category for grouping union members.	Not editable property.	For global and anonymous simple types with the derivation method set to union.
Member	A simple type definition component. Required if derivation method is set to union.	All global simple types and built-in simple types(from schema for schema). In addition another 3 proposals are present: [anonymous restriction], [anonymous list], [anonymous union] for easily create anonymous simple types.	For global and anonymous simple types with the derivation method set to union. Deriving a simple datatype by union merges the lexical spaces of several simple datatypes (called member types) to create a new simple datatype. The member types can be defined either by reference (through the memberTypes attribute) or embedded as simple datatype local definitions in the xs:union element. Both styles can be mixed.
Final	Blocks any further derivations of this datatype (by list, union, derivation or all).	#all, list, restriction, union, list restriction, list union, restriction union. In addition, [Empty] proposal is present for set empty string as value.	Only for global simple types.
ID	The component ID.	Any ID.	For all simple types
Component	The name of the edited component.	Not editable property.	Only for global and local simple types
Namespace	The component namespace.	Not editable property.	For global simple types.

Name	Description	Possible Values	Scope
System ID	The component system ID.	Not editable property.	Not present for built-in simple types..

xs:alternative

The *type alternatives* mechanism allows you to specify type substitutions on an element declaration.

Note: *xs:alternative* is available for XML Schema 1.1.

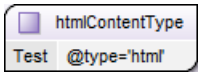


Figure 421: The *xs:alternative* Component

Table 44: *xs:alternative* Properties

Name	Description	Possible Values
Type	Specifies type substitutions for an element, depending on the value of the attributes.	All declared or built-in types. In addition, the following anonymous types are available: [ST-restriction], [ST-union], [ST-list], [CT-anonymous], [CT-extension SC], [CT-restriction SC], [CT-restriction CC], [CT-extension CC].
Test	Specifies an XPath expression. If the XPath condition is valid, the specified type is selected as the element type. The expressions allowed are limited to a subset of XPath 2.0. Only the attributes of the current element and inheritable attributes from ancestor elements are accessible in the XPath expression. When you edit this property, the content completion list of proposals offers XPath expressions.	An XPath expression.
XPath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
ID	Specifies the component ID.	Any ID.
Component	Specifies the type of XML schema component.	Not editable property.
System ID	Points to the document location of the schema.	Not editable property.

xs:group

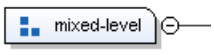


Figure 422: The *xs:group* Component

Defines a group of elements to be used in complex type definitions. See more info at http://www.w3.org/TR/xmlschema11-1/#element-group.

When referenced, the graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the group are drawn using dotted lines if the group is optional.

Table 45: *xs:group* Properties

Property Name	Description	Possible Values	Mentions
Name	The group name. Always required.	Any NCName for global groups, all declared groups for reference.	If missing, will be displayed as '[group]' in diagram.
Min Occurs	Minimum number of occurrences of the group.	A numeric positive value. Default value is 1.	Appears only for reference groups.
Max Occurs	Maximum number of occurrences of the group.	A numeric positive value. Default value is 1.	Appears only for reference groups.
ID	The component ID.	Any ID	For all groups.
Component	The edited component name.	Not editable property.	For all groups.
Namespace	The component namespace.	Not editable property	For all groups.
System ID	The component system ID.	Not editable property.	For all groups.

xs:include

Figure 423: The *xs:include* Component

Adds multiple schemas with the same target namespace to a document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-include.

Table 46: *xs:include* properties

Property Name	Description	Possible Values
Schema Location	Included schema location.	Any URI
ID	Include ID.	Any ID
Component	The component name.	Not editable property.

xs:import

Figure 424: The *xs:import* Component

Adds multiple schemas with a different target namespace to a document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-import.

Table 47: *xs:import* Properties

Property Name	Description	Possible Values
Schema Location	Imported schema location	Any URI
Namespace	Imported schema namespace	Any URI

Property Name	Description	Possible Values
ID	Import ID	Any ID
Component	The component name	Not editable property.

xs:redefine

Figure 425: The *xs:redefine* Component

Redefines simple and complex types, groups, and attribute groups from an external schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-redefine.

Table 48: *xs:redefine* Properties

Property Name	Description	Possible Values
Schema Location	Redefine schema location.	Any URI
ID	Redefine ID	Any ID
Component	The component name.	Not editable property.

xs:override

Figure 426: The *xs:override* Component

The override construct allows replacements of old components with new ones without any constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-override.

Table 49: *xs:override* Properties

Property Name	Description	Possible Values
Schema Location	Redefine schema location.	Any URI
ID	Redefine ID	Any ID

xs:notation

Figure 427: The *xs:notation* Component

Describes the format of non-XML data within an XML document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-notation.

Table 50: *xs:notation* Properties

Property Name	Description	Possible values	Mentions
Name	The notation name. Always required.	Any NCName.	If missing, will be displayed as '[notation]' in diagram.
System Identifier	The notation system identifier.	Any URI	Required if public identifier is absent (otherwise, optional).

Property Name	Description	Possible values	Mentions
Public Identifier	The notation public identifier.	A Public ID value	Required if system identifier is absent (otherwise, optional).
ID	The component ID.	Any ID	For all notations.
Component	The edited component name.	Not editable property.	For all notations.
Namespace	The component namespace.	Not editable property.	For all notations.
System ID	The component system ID.	Not editable property.	For all notations.

xs:sequence / xs:choice / xs:all

Figure 428: *xs:sequence*

xs:sequence specifies that the child elements must appear in a sequence. Each child element can occur from 0 to any number of times. See more info at http://www.w3.org/TR/xmlschema11-1/#element-sequence.

Figure 429: *xs:choice*

xs:choice allows only one of the elements contained in the declaration to be present within the containing element. See more info at http://www.w3.org/TR/xmlschema11-1/#element-choice.

Figure 430: *xs:all*

xs:all specifies that the child elements can appear in any order. See more info at http://www.w3.org/TR/xmlschema11-1/#element-all.

The compositor graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the compositor are drawn using dotted lines if the compositor is optional.

Table 51: *xs:sequence*, *xs:choice*, *xs:all* Properties

Property Name	Description	Possible Values	Mentions
Compositor	Compositor type.	sequence, choice, all.	'all' is only available as a child of a group or complex type.
Min Occurs	Minimum occurrences of compositor.	A numeric positive value. Default is 1.	The property is not present if compositor is 'all' and is child of a group.
Max Occurs	Maximum occurrences of compositor.	A numeric positive value. Default is 1.	The property is not present if compositor is 'all' and is child of a group.
ID	The component ID.	Any ID	For all compositors.
Component	The edited component name.	Not editable property.	For all compositors.

Property Name	Description	Possible Values	Mentions
System ID	The component system ID.	Not editable property.	For all compositors.

xs:any

Figure 431: The *xs:any* Component

Enables the author to extend the XML document with elements not specified by the schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-any.

The graphical representation also contains the value for the *minOccurs* and *maxOccurs* properties (for 0..1 and 1..1 occurs the values are implied by the connector style) and the connectors to the wildcard are drawn using dotted lines if the wildcard is optional.

Table 52: *xs:any* Properties

Property Name	Description	Possible Values
Namespace	The list of allowed namespaces. The namespace attribute expects a list of namespace URIs. In this list, two values have a specific meaning: '##targetNamespace' stands for the target namespace, and '##local' stands for local attributes (without namespaces).	##any, ##other, ##targetNamespace, ##local or anyURI
notNamespace	Specifies the namespace that extension elements or attributes cannot come from.	##local, ##targetNamespace
notQName	Specifies an element or attribute that is not allowed.	##defined
Process Contents	Type of validation required on the elements allowed for this wildcard.	skip, lax, strict
Min Occurs	Minimum occurrences of any	A numeric positive value. Default is 1.
Max Occurs	Maximum occurrences of any	A numeric positive value. Default is 1.
ID	The component ID.	Any ID.
Component	The name of the edited component.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:anyAttribute

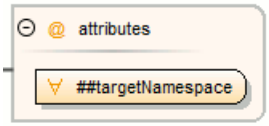


Figure 432: The *xs:anyAttribute* Component

Enables the author to extend the XML document with attributes not specified by the schema. See more info at http://www.w3.org/TR/xmlschema11-1/#element-anyAttribute.

Table 53: *xs:anyAttribute* Properties

Property Name	Description	Possible Value
Namespace	The list of allowed namespaces. The namespace attribute expects a list of namespace URIs. In this list, two values have a specific meaning: '##targetNamespace' stands for the target namespace, and '##local' stands for local attributes (without namespaces).	##any, ##other, ##targetNamespace, ##local or anyURI
Process Contents	Type of validation required on the elements allowed for this wildcard.	skip, lax, strict
ID	The component ID.	Any ID.
Component	The name of the edited component.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:unique

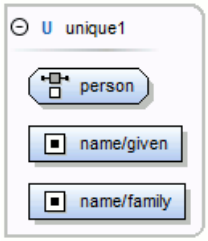


Figure 433: The *xs:unique* Component

Defines that an element or an attribute value must be unique within the scope. See more info at http://www.w3.org/TR/xmlschema11-1/#element-unique.

Table 54: *xs:unique* Properties

Property Name	Description	Possible Values
Name	The unique name. Always required.	Any NCName.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:key

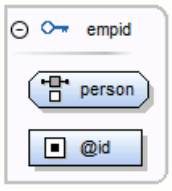


Figure 434: The *xs:key* Component

Specifies an attribute or element value as a key (unique, non-nullable and always present) within the containing element in an instance document. See more info at http://www.w3.org/TR/xmlschema11-1/#element-key.

Table 55: *xs:key* Properties

Property Name	Description	Possible Value
Name	The key name. Always required.	Any NCName.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:keyRef

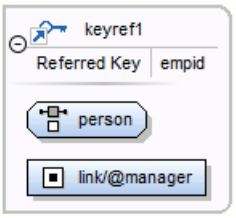


Figure 435: The *xs:keyRef* Component

Specifies that an attribute or element value corresponds to that of the specified key or unique element. See more info at http://www.w3.org/TR/xmlschema11-1/#element-keyref.

A keyref by default displays the *Referenced Key* property when rendered.

Table 56: *xs:keyRef* Properties

Property Name	Description	Possible Values
Name	The keyref name. Always required.	Any NCName.
Referenced Key	The name of referenced key.	any declared element constraints.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
Namespace	The component namespace.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:selector

Figure 436: The *xs:selector* Component

Specifies an XPath expression that selects a set of elements for an identity constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-selector.

Table 57: *xs:selector* Properties

Property Name	Description	Possible Values
XPath	Relative XPath expression identifying the element that the constraint applies to.	An XPath expression.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:field

Figure 437: The *xs:field* Component

Specifies an XPath expression that specifies the value used to define an identity constraint. See more info at http://www.w3.org/TR/xmlschema11-1/#element-field.

Table 58: *xs:field* Properties

Property Name	Description	Possible Values
XPath	Relative XPath expression identifying the field(s) composing the key, key reference, or unique constraint.	An XPath expression.
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:assert

Assertions provide a flexible way to control the occurrence and values of elements and attributes available in an XML Schema.

Note: *xs:assert* is available for XML Schema 1.1.

Figure 438: The *xs:assert* Component

Table 59: *xs:assert* Properties

Property Name	Description	Possible Values
Test	Specifies an XPath expression. If the XPath condition is valid, the specified type is selected as the element type. The expressions allowed are limited to a subset of XPath 2.0. Only the attributes of the current element and inheritable attributes from ancestor elements are accessible in the XPath expression. When you edit this property, the content completion list of proposals offers XPath expressions.	An XPath expression.
XPath Default Namespace	The default namespace used when the XPath expression is evaluated.	##defaultNamespace, ##targetNamespace, ##local.
ID	Specifies the component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

xs:openContent

Figure 439: The *xs:openContent* Component

The *openContent* element enables instance documents to contain extension elements to be inserted amongst the elements declared by the schema. You can declare open content for your elements at one place (within the *complexType* definition) or at the schema level.

For further details about the *openContent* component, go to http://www.w3.org/TR/xmlschema11-1/#element-openContent.

Table 60: *xs:openContent* Properties

Property Name	Description	Possible Value
Mode	Specifies where the extension elements can be inserted.	The value can be: "interleave", "suffix" or "none". The default value is "interleave".
ID	The component ID.	Any ID.
Component	The edited component name.	Not editable property.
System ID	The component system ID.	Not editable property.

Note: This component is available for XML Schema 1.1 only. To change the version of the XML Schema, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema**.

Constructs Used to Group Schema Components

This section explains the components that can be used for grouping other schema components:

- Attributes
- Constraints

- Substitutions

Attributes

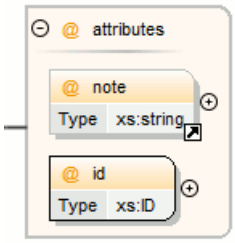


Figure 440: Attributes Construct

Groups all attributes and attribute groups belonging to a complex type.

Table 61: *attributes* Properties

Property Name	Description	Possible Values
Component	The element for which the attributes are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Constraints

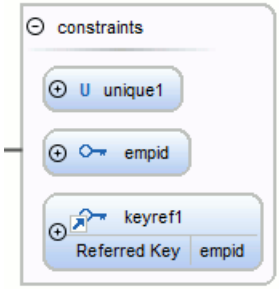


Figure 441: Constraints Construct

Groups all constraints (*xs:key*, *xs:keyRef* or *xs:unique*) belonging to an element.

Table 62: *constraints* Properties

Property Name	Description	Possible Values
Component	The element for which the constraints are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Substitutions

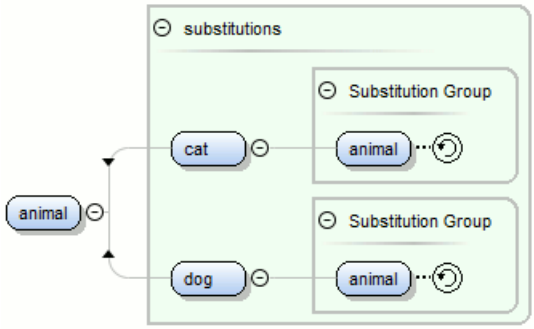


Figure 442: Substitutions Construct

Groups all elements that can substitute the current element.

Table 63: *substitutions* Properties

Property Name	Description	Possible Values
Component	The element for which the substitutions are displayed.	Not editable property.
System ID	The component system ID.	Not editable property.

Schema Validation

Validation for the **Design** mode is seamlessly integrated in the Oxygen XML Editor plugin XML documents validation capability.

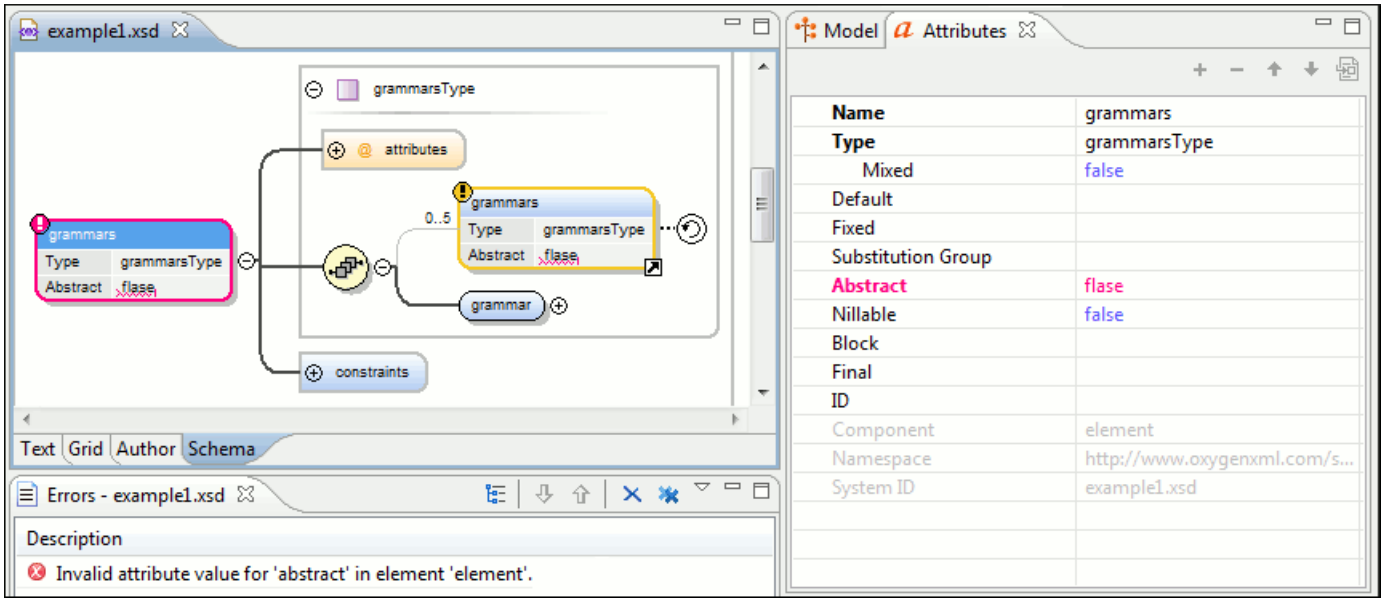


Figure 443: XML Schema Validation

A schema validation error is presented by highlighting the invalid component:

- In the Attributes View.
- In the diagram by surrounding the component that has the error with a red border.

Invalid facets for a component are highlighted in the Facets View.

Components with invalid properties are rendered with a red border. This is a default color, but you can customize it in the Document checking user preferences. When hovering an invalid component, the tooltip will present the validation errors associated with that component.

When editing a value that is supposed to be a qualified or unqualified XML name, the application provides automatic validation of the entered value. This proves to be very useful in avoiding setting invalid XML names for the given property.

If you validate the entire schema using the **Validate** action from the **XML** menu or from the **Validation** toolbar drop-down menu, all validation errors will be presented in the **Errors** tab. To resolve an error, just click it (or double-click for errors located in other schemas) and the corresponding schema component will be displayed as the diagram root so that you can easily correct the error.

Important: If the schema imports only the namespace of other schema without specifying the schema location and a catalog is set-up that maps the namespace to a certain location both the validation and the diagram will correctly identify the imported schema.

Tip: If the validation action finds that the schema contains unresolved references, the application will suggest the use of validation scenarios, but only if the current edited schema is an XML Schema module.

Edit Schema Namespaces

You can use the **XML Schema Namespaces** dialog box to easily set a target namespace and define namespace mappings for a newly created XML Schema. In the **Design** mode these namespaces can be modified anytime by choosing **Edit Schema Namespaces** from the contextual menu. You can also do this by double-clicking the schema root in the diagram.

The **XML Schema Namespaces** dialog box allows you to edit the following information:

- **Target namespace** - The target namespace of the schema.
- **Prefixes** - The dialog box displays a table with namespaces and the mapped prefixes. You can add a new prefix mapping or remove an already existing one.

Editing XML Schema in Text Editing Mode

The Oxygen XML Editor plugin **Text** editing mode can be used for editing XML Schema in a source editing mode. It offers powerful content completion support, a synchronized Outline view, and multiple refactoring actions. The Outline view has two display modes: the standard outline mode and the components mode.

A diagram of the XML Schema can be presented side by side with the text. To activate the diagram presentation, select the *Show Full Model XML Schema diagram* option in the **Diagram** preferences page.

Editing XML Schema in the Master Files Context

Smaller interrelated modules that define a complex XML Schema cannot be correctly edited or validated individually, due to their interdependency with other modules. For example, an element defined in a main schema document is not visible when you edit an included module. Oxygen XML Editor plugin provides the support for defining the main module (or modules), thus allowing you to edit any of the imported/included schema files in the context of the larger schema structure.

You can set a main XML document either using the *master files* support from the **Navigator** view, or using a validation scenario.

To set a *master file* using a validation scenario, add validation units that point to the main schemas. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main schema. In this case, it considers the current module as the main schema.

The advantages of editing in the context of a *master file* include:

- Correct validation of a module in the context of a larger schema structure.
- *Content Completion Assistant* displays all the referable components valid in the current context. This include components defined in modules other than the currently edited one.
- The **Outline** view displays the components collected from the entire schema structure.

Validating XML Schema Documents

By default, XML Schema files are validated as you type. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate an XML Schema document manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. When Oxygen XML Editor plugin validates an XML Schema file, it expands all the included modules so the entire schema hierarchy is validated. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Validation of an XML Schema containing a type definition with a `minOccurs` or `maxOccurs` attribute having a value larger than 256 limits the value to 256 and issues a warning about this restriction in the Message panel at the bottom of the Oxygen XML Editor plugin window. Otherwise, for large values of the `minOccurs` and `maxOccurs` attributes, the validator fails with an **OutOfMemory** error that might make Oxygen XML Editor plugin unusable without restarting the entire application.

Important: If the schema imports only a namespace without specifying the schema location and a catalog is set up to map the namespace to a certain location, both validation and the schema components will correctly identify the imported schema.

Related Information:

Validating XML Documents Against a Schema on page 561
Validation Scenario on page 568
Associating a Schema to XML Documents on page 579
Presenting Validation Errors in Author Mode on page 213
Presenting Validation Errors in Text Mode on page 169

Quick Fixes for DTD, XSD, and Relax NG Errors

Oxygen XML Editor plugin offers *Quick Fixes* for common errors that appear in XML documents that are validated against DTD, XSD, or Relax NG schemas.

Note: For XML documents validated against XSD schemas, the *Quick Fixes* are only available if you use the default Xerces validation engine.

Quick Fixes are available in **Text** mode and **Author** mode.

Oxygen XML Editor plugin provides *Quick Fixes* for numerous types of problems, including the following:

Problem Type	Available Quick Fixes
A specific element is required in the current context	Insert the required element
An element is invalid in the current context	Remove the invalid element
The content of the element should be empty	Remove the element content
An element is not allowed to have child elements	Remove all child elements
Text is not allowed in the current element	Remove the text content
A required attribute is missing	Insert the required attribute
An attribute is not allowed to be set for the current element	Remove the attribute
The attribute value is invalid	Propose the correct attribute values
ID value is already defined	Generate a unique ID value
References to an invalid ID	Change the reference to an already defined ID

Related Information:

Schematron Quick Fixes (SQF) on page 579

Content Completion in XML Schema

The intelligent *Content Completion Assistant* allows you to quickly identify and insert elements, attributes, and attribute values that are valid in the current editing context. All available proposals are listed in a pop-up menu displayed at the current cursor position.

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

When active, the *Content Completion Assistant* displays a list of context-sensitive proposals valid at the current cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut. You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. For each selected item in the list, the *Content Completion Assistant* displays a documentation window. You can customize the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Text** mode, do one of the following:

- Press **Enter** or **Tab** to insert both the start and end tags and position the cursor inside the start tag in a position suitable for inserting attributes.
- Press **Ctrl + Enter (Command + Enter on OS X)** to insert both the start and end tags and positions the cursor between the tags in a position where you can start typing content.

Depending on the selected schema version, Oxygen XML Editor plugin populates the proposals list with information taken either from XML Schema 1.0 or 1.1.

Oxygen XML Editor plugin helps you to easily reference a component by providing the list of proposals (complex types, simple types, elements, attributes, groups, attribute groups, or notations) valid in the current context. The components are collected from the current file or from the imported/included schemas.

When editing `xs:annotation/xs:appinfo` elements of an XML Schema, the *Content Completion Assistant* proposes elements and attributes from a custom schema (by default ISO Schematron). This feature can be configured from the XSD Content Completion preferences page.

Syntax Highlighting in XML Schema

Oxygen XML Editor plugin supports syntax highlighting when editing XML Schema in **Text** mode to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for XML Schema files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XSD** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Customize Syntax Highlight colors on page 92

XML Schema Outline View

The **Outline** view for XML Schemas presents all the global components grouped by their location, namespace, or type. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

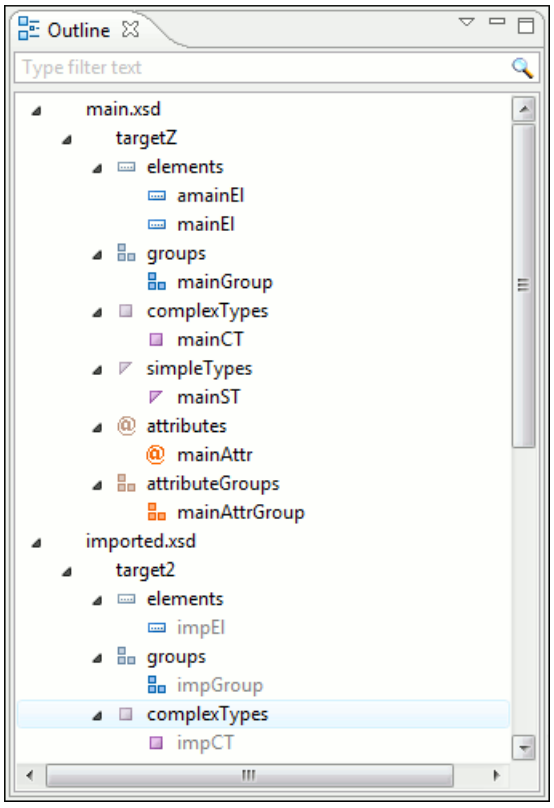


Figure 444: Outline View for XML Schema

The **Outline** view provides the following options in the **View Menu** on the **Outline** view action bar:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches;

Selection update on cursor move

Allows a synchronization between **Outline** view and schema diagram. The selected view from the diagram is also selected in the **Outline** view.

Sort

Allows you to sort alphabetically the schema components.

Show all components

Displays all components that were collected starting from the *master files*. Components that are not referable from the current file are marked with an orange underline. To reference them, add an import directive with the `componentNS` namespace.

Show referable components

Displays all components (collected starting from the *master files*) that can be referenced from the current file. This option is set by default.

Show only local components

Displays the components defined in the current file only.

Group by location/namespace/type

These three operations allow you to group the components by location, namespace, or type. When grouping by namespace, the main schema target namespace is the first presented in the **Outline** view.

The following contextual menu actions are available in the **Outline** view:

Remove (Delete)

Removes the selected item from the diagram.

Search References

Searches all references of the item found at current cursor position in the defined scope, if any.

Search References in

Searches all references of the item found at current cursor position in the specified scope.

Component Dependencies

Opens the **Component Dependencies** view that allows you to see the dependencies for the current selected component.

Resource Hierarchy

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the hierarchy for the current selected resource.

Resource Dependencies

Opens the **Resource Hierarchy / Dependencies** view that allows you to see the dependencies for the current selected resource.

Rename Component in

Renames the selected component.

Generate Sample XML Files

Generate XML files using the current opened schema. The selected component is the XML document root.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

Tip: The search filter is case insensitive. The following wildcards are accepted:

- ***** - any string
- **?** - any character
- **,** - patterns separator

If no wildcards are specified, the string to search will be searched as a partial match.

The content of the **Outline** view and the editing area are synchronized. When you select a component in the **Outline** view, its definition is highlighted in the editing area.

Related Information:

Searching and Refactoring Actions in XML Schemas on page 699
XML Schema Component Dependencies View on page 697
XML Schema Resource Hierarchy / Dependencies View on page 695
Generating Sample XML Files on page 701
Editing Relax NG Schema in the Master Files Context on page 757

XML Schema Attributes View

The **Attributes** view for XML Schemas presents the properties for the selected component in the schema diagram. By default, it is displayed on the right side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

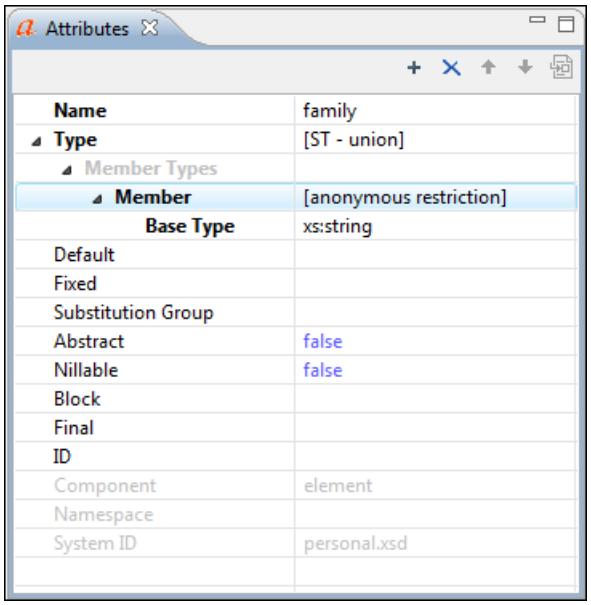


Figure 445: Attributes View

The default value of a property is presented in the **Attributes** view with blue foreground. The properties that can not be edited are rendered with gray foreground. A non-editable category that contains at least one child is rendered with bold. Bold properties are properties with values set explicitly to them.

Properties for components that do not belong to the current edited schema are read-only but if you double-click them you can choose to open the corresponding schema and edit them.

You can edit a property by double-clicking by pressing Enter. For most properties you can choose valid values from a list or you can specify another value. If a property has an invalid value or a warning, it will be highlighted in the table with the corresponding foreground color. By default, properties with errors are highlighted with red and the properties with warnings are highlighted with yellow. You can customize these colors from the Document checking user preferences.

For imports, includes and redefines, the properties are not edited directly in the **Attributes** view. A dialog box will open that allows you to specify properties for them.

The schema namespace mappings are not presented in **Attributes** view. You can view/edit these by choosing **Edit Schema Namespaces** from the contextual menu on the schema root. See more in the Edit Schema Namespaces section.

The **Attributes** view has five actions available on the toolbar and also on the contextual menu:

Add

Allows you to add a new member type to an union's member types category.

Remove

Allows you to remove the value of a property.

Move Up

Allows you to move up the current member to an union's member types category.

Move Down

Allows you to move down the current member to an union's member types category.

Copy

Copy the attribute value.

Go to Definition

Shows the definition for the selected type.

Show Facets

Allows you to edit the facets for a simple type.

XML Schema Palette View

The **Palette** view is designed to offer quick access to XML Schema components and to improve the usability of the XML Schema diagram builder. You can use the **Palette** to drag and drop components in the **Design** mode. The components offered in the **Palette** view depend on the XML schema version set in the **XML Schema** preferences page. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Figure 446: Palette View

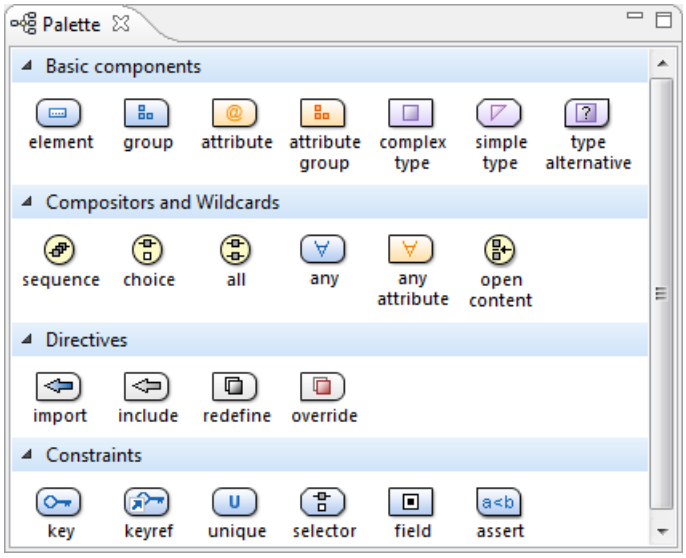


Figure 447: Palette View

Components are organized functionally into 4 collapsible categories:

- Basic components: *elements*, *group*, *attribute*, *attribute group*, *complex type*, *simple type*, *type alternative*.
- Compositors and Wildcards: *sequence*, *choice*, *all*, *any*, *any attribute*, *open content*.
- Directives: *import*, *include*, *redefine*, *override*.
- Identity constraints: *key*, *keyref*, *unique*, *selector*, *field*, *assert*.

Note: The *type alternative*, *open content*, *override*, and *assert* components are available for XML Schema 1.1.

To add a component to the edited schema:

- Click and hold a graphic symbol from the **Palette** view, then drag the component into the **Design** view.
- A line dynamically connects the component with the XML schema structure.
- Release the component into a valid position.

Note: You cannot drop a component into an invalid position. When you hover the component into an invalid position, the mouse cursor changes its shape into . Also, the connector line changes its color from the usual dark gray to the color defined in the **Validation error highlight color** option (default color is red).

For more information about the Schema palette, watch our video demonstration:

https://www.youtube.com/embed/KalHUXmpuAA

XML Schema Facets View

The **Facets** view for XML Schemas presents the facets for the selected component, if available. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

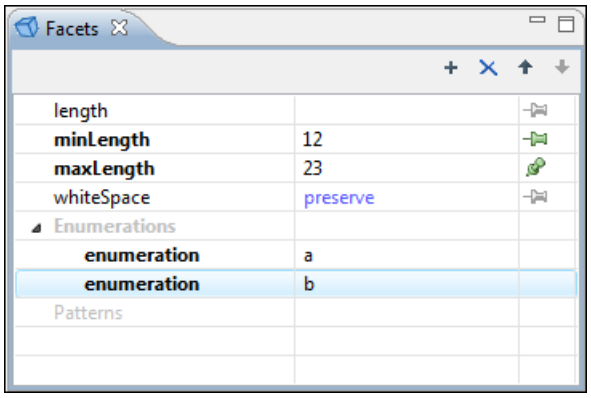


Figure 448: Facets View

The default value of a facet is rendered in the **Facets** view with a blue color. The facets that can not be edited are rendered with a gray color. The grouping categories (for example: **Enumerations** and **Patterns**) are not editable. If these categories contain at least one child they are rendered with bold. Bold facets are facets with values set explicitly to them.

Important: Usually inherited facets are presented as default in the **Facets** view but if patterns are inherited from a base type and also specified in the current simple type only the current specified patterns will be presented. You can see the effective pattern value obtained by combining the inherited and the specified patterns as a tooltip on the **Patterns** category.

Facets for components that do not belong to the current edited schema are read-only but if you double-click them you can choose to open the corresponding schema and edit them.

You can edit a facet by double-clicking it or by pressing Enter, when that facet is selected. For some facets you can choose valid values from a list or you can specify another value. If a facet has an invalid value or a warning, it will be highlighted in the table with the corresponding foreground color. By default, facets with errors are presented with red and the facets with warnings with yellow. You can customize the error colors from the Document Checking user preferences.

The **Facets** view provides the following actions in its toolbar and contextual menu:

Add

Allows you to add a new enumeration or a new pattern.

Remove

Allows you to remove the value of a facet.

Edit Annotations

Allows you to edit an annotation for the selected facet.

Move Up

Allows you to move up the current enumeration/pattern in **Enumerations/Patterns** category.

Move Down

Allows you to move down the current enumeration/pattern in **Enumerations/Patterns** category.

Copy

Copy the attribute value.

Open in Regular Expressions Builder

Rather than editing regular expressions manually, this action allows you to open the pattern in the XML Schema Regular Expressions Builder that guides you through the process of testing and constructing the pattern..

Facets can be fixed to prevent a derivation from modifying its value. To fix a facet value just press the **Pin** button.

XML Schema Resource Hierarchy / Dependencies View

The **Resource Hierarchy / Dependencies** view allows you to easily see the hierarchy / dependencies for an XML Schema, a Relax NG schema or an XSLT stylesheet. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The **Resource Hierarchy / Dependencies** is useful when you want to start from an XML Schema (XSD) file and build and review the hierarchy of all the other XSD files that are imported, included or redefined in the given XSD file. The view is also able to build the tree structure, that is the structure of all other XSD files that import, include or redefine the given XSD file. The scope of the search is configurable (the current project, a set of local folders, etc.)

The build process for the hierarchy view is started with the **Resource Hierarchy** action available on the contextual menu of the editor panel.

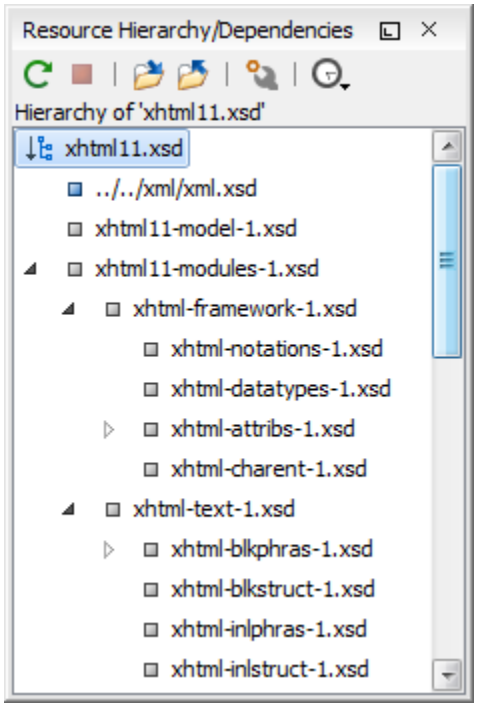


Figure 449: Resource Hierarchy/Dependencies View - Hierarchy for `xhtml11.xsd`

The build process for the dependencies view is started with the **Resource Dependencies** action available on the contextual menu.

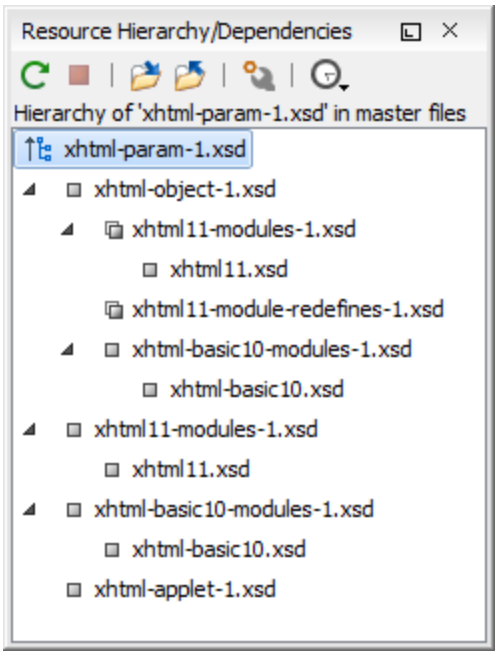


Figure 450: Resource Hierarchy/Dependencies View - Dependencies for `xhtml-param-1.xsd`

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Note: The **Move resource** or **Rename resource** actions give you the option to update the references to the resource.

Related Information:

Search and Refactor Operations Scope on page 588

Moving/Renaming XML Schema Resources

You can move and rename a resource presented in the **Resource/Hierarchy Dependencies** view, using the **Rename resource** and **Move resource** refactoring actions from the contextual menu.

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

XML Schema Component Dependencies View

The **Component Dependencies** view allows you to see the dependencies for a selected component. This is helpful if you want to see where components are used in the entire hierarchy. For example, if you want to find all the references where a given component is used.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

To see the dependencies of an XML Schema component:

1. Right-click the desired component in the editor or **Outline** view.
2. Select the **Component Dependencies** action from the contextual menu.

The action is available for all named components (for example, elements or attributes).

If a component contains multiple references, a small table is displayed at the bottom of the view that contains all the references. When a recursive reference is encountered, it is marked with a special icon .

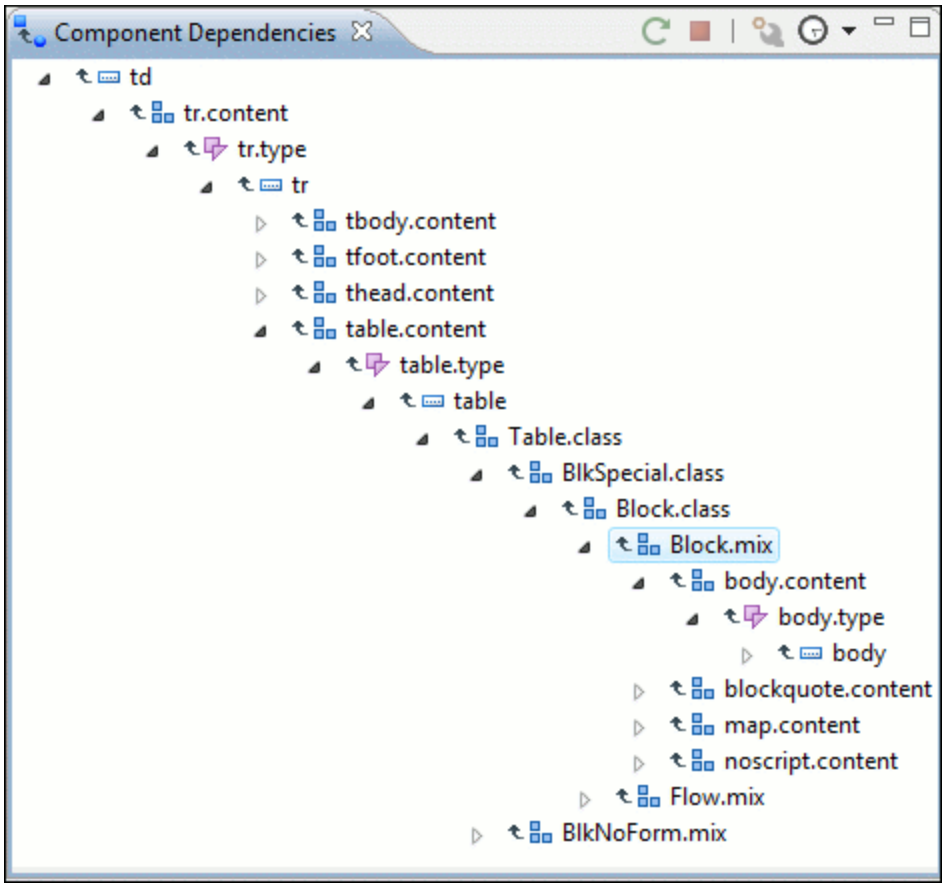


Figure 451: Component Dependencies View - Hierarchy for `xhtml11.xsd`

The **Component Dependencies** view includes the following toolbar actions:

Refresh

Refreshes the dependencies structure.

Stop

Stops the dependency computation.

Configure

Allows you to choose the search scope for computing the dependencies structure. This is helpful for making sure all imported/included resources are computed.

History

Allows you to select from a list of the most recently used dependency computations.

In addition, the following actions are available in the contextual menu:

Go to First Reference

Selects the first reference of the currently selected component in the dependencies tree.

Go to Component

Shows the definition of the currently selected component in the dependencies tree.

For more information, see the **Maintain Complex XML Schemas** section of our **Developing XML Schemas** video demonstration:

https://www.youtube.com/embed/vz1eIZELQgc

Related Information:

Search and Refactor Operations Scope on page 588

Highlight Component Occurrences

When a component (for example types, elements, attributes) is found at current cursor position, Oxygen XML Editor plugin performs a search over the entire document to find the component declaration and all its references. When found, they are highlighted both in the document and in the stripe bar, at the right side of the document. Customizable colors are used: one for the component definition and another one for component references. Occurrences are displayed until another component is selected and a new search is performed. All occurrences are removed when you start to edit the document.

This feature is on by default. To configured it, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**. A search can also be triggered with the **Search** > **Search Occurrences in File ()** contextual menu action. All matches are displayed in a separate tab of the **Results** view.

Searching and Refactoring Actions in XML Schemas

Search Actions

The following search actions can be applied on `attribute`, `attributeGroup`, `element`, `group`, `key`, `unique`, `keyref`, `notation`, `simple`, or `complex` types and are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

The following action is available from the **XSL** menu:

- **Go to Definition** - Moves the cursor to the definition of the referenced XML Schema item.

  Note: You can also use the **Ctrl + Single-Click (Command + Single-Click on OS X)** shortcut on a reference to display its definition.

Refactoring Actions

The following refactoring actions can be applied on `attribute`, `attributeGroup`, `element`, `group`, `key`, `unique`, `keyref`, `notation`, `simple`, or `complex` types and are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

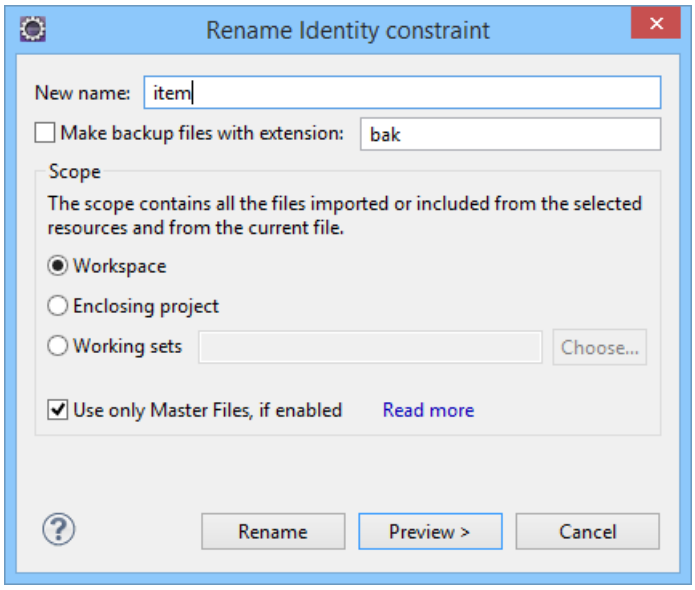


Figure 452: Rename Identity Constraint Dialog Box

Related Information:

Search and Refactor Operations Scope on page 588

XML Schema Quick Assist Support

The *Quick Assist* support improves the development work flow, offering fast access to the most commonly used actions when you edit schema documents.

The *Quick Assist* feature is activated automatically when the cursor is positioned over the name of a component. It is accessible via a yellow bulb icon ( ) placed at the current line in the stripe on the left side of the editor. Also, you can invoke the *quick assist* menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

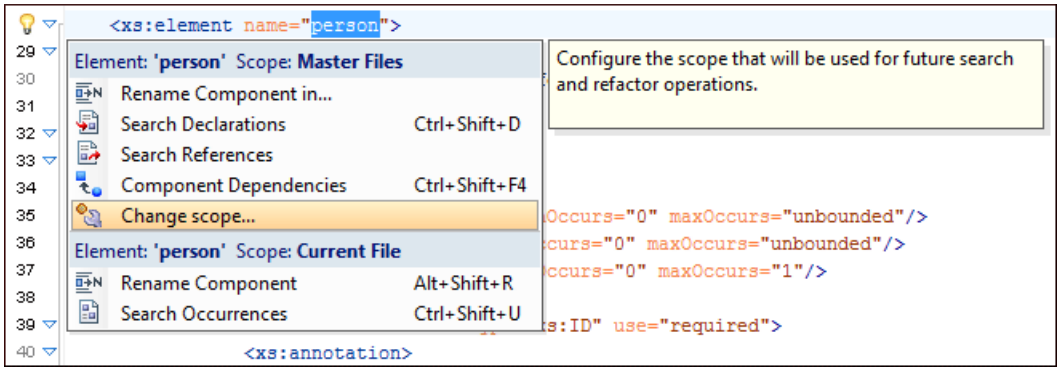


Figure 453: Quick Assist Support

The *Quick Assist* support offers direct access to the following actions:

Rename Component in

Renames the component and all its dependencies.

Search Declarations

Searches the declaration of the component in a predefined scope. It is available only when the context represents a component name reference.

Search References

Searches all references of the component in a predefined scope.

Component Dependencies

Searches the component dependencies in a predefined scope.

Change Scope

Configures the scope that will be used for future search or refactor operations.

Rename Component

Allows you to rename the current component in-place.

Search Occurrences

Searches all occurrences of the component within the current file.

For more information about improving schema development using the **Quick Assist** action set, watch our video demonstration:

https://www.youtube.com/embed/X-2-gkrFSGU

Related Information:

Resource Hierarchy / Dependencies View on page 695
Component Dependencies View on page 697
Searching and Refactoring Actions on page 699

Generating Sample XML Files

Oxygen XML Editor plugin offers support to generate sample XML files both from XML schema 1.0 and XML schema 1.1, depending on the XML schema version set in **XML Schema** preferences page.

To generate sample XML files from an XML Schema, use the **Generate Sample XML Files** action from the **XML Tools** menu. This action is also available in the contextual menu of the schema Design mode. The action opens the **Generate Sample XML Files** dialog box that allows you to configure a variety of options for generating the files.

The **Generate Sample XML Files** dialog box contains three tabs with various configurable options. Default values for these options can be set in the **Sample XML Files Generator** preferences page.

Schema Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The first set of options are found in the **Schema** tab.

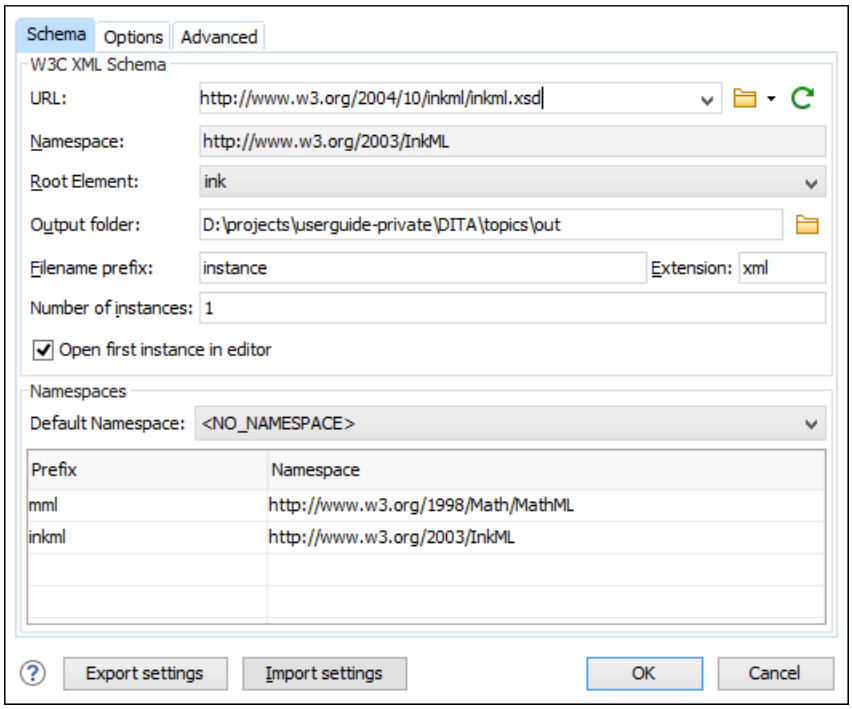


Figure 454: Generate Sample XML Files Dialog Box (Schema Tab)

This tab includes the following options:

URL

Specifies the URL of the Schema location. You can specify the path by using the text field, the history drop-down menu, or the browsing tools in the **Browse** drop-down list.

Namespace

Displays the namespace of the selected schema.

Root Element

After the schema is selected, this drop-down menu is populated with all root candidates gathered from the schema. Choose the root of the output XML documents.

Output folder

Path to the folder where the generated XML instances will be saved.

Filename prefix and Extension

You can specify the prefix and extension for the file name that will be generated. Generated file names have the following format: `prefixN.extension`, where N represents an incremental number from 0 up to the specified **Number of instances**.

Number of instances

The number of XML files to be generated.

Open first instance in editor

When selected, the first generated XML file is opened in the editor.

Namespaces section

You can specify the **Default Namespace**, as well as the prefixes for the namespaces.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

You can click **OK** at any point to generate the sample XML files.

Options Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The **Options** tab allows you to set specific options for namespaces and elements.

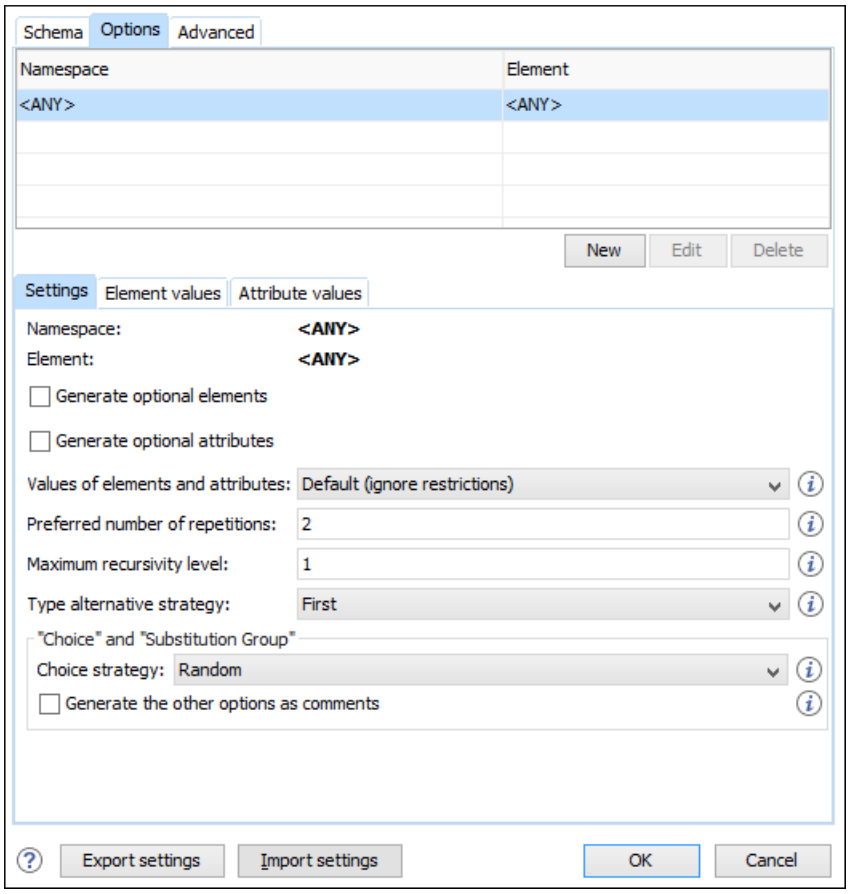


Figure 455: Generate Sample XML Files Dialog Box (Options Tab)

This tab includes the following options:

Namespace / Element table

Allows you to set a namespace for each element name that appears in an XML document instance. The following prefix-to-namespace associations are available:

- All elements from all namespaces (<ANY> - <ANY>). This is the default setting.
- All elements from a specific namespace.
- A specific element from a specific namespace.

Settings subtab

Namespace

Displays the namespace specified in the table at the top of the dialog box.

Element

Displays the element specified in the table at the top of the dialog box.

Generate optional elements

When selected, all elements are generated, including the optional ones (having the `minOccurs` attribute set to 0 in the schema).

Generate optional attributes

When selected, all attributes are generated, including the optional ones (having the `use` attribute set to `optional` in the schema).

Values of elements and attributes

Controls the content of generated attribute and element values. The following choices are available:

- **None** - No content is inserted.
- **Default** - Inserts a default value depending of data type descriptor of the particular element or attribute. The default value can be either the data type name or an incremental name of the attribute or element (according to the global option from the **Sample XML Files Generator** preferences page). Note that type restrictions are ignored when this option is selected. For example, if an element is of a type that restricts an **xs:string** with the **xs:maxLength** facet to allow strings with a maximum length of 3, the XML instance generator tool may generate string element values longer than 3 characters.
- **Random** - Inserts a random value depending of data type descriptor of the particular element or attribute.

  Important: If all of the following are true, the **Generate Sample XML Files** tool outputs invalid values:

  - At least one of the restrictions is a `regexp`.
  - The value generated after applying the regexp does not match the restrictions imposed by one of the facets.

Preferred number of repetitions

Allows you to set the preferred number of repeating elements related to `minOccurs` and `maxOccurs` facets defined in the XML Schema.

- If the value set here is between `minOccurs` and `maxOccurs`, then that value is used.
- If the value set here is less than `minOccurs`, then the `minOccurs` value is used.
- If the value set here is greater than `maxOccurs`, then `maxOccurs` is used.

Maximum recursion level

If a recursion is found, this option controls the maximum allowed depth of the same element.

Type alternative strategy

Used for the `xs:alternative` element from XML Schema 1.1. The possible strategies are:

- **First** - The first valid alternative type is always used.
- **Random** - A random alternative type is used.

Choice strategy

Used for `xs:choice` or `substitutionGroup` elements. The possible strategies are:

- **First** - The first branch of `xs:choice` or the head element of `substitutionGroup` is always used.
- **Random** - A random branch of `xs:choice` or a substitute element or the head element of a `substitutionGroup` is used.

Generate the other options as comments

If selected, generates the other possible choices or substitutions (for `xs:choice` and `substitutionGroup`). These alternatives are generated inside comments groups so you can uncomment and use them later. Use this option with care (for example, on a restricted namespace and element) as it may generate large result files.

Element values subtab

Allows you to add values that are used to generate the content of elements. If there are multiple values, then the values are used in a random order.

Attribute values subtab

Allows you to add values that are used to generate the content of attributes. If there are multiple values, then the values are used in a random order.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

You can click **OK** at any point to generate the sample XML files.

Advanced Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The **Advanced** tab allows you to set some options in regards to output values and performance.

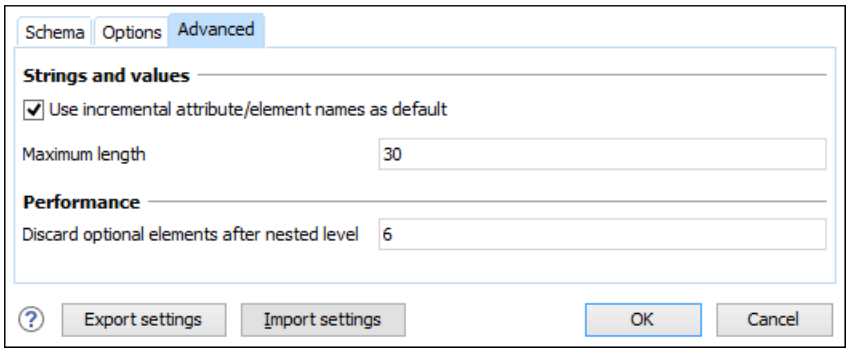


Figure 456: Generate Sample XML Files Dialog Box (Advanced Tab)

This tab includes the following options:

Use incremental attribute / element names as default

If selected, the value of an element or attribute starts with the name of that element or attribute. For example, for an a element the generated values are: a1, a2, a3, and so on. If not selected, the value is the name of the type of that element / attribute (for example: `string`, `decimal`, etc.)

Maximum length

The maximum length of string values generated for elements and attributes.

Discard optional elements after nested level

The optional elements that exceed the specified nested level are discarded. This option is useful for limiting deeply nested element definitions that can quickly result in very large XML documents.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

Generating Documentation for an XML Schema

Oxygen XML Editor plugin can generate detailed documentation for the components of an XML Schema in HTML, PDF, DocBook, or other custom formats. You can select the components and the level of detail. The components are hyperlinked in both HTML and DocBook documents.

Note: You can generate documentation for both XML Schema version 1.0 and 1.1.

To generate documentation for an XML Schema document, select **XML Schema Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate XML Schema Documentation** action from the contextual menu of the **Navigator** view.

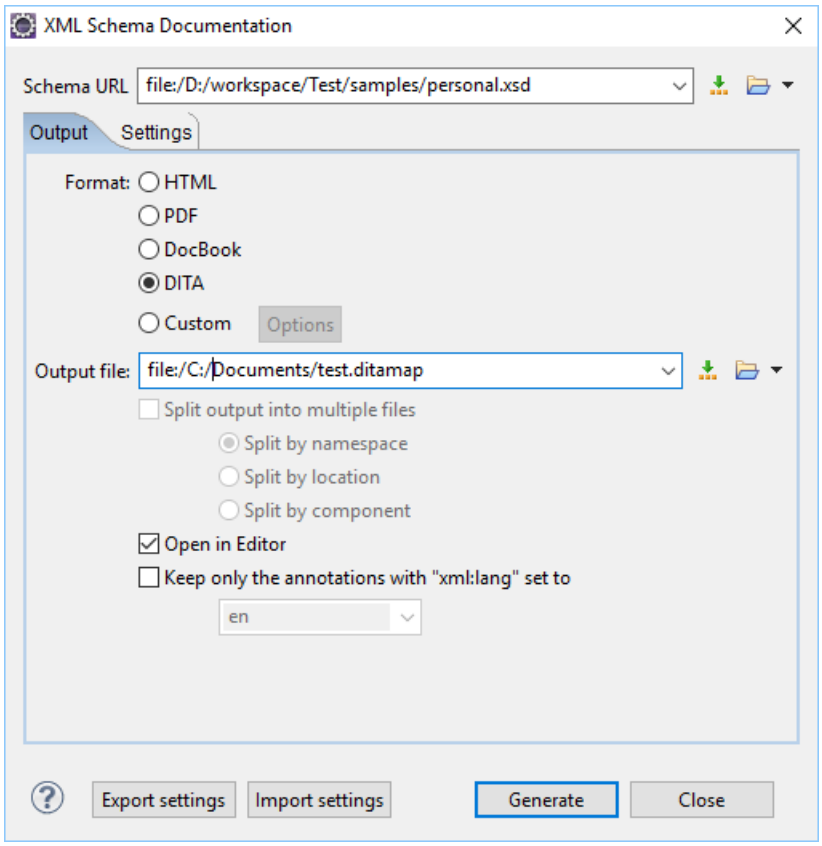


Figure 457: XML Schema Documentation Dialog Box

The **Schema URL** field of the dialog box must contain the full path to the XML Schema (XSD) file for which you want to generate documentation. The schema may be a local or a remote file. You can specify the path to the schema by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:
  - **HTML** - The documentation is generated in HTML output format.
  - **PDF** - The documentation is generated in PDF output format.
  - **DocBook** - The documentation is generated in DocBook output format.
  - **DITA** - The documentation is generated in DITA output format.
  - **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.
- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type. For DITA and DocBook documents, this option appears as **Open in Editor** and the result will be opened in Oxygen XML Editor plugin (in the current editor).

Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.

- **Keep only the annotations with xml:lang set to** - The generated output will contain only the annotations with the `xml:lang` attribute set to the selected language. If you choose a primary language code (for example, **en** for English), this includes all its possible variations (**en-us**, **en-uk**, etc.).

Settings Tab

When you generate documentation for an XML schema you can choose what components to include in the output and the details to be included in the documentation.

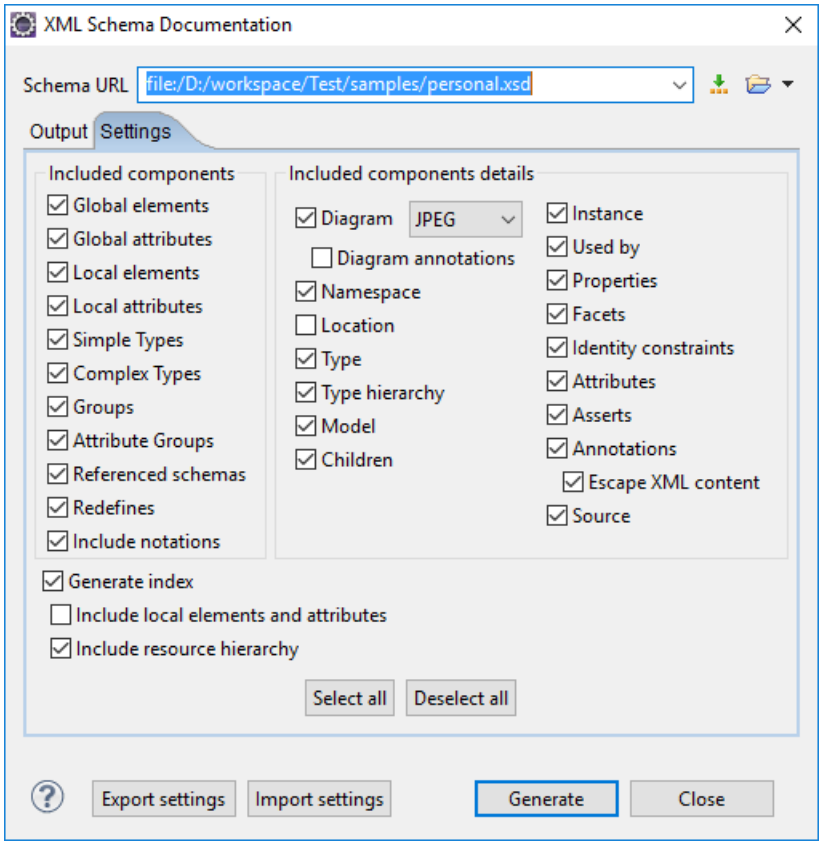


Figure 458: Settings Tab of the XML Schema Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following components: **Global elements**, **Global attributes**, **Local elements**, **Local attributes**, **Simple Types**, **Complex Types**, **Groups**, **Attribute Groups**, **Redefines**, **Referenced schemas**, **Include notations**.

You can choose whether or not to include the following other details:

- **Diagram** - Displays the diagram for each component. You can choose the image format (JPEG, PNG, SVG) to use for the diagram section. The generated diagrams are dependent on the options from the Schema Design Properties page.
  - **Diagram annotations** - This option controls whether or not the annotations of the components presented in the diagram sections are included.
- **Namespace** - Displays the namespace for each component.
- **Location** - Displays the schema location for each component.
- **Type** - Displays the component type if it is not an anonymous one.
- **Type hierarchy** - Displays the types hierarchy.
- **Model** - Displays the model (sequence, choice, all) presented in BNF form. The separator characters that are used depend upon the information item used:
  - `xs:all` - Its children will be separated by space characters.

    - `xs:sequence` - Its children will be separated by comma characters.
    - `xs:choice` - Its children will be separated by / characters.
- **Children** - Displays the list of component's children.
- **Instance** - Displays an XML instance generated based on each schema element.
- **Used by** - Displays the list of all the components that reference the current one. The list is sorted by component type and name.
- **Properties** - Displays some of the component's properties.
- **Facets** - Displays the facets for each simple type
- **Identity constraints** - Displays the identity constraints for each element. For each constraint there are presented the name, type (unique, key, keyref), reference attribute, selector and field(s).
- **Attributes** - Displays the attributes for the component. For each attribute there are presented the name, type, fixed or default value, usage and annotation.
- **Asserts** - Displays the **assert** elements defined in a complex type. The test, XPath default namespace, and annotation are presented for each assert.
- **Annotations** - Displays the annotations for the component. If you choose **Escape XML Content**, the XML tags are present in the annotations.
- **Source** - Displays the text schema source for each component.
- **Generate index** - Displays an index with the components included in the documentation.
    - **Include local elements and attributes** - If selected, local elements and attributes are included in the documentation index.
    - **Include resource hierarchy** - Specifies whether or not the resource hierarchy for an XML Schema documentation is generated. It is deselected by default.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the XML Schema documentation.

Related Information:

Customizing PDF or DocBook Output of Generated XML Schema Documentation on page 712

Output Formats for Generating XML Schema Documentation

XML Schema documentation can be generated in HTML, PDF, DocBook, or a custom format. You can choose the format from the Schema Documentation dialog box. For the PDF and DocBook formats, the option to split the output in multiple files is not available.

HTML Output Format

The XML Schema documentation generated in HTML format contains images corresponding to the same schema definitions as the ones displayed by the schema diagram editor. These images are divided in clickable areas that are linked to the definitions of the names of types or elements. The documentation of a definition includes a **Used By** section with links to the other definitions that reference it. If the **Escape XML Content** option is unchecked, the HTML or XHTML tags used inside the `xs:documentation` elements of the input XML Schema for formatting the documentation text (for example, `<b>`, `<i>`, `<u>`, `<ul>`, `<li>`, etc.) are rendered in the generated HTML documentation.

The generated images format is **PNG**. The image of an XML Schema component contains the graphical representation of that component as it is rendered in the schema diagram panel of the Oxygen XML Editor plugin XSD editor panel.

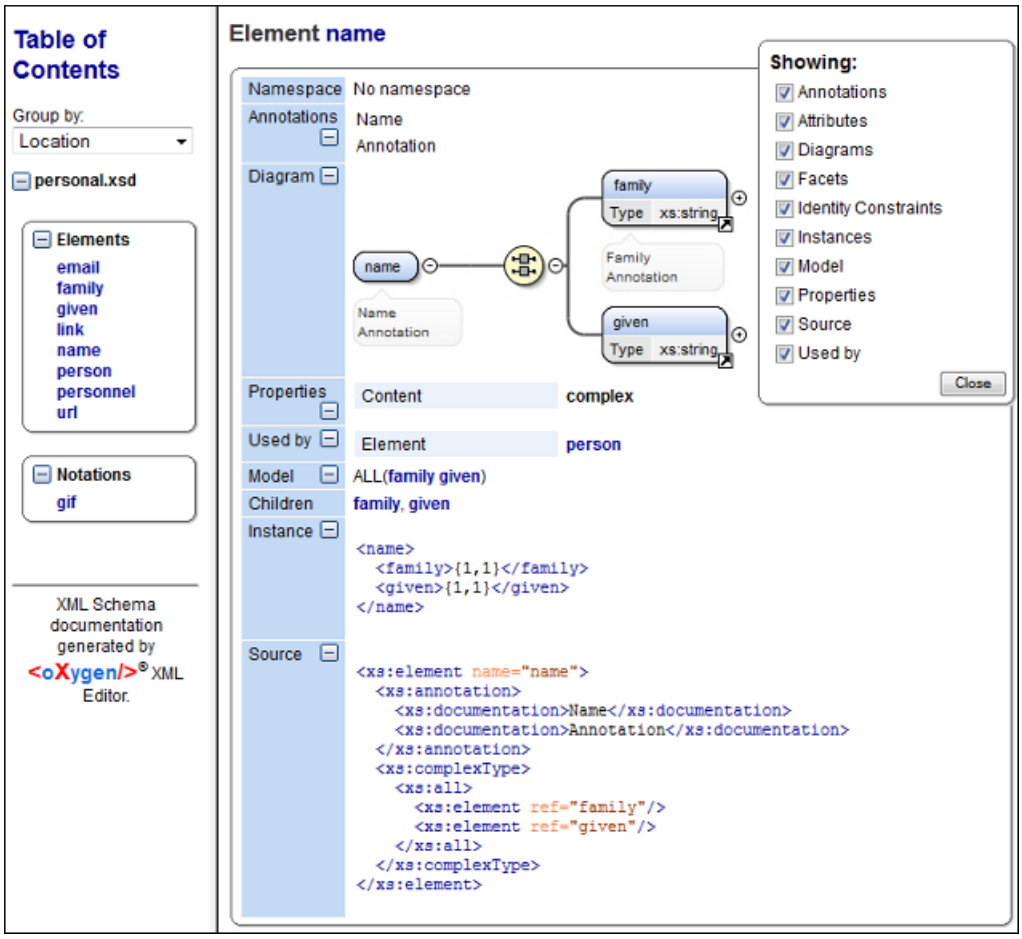


Figure 459: XML Schema Documentation Example

The generated documentation includes a table of contents. You can group the contents by namespace, location, or component type. After the table of contents there is some information about the main, imported, included, and redefined schemas. This information contains the schema target namespace, schema properties (attribute form default, element form default, version), and schema location.

Figure 460: Information About a Schema

If you choose to split the output into multiple files, the table of contents is displayed in the left frame. The contents are grouped in the same mode. If you split the output by location, each file contains a schema description and the components that you have chosen to include. If you split the output by namespace, each file contains information about schemas from that namespace and the list with all included components. If you choose to split the output by component, each file contains information about a schema component.

After the documentation is generated, you can collapse or expand details for some schema components by using the **Showing** options or the **Collapse** or **Expand** buttons.

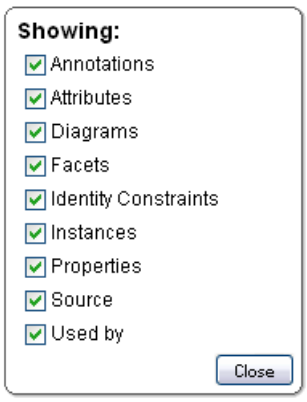


Figure 461: Showing Options

For each component included in the documentation, the section presents the component type follow by the component name. For local elements and attributes, the name of the component is specified as *parent name/component name*. You can easily go to the parent documentation by clicking the parent name.

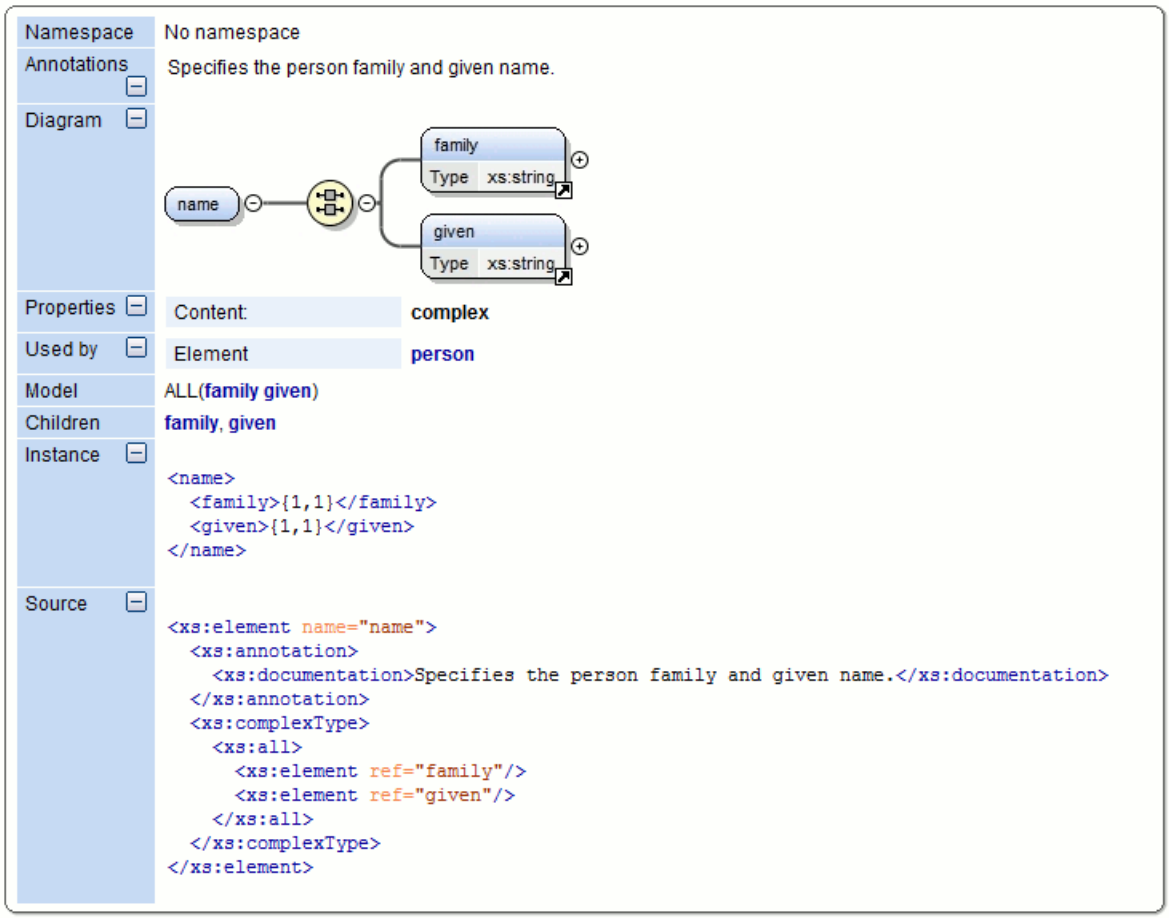


Figure 462: Documentation for a Schema Component

If the schema contains imported or included modules, their dependencies tree is generated in the documentation.

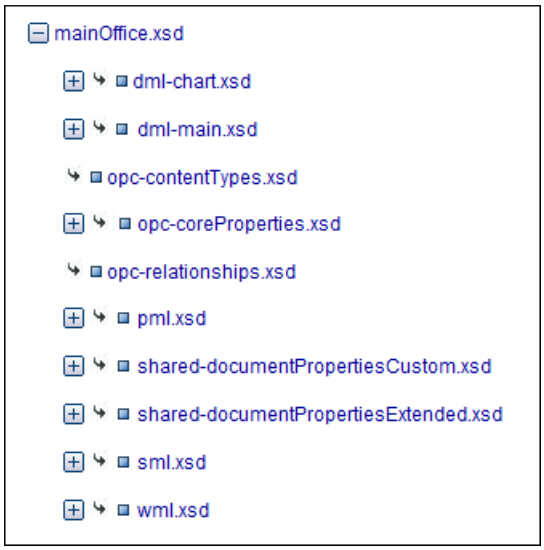


Figure 463: Example: Generated Documentation

PDF Output Format

For the PDF output format, the documentation is generated in DocBook format and a transformation using the FOP processor is applied to obtain the PDF file. To configure the FOP processor, see the FO Processors preferences page.

For information about customizing the PDF output, see Customizing PDF or DocBook Output of Generated XML Schema Documentation on page 712.

DocBook Output Format

If you generate the documentation in DocBook output format, the documentation is generated as a DocBook XML file. You can then apply a predefined DocBook transformation scenario (such as, *DocBook PDF* or *DocBook HTML*) on the output file, or configure your own transformation scenario to convert it into whatever format you desire.

For information about customizing the DocBook output, see Customizing PDF or DocBook Output of Generated XML Schema Documentation on page 712.

DITA Output Format

If you generate the documentation in DITA output format, each element of the schema is converted to a DITA *Topic* and all the generated topics are referenced in a *DITA map* file. You can then apply a predefined DITA transformation scenario (such as, *DITA Map PDF* or *DITA Map XHTML*), or configure your own DITA OT transformation scenario to convert it into whatever format you desire.

For information about customizing the DITA output, see Customizing DITA Output of Generated XML Schema on page 712.

Custom Output Format

For the custom format, you can specify a stylesheet to transform the intermediary XML file generated in the documentation process. You have to edit your stylesheet based on the schema `xsdDocSchema.xsd` from `[OXYGEN_INSTALL_DIR]/frameworks/schema_documentation`. You can create a custom format starting from one of the stylesheets used in the predefined HTML, PDF, DocBook, and DITA formats. These stylesheets are available in `[OXYGEN_INSTALL_DIR]/frameworks/schema_documentation/xsl`.

When using a custom format you can also copy additional resources into the output folder and choose to keep the intermediate XML files created during the documentation process.

Important: If you create a custom format for DITA, you must select the **Split output into multiple files** option in the **Output** tab and choose **Split by component**.

Customizing PDF or DocBook Output of Generated XML Schema Documentation

To customize the PDF or DocBook output of the generated XML Schema documentation, use the following procedure:

1. Customize the *[OXYGEN_INSTALL_DIR]*`/frameworks/schema_documentation/xsl/xsdDocDocbook.xsl` stylesheet to include the content that you want to add in the PDF or DocBook output. Add the content in the XSLT template with the `match="schemaDoc"` attribute between the `info` and `xsl:apply-templates` elements, as commented in the following example:

```
<info>
    <pubdate><xsl:value-of select="format-date(current-date(),
        '[Mn] [D], [Y]', 'en', (), ())"/></pubdate>
</info>
   <!-- Add the XSLT template content with match="schemaDoc" attribute here -->

<xsl:apply-templates select="schemaHierarchy"/>
```

2. Create an intermediary file that holds the content of your XML Schema documentation by following these steps:
   a. Go to **Tools** > **Generate Documentation** > **XML Schema Documentation**.
   b. Select **Custom** for the output format and click the **Options** button.
   c. In the **Custom format options** dialog box, do the following:
      1. Enter the customized stylesheet in the **Custom XSL** field (*[OXYGEN_INSTALL_DIR]*`/frameworks/schema_documentation/xsl/xsdDocDocbook.xsl`).
      2. Select the **Copy additional resources to the output folder** option and leave the default selection in the **Resources** field.
      3. Click **OK**.
   d. When you return to the **XML Schema Documentation** dialog box, just press the **Generate** button to generate a DocBook XML file with an intermediary form of the Schema documentation.
3. If you want the DocBook file to be transformed into a PDF document, follow these steps:
   a. Use the **Configure Transformation Scenario(s)** action from the toolbar or the **XML** menu, click **New**, and select **XML transformation with XSLT**.
   b. In the **New Scenario** dialog box, go to the **XSL URL** field and choose the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/oxygen/xsdDocDocbookCustomizationFO.xsl` file.
   c. Go to the **FO Processor** tab and select the **Perform FO Processing** and **XSLT result as input** options.
   d. Go to the **Output** tab and select the directory where you want to store the XML Schema documentation output and click **OK**.
   e. Click **Apply Associated**.

Customizing DITA Output of Generated XML Schema

To customize the DITA output of the generated XML Schema documentation, use the following procedure:

1. Customize the *[OXYGEN_INSTALL_DIR]*`/frameworks/schema_documentation/xsl/xsdDocDita.xsl` stylesheet to incorporate your desired changes.
2. Create an intermediary file that holds the content of your XML Schema documentation by following these steps:
   a. Go to **Tools** > **Generate Documentation** > **XML Schema Documentation**.
   b. Select **Custom** for the output format and click the **Options** button.
   c. In the **Custom format options** dialog box, do the following:
      1. Enter the customized stylesheet in the **Custom XSL** field (*[OXYGEN_INSTALL_DIR]*`/frameworks/schema_documentation/xsl/xsdDocDita.xsl`).
      2. Select the **Copy additional resources to the output folder** option and leave the default selection in the **Resources** field.
      3. Click **OK**.
   d. Make sure the **Split output into multiple files** option is selected and choose **Split by component**.
   e. When you return to the **XML Schema Documentation** dialog box, just press the **Generate** button to generate a DITA map file that contains the XML Schema documentation.

Generating XML Schema Documentation From the Command-Line Interface

You can export the settings of the **XML Schema Documentation** dialog box to an XML file by pressing the **Export settings** button. With the exported configuration file, you can generate the same documentation from the command-line interface by running the following script:

- `schemaDocumentation.bat` on Windows.
- `schemaDocumentation.sh` on OS X / Linux.

The script is located in the Oxygen XML Editor plugin installation folder. The script can be integrated in an external batch process launched from the command-line interface. The script accepts a variety command line arguments that allow you to configure the documentation.

The accepted syntax and arguments are as follows:

`schemaDocumentation schemaFile [ [-cfg:configFile] | [ [-out:outputFile] [-format:<value>] [-xsl:<xslFile>] [-split:<value>] [-openInBrowser:<value>] ] | --help | -help | --h | -h ]`

schemaFile

The XML Schema file.

-cfg:configfile

The exported configuration file. It contains the output file, output format options, split method, and some advanced options regarding the included components and components details. If an external configuration file is specified, all other supplied arguments except for the XML Schema file will be ignored.

-out:outputFile

The file where the generated documentation will be saved. By default, it is the name of the schema file with an *html* extension.

-format:<value>

The output format type used when generating the documentation. Possible values are as follows:

- `html` - To generate documentation in HTML format.
- `pdf` - To generate documentation in PDF format.
- `docbook` - To generate documentation in DocBook format.
- `custom` - To generate documentation in a custom format.

-xsl:<xslFile>

The XSL file to be applied on the intermediate XML format. If there is no XSL file provided, the result will be in the HTML format.

-split:<value>

The split method used when generating the documentation. Splitting is recommended for large schemas. Possible values are as follows:

- `none` (default value) - To generate one single output file.
- `namespace` - To generate an output file for every namespace in the schema.
- `component` - To generate an output file for every component in the schema.
- `location` - To generate an output file for every schema location.

-openInBrowser:<value>

Opens the result of the transformation in a browser or system application. Possible values are `true` or `false` (default value).

--help | -help | --h | -h

Displays the available options.

Example:

Example of the script in a Windows command line:

```
schemaDocumentation example.xsd -out:schemaDocumentation.html
    -format:custom -xsl:example.xsl -split:namespace
```

Converting Schema to Another Schema Language

The **Generate/Convert Schema** tool allows you to convert a DTD or Relax NG (full or compact syntax) schema or a set of XML files to an equivalent XML Schema, DTD or Relax NG (full or compact syntax) schema. Where perfect equivalence is not possible due to limitations of the target language, Oxygen XML Editor plugin generates an approximation of the source schema. Oxygen XML Editor plugin uses *Trang multiple format converter* to perform the actual schema conversions.

To use this tool, select the **Generate/Convert Schema (Ctrl + Shift + BackSlash (Command + Shift + BackSlash on OS X))** action from the **XML Tools** menu. This action opens the **Generate/Convert Schema** dialog box that allows you to configure various options for conversion.

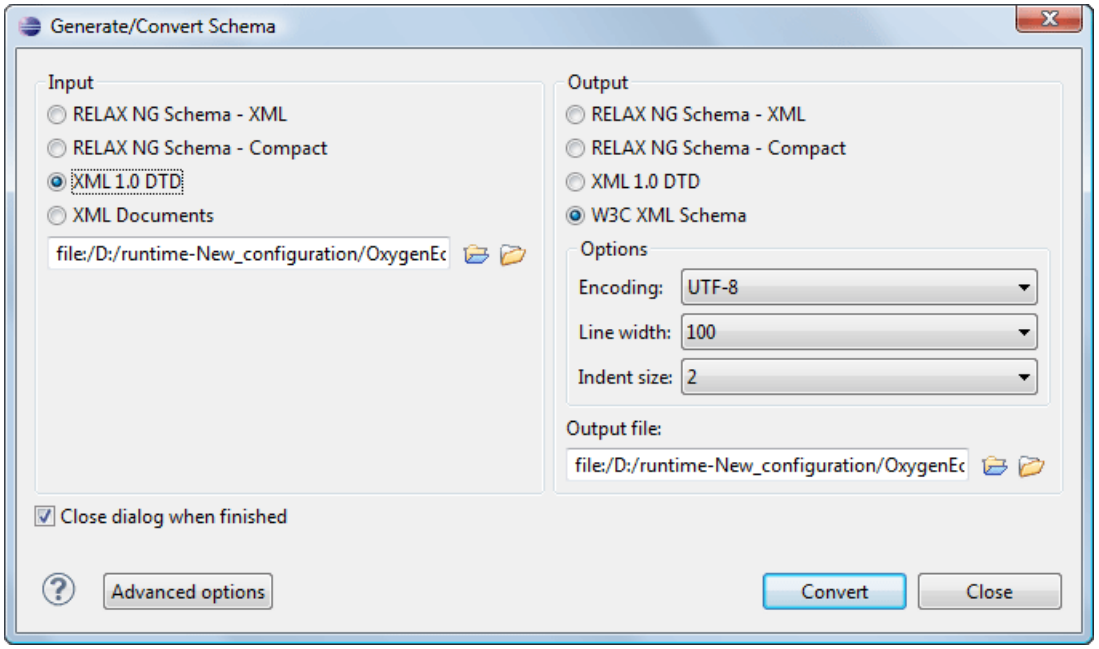


Figure 464: Generate/Convert Schema Dialog Box

The **Generate/Convert Schema** dialog box includes the following options:

Input section

Allows you to select the language of the source schema. If the conversion is based on a set of XML files, rather than just a single XML file, select the **XML Documents** option and use the file selector to add the XML files involved in the conversion.

Output section

Allows you to select the language of the target schema.

Options

You can choose the **Encoding**, the maximum **Line width**, and the **Indent size** (in number of spaces) for one level of indentation.

Output file

Specifies the path for the output file that will be generated.

Close dialog when finished

If you deselect this option, the dialog box will remain opened after the conversion so that you can easily continue to convert more files.

Advanced options

If you select **XML 1.0 DTD** for the input, you can click this button to access more advance options to further fine-tune the conversion. The following advanced options are available:

XML 1.0 DTD Input section

These options apply to the source DTD:

- **xmlns** - Specifies the default namespace, that is the namespace used for unqualified element names.
- **attlist-define** - Specifies how to construct the name of the definition representing an attribute list declaration from the name of the element. The specified value must contain exactly one percent character. This percent character is replaced by the name of element (after colon replacement) and the result is used as the name of the definition.
- **colon-replacement** - Replaces colons in element names with the specified chars when constructing the names of definitions used to represent the element declarations and attribute list declarations in the DTD.
- **any-name** - Specifies the name of the definition generated for the content of elements declared in the DTD as having a content model of ANY.
- **element-define** - Specifies how to construct the name of the definition representing an element declaration from the name of the element. The specified value must contain exactly one percent character. This percent character is replaced by the name of element (after colon replacement) and the result is used as the name of the definition.
- **annotation-prefix** - Default values are represented using an annotation attribute `prefix:defaultValue` where prefix is the specified value and is bound to `http://relaxng.org/ns/compatibility/annotations/1.0` as defined by the RELAX NG DTD Compatibility Committee Specification. By default, the conversion engine will use a for prefix unless that conflicts with a prefix used in the DTD.
- **inline-attlist** - Instructs the application not to generate definitions for attribute list declarations, but instead move attributes declared in attribute list declarations into the definitions generated for element declarations. This is the default behavior when the output language is XSD.
- **strict-any** - Preserves the exact semantics of *ANY* content models by using an explicit choice of references to all declared elements. By default, the conversion engine uses a wildcard that allows any element
- **generate-start** - Specifies whether or not the conversion engine should generate a start element. DTD's do not indicate what elements are allowed as document elements. The conversion engine assumes that all elements that are defined but never referenced are allowed as document elements.
- **xmlns mappings** table - Each row specifies the prefix used for a namespace in the input schema.

W3C XML Schema Output section

This section is available if you select **W3C XML Schema** for the output.

- **disable-abstract-elements** - Disables the use of abstract elements and substitution groups in the generated XML Schema. This can also be controlled using an annotation attribute.
- **any-process-contents** - One of the values: strict, lax, skip. Specifies the value for the `processContents` attribute of any elements. The default is skip (corresponding to RELAX NG semantics) unless the input format is DTD, in which case the default is strict (corresponding to DTD semantics).
- **any-attribute-process-contents** - Specifies the value for the `processContents` attribute of `anyAttribute` elements. The default is skip (corresponding to RELAX NG semantics).

Converting Database to XML Schema

Oxygen XML Editor plugin includes a tool that allows you to create an XML Schema from the structure of a database.

To convert a database structure to an XML Schema, use the following procedure:

1. Select the **Convert DB Structure to XML Schema** action from the **Tools** menu.

   Result: The **Convert DB Structure to XML Schema** dialog box is opened and your current database connections are displayed in the **Connections** section.
2. If the database source is not listed, click the **Configure Database Sources** button to open the **Data Sources** preferences page where you can configure data sources and connections.
3. In the **Format for generated schema** section, select one of the following formats:

   - **Flat schema** - A flat structure that resembles a tree-like view of the database without references to elements.

- **Hierarchical schema** - Display the table dependencies visually, in a type of tree view where dependent tables are shown as indented child elements in the content model. Select this option if you want to configure the database columns of the tables to be converted.

4. Click **Connect**.

   Result: The database structure is listed in the **Select database tables** section according to the format you chose.
5. Select the database tables that you want to be included in the XML Schema.
6. If you selected **Hierarchical schema** for the format, you can configure the database columns.
   a. Select the database column you want to configure.
   b. In the **Criterion** section you can choose to convert the selected database column as an **Element**, **Attribute**, or to be **Skipped** in the resulting XML Schema.
   c. You can also change the name of the selected database column by changing it in the **Name** text field.
7. Click **Generate XML Schema**.

Result: The database structure is converted to an XML Schema and it is opened for viewing and editing.

Flatten an XML Schema

You can organize an XML schema linked by `xs:include` and `xs:import` statements on several levels. In some cases, working on such a schema as if it were a single file is more convenient than working on multiple files separately. The **Flatten Schema** operation allows you to flatten an entire hierarchy of XML schemas. Starting with the main XML schema, Oxygen XML Editor plugin calculates its hierarchy by processing the `xs:include` and `xs:import` statements.

The **Flatten Schema** action is available from the **Refactoring** submenu in the contextual menu in **Text** mode. The action opens the **Flatten Schema** dialog box that allows you to configure the operation.

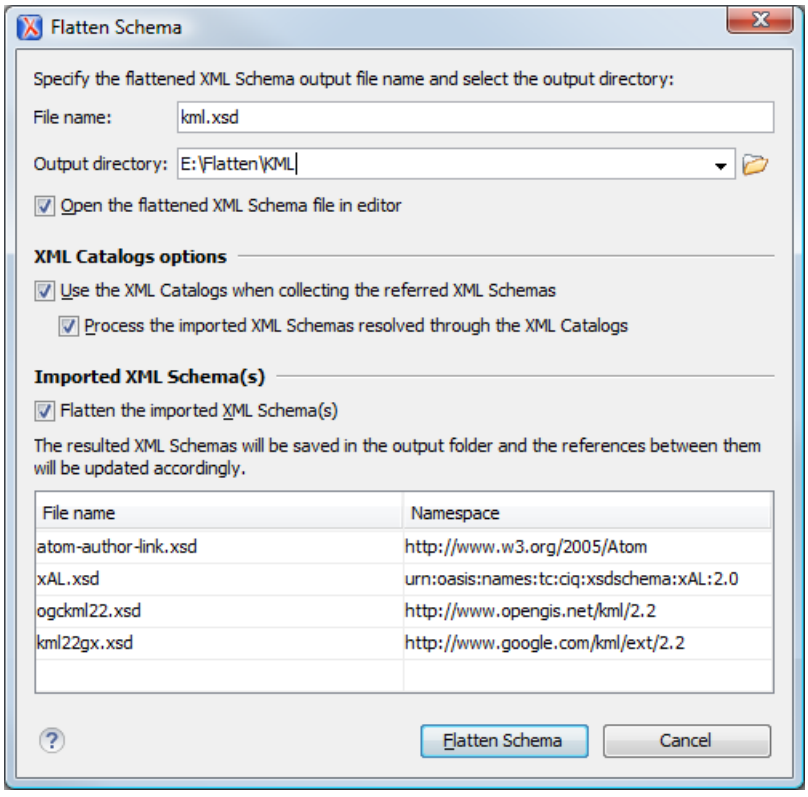


Figure 465: Flatten Schema Dialog Box

For the main schema file and for each imported schema, a new flattened schema is generated in the specified output folder. These schemas have the same name as the original ones.

Note: If necessary, the operation renames the resulted schemas to avoid duplicated file names.

A flattened XML schema is obtained by recursively adding the components of the included schemas into the main one. This means Oxygen XML Editor plugin replaces the `xs:include`, `xs:redefine`, and `xs:override` elements with the ones coming from the included files.

Options in the Flatten Schema Dialog Box

The following options are available in the **Flatten Schema** dialog box:

File name

The name of the output file.

Output directory

The path of the output directory where the flattened schema file will be saved.

Open the flattened XML Schema file in editor

Opens the main flattened schema in the editing area after the operation completes.

Use the XML Catalogs when collecting the referenced XML Schemas

Enables the imported and included schemas to be resolved through the available *XML Catalogs*.

Note: Changing this option triggers the recalculation of the dependencies graph for the main schema.

Process the imported XML Schemas resolved through the XML Catalogs

Specifies whether or not the imported schemas that were resolved through an *XML Catalog* are also processed.

Flatten the imported XML Schema(s)

Specifies whether or not the imported schemas are flattened.

Note: For the schemas skipped by the flatten operation, no files are created in the output folder and the corresponding import statements remain unchanged.

Flatten Schema from the Command Line

The **Flatten Schema** tool can be also ran from command line by using the following command:

- `flattenSchema.bat` on Windows
- `sh flattenSchema.sh` on OS X and Linux

The command line accepts the following parameters:

- `-in:inputSchemaURL` - The input schema URL.
- `-outDir:outputDirectory` - The directory where the flattened schemas should be saved.
- `-flattenImports:<boolean_value>` - Controls whether or not the imported XML Schemas should be flattened. The default value `true`.
- `-useCatalogs:<boolean_value>` - Controls if the references to other XML Schemas should be resolved through the available *XML Catalogs*. The default value `false`.
- `-flattenCatalogResolvedImports:<boolean_value>` - Controls whether or not the imported schemas that were resolved through the *XML Catalogs* should be flattened. The default value is `true`.

  Note: This option is used only when `-useCatalogs` is set to `true`.
- `-verbose` - Provides information about the current flatten XML Schema operation.
- `--help | -help | --h | -h` - Prints the available parameters for the operation.

Example: Command Line Example for Windows

```
flattenSchema.bat -in:http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd
   -outDir:mySchemas/flattened/xhtml -flattenImports:true -useCatalogs:true
      -flattenCatalogResolvedImports:true -verbose
```

Example: Command Line Example for OS X

```
sh flattenSchema.sh -in:http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd
    -outDir:mySchemas/flattened/xhtml -flattenImports:true -useCatalogs:true
       -flattenCatalogResolvedImports:true -verbose
```

Example: Command Line Example for Unix/Linux

```
sh flattenSchema.sh -in:http://www.w3.org/MarkUp/SCHEMA/xhtml11.xsd
     -outDir:mySchemas/flattened/xhtml -flattenImports:true -useCatalogs:true
        -flattenCatalogResolvedImports:true -verbose
```

XML Schema Regular Expressions Builder

The XML Schema regular expressions builder allows you to test regular expressions on a fragment of text as they are applied to an XML instance document. Start the tool by selecting **XML Schema Regular Expressions Builder** from the **XML Tools** menu.

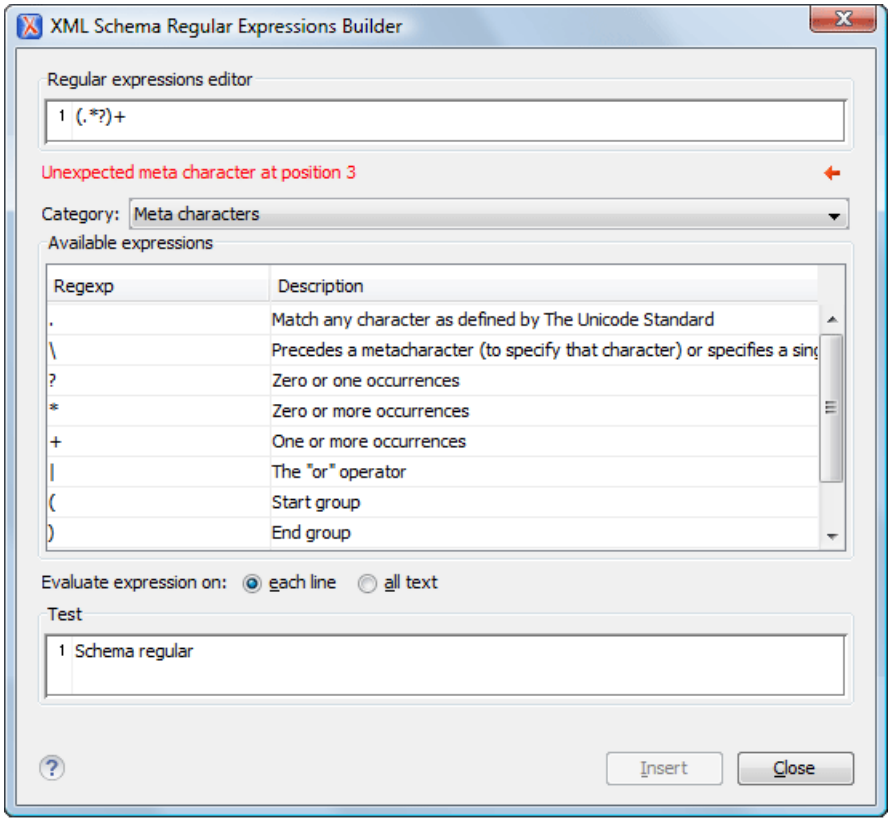


Figure 466: XML Schema Regular Expressions Builder Dialog Box

The dialog box contains the following:

Regular expressions editor

Allows you to edit the regular expression to be tested and used. Content completion is available and presents a list with all the predefined expressions. It is triggered by pressing **Ctrl + Space (Command + Space on OS X)**.

Error display area

If the edited regular expression is incorrect, an error message will be displayed here. The message contains the description and the exact location of the error. Also, clicking the quick navigation button (←) highlights the error inside the regular expression.

Category

You can choose from several categories of predefined expressions. The selected category influences the displayed expressions in the **Available expressions** table.

Available expressions

This table includes the available regular expressions and a short description for each of them. The set of expressions depends on the category selected in the previous **Category** combo box. You can add an expression in the **Regular expressions editor** by double-clicking the expression row in the table. You will notice that in the case of **Character categories** and **Block names**, the expressions are also listed in complementary format.

Evaluate expression on

You can choose between two options:

- **Evaluate expression on each line** - The edited expression will be applied on each line in the **Test** area.
- **Evaluate expression on all text** - The edited expression will be applied on the whole text.

Test

A text editor that allows you to enter a text sample for which the regular expression will be applied. All matches of the edited regular expression will be highlighted.

After editing and testing your regular expression you can insert it in the current editor. The **Insert** button will become active when an editor is opened in the background and there is an expression in the **Regular expressions editor**.

The regular expression builder cannot be used to insert regular expressions in the **Grid** mode or schema **Design** mode. Accordingly, the **Insert** button will be not available if the current document is edited in these modes.

Note: Some regular expressions may indefinitely block the Java Regular Expressions engine. If the execution of the regular expression does not end in about five seconds, the application displays a dialog box that allows you to interrupt the operation.

XML Schema 1.1

Oxygen XML Editor plugin offers full support for XML Schema 1.1, including:

- XML Documents Validation and Content Completion based on XML Schema 1.1.
- XML Schema 1.1 Validation and Content Completion.
- Editing XML Schema 1.1 files in the Schema **Design** mode.
- The Flatten Schema action.
- Resource Hierarchy/Dependencies and Refactoring Actions.
- *Master files*.
- Generating Documentation for XML Schema 1.1.
- Support for generating XML instances based on XML Schema.
- Support for validating XML documents with an NVDL schema that contains an XML Schema 1.1 validation step.

  Note: To enable XML Schema 1.1 validation in NVDL, you need to pass the following option to the validation engine to specify the schema version: `http://www.thaiopensource.com/validate/xsd-version` (the possible values are `1.0` or `1.1`.

  Tip: To enable the full XPath expression in assertions and type alternatives, you need to set the `http://www.thaiopensource.com/validate/full-xpath` option.

XML Schema 1.1 is a superset of XML Schema 1.0, that offers lots of new powerful capabilities.

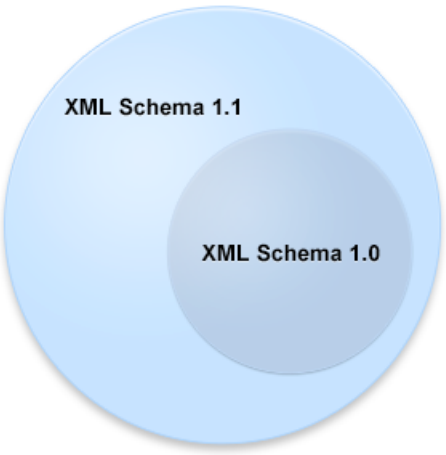


Figure 467: XML Schema 1.1

The significant new features in XSD 1.1 are:

- **Assertions** - Support to define assertions against the document content using XPath 2.0 expressions (an idea borrowed from Schematron).
- **Conditional type assignment** - The ability to select the type of schema an element is validated against, based on the values of the attribute of the element.
- **Open content** - Content models can use the `openContent` element to specify content models with *open content*. These content models allow elements not explicitly mentioned in the content model to appear in the document instance. It is as if wildcards were automatically inserted at appropriate points within the content model. A default may be set that causes all content models to be open unless specified otherwise.

To see the complete list with changes since version 1.0, go to http://www.w3.org/TR/xmlschema11-1/#ch_specs.

XML Schema 1.1 is intended to be mostly compatible with XML Schema 1.0 and to have approximately the same scope. It also addresses bug fixes and brings improvements that are consistent with the constraints on scope and compatibility.

Note: An XML document conforming to a 1.0 schema can be validated using a 1.1 validator, but an XML document conforming to a 1.1 schema may not validate using a 1.0 validator.

If you are constrained to use XML Schema 1.0 (for example, if you develop schemas for a server that uses an XML Schema 1.0 validator that cannot be updated), change the default XML Schema version to 1.0. If you keep the default XML Schema version set to 1.1, the *Content Completion Assistant* presents XML Schema 1.1 elements that you can insert accidentally in an 1.0 XML Schema. So even if you make a document invalid conforming with XML Schema 1.0, the validation process does not signal any issues.

To change the default XML Schema version, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema**.

For more information about the XML Schema 1.1 support, watch our video demonstration:

https://www.youtube.com/embed/DAkrubQNm0w

Related Information:
Setting the XML Schema Version on page 720

Setting the XML Schema Version

Oxygen XML Editor plugin lets you set the version of the XML Schema you are editing either in the **XML Schema** preferences page, or through the versioning attributes. If you want to use the versioning attributes, set the *minVersion* and *maxVersion* attributes, from the *http://www.w3.org/2007/XMLSchema-versioning* namespace, on the *schema* root element.

Note: The versioning attributes take priority over the XML Schema version defined in the preferences page.

Table 64: Using the *minVersion* and *maxVersion* Attributes to Set the XML Schema Version

Versioning Attributes	XML Schema Version
minVersion = "1.0" **maxVersion** = "1.1"	1.0
minVersion = "1.1"	1.1
minVersion = "1.0" **maxVersion** = greater than "1.1"	The XML Schema version defined in the **XML Schema** preferences page
Not set in the XML Schema document	The XML Schema version defined in the **XML Schema** preferences page

To change the XML Schema version of the current document, use the **Change XML Schema version** action from the contextual menu. This is available both in the **Text** mode, and in the **Design** mode and opens the **Change XML Schema version** dialog box. The following options are available:

- **XML Schema 1.0** - Inserts the *minVersion* and *maxVersion* attributes on the *schema* element and gives them the values "1.0" and "1.1" respectively. Also, the namespace declaration (*xmlns:vc=http://www.w3.org/2007/XMLSchema-versioning*) is inserted automatically if it does not exist.
- **XML Schema 1.1** - Inserts the *minVersion* attribute on the *schema* element and gives it the value "1.1". Also, removes the *maxVersion* attribute if it exists and adds the versioning namespace (*xmlns:vc=http://www.w3.org/2007/XMLSchema-versioning*) if it is not declared.
- **Default XML Schema version** - Removes the *minVersion* and *maxVersion* attributes from the *schema* element. The default schema version, defined in the **XML Schema** preferences page, is used.

Note: The **Change XML Schema version** action is also available in the informative panel presented at the top of the edited XML Schema. If you close this panel, it will no longer appear until you restore Oxygen XML Editor plugin to its default options.

Oxygen XML Editor plugin automatically uses the version set through the versioning attributes, or the default version if the versioning attributes are not declared, when proposing content completion elements and validating an XML Schema. Also, the XML instance validation against an XML Schema is aware of the versioning attributes defined in the XML Schema.

When you generate sample XML files from an XML Schema, Oxygen XML Editor plugin takes into account the *minVersion* and *maxVersion* attributes defined in the XML Schema.

Related Information:

XML Schema 1.1 on page 719

Editing XQuery Documents

XQuery is the query language for XML and is officially defined by a W3C Recommendation document. The many benefits of XQuery include:

- XQuery allows you to work in one common model no matter what type of data you are working with: relational, XML, or object data.
- XQuery is ideal for queries that must represent results as XML, to query XML stored inside or outside the database, and to span relational and XML sources.
- XQuery allows you to create many different types of XML representations of the same data.
- XQuery allows you to query both relational sources and XML sources, and create one XML result.

Related Information:

XQuery and Databases on page 1186

XQuery Validation

With Oxygen XML Editor plugin, you can validate your documents before using them in your transformation scenarios. The validation uses the Saxon 9.8.0.8 PE, EE, or HE processor, or you can use some database engines (such as MarkLogic or eXist) if you installed them. Any other XQuery processor that offers an XQJ API implementation can also be used. This is in conformance with the XQuery Working Draft. The processor is used in two cases: validation of the expression and execution. Although the execution implies a validation, it is faster to check the expression syntactically, without executing it. The errors that occurred in the document are presented in the messages view at the bottom of editor window, with a full description message. As with all error messages, if you click an entry, the line where the error appeared is highlighted.

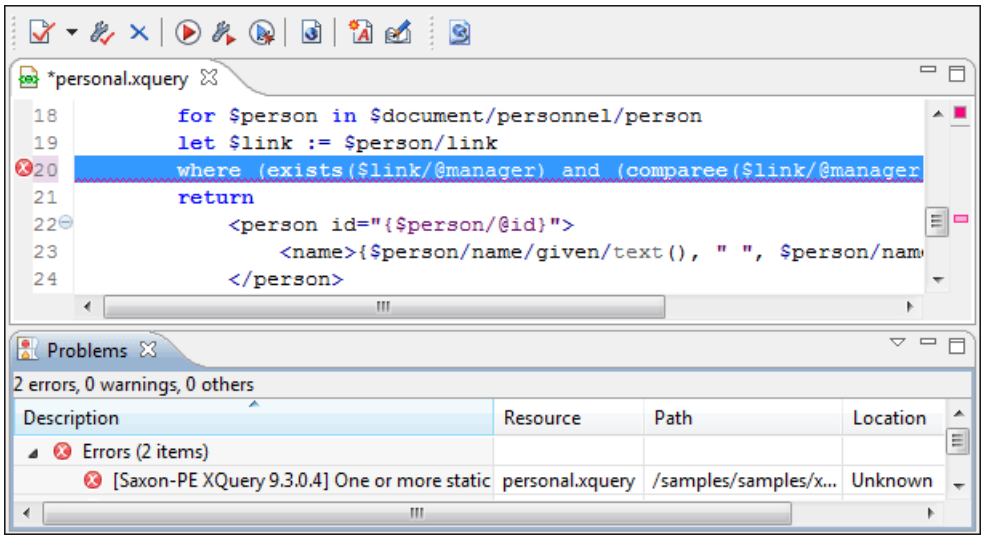


Figure 468: XQuery Validation

Note: If you choose a processor that does not support XQuery validation, Oxygen XML Editor plugin displays a warning when trying to validate.

When you open an XQuery document from a connection that supports validation (for example, MarkLogic, or eXist), by default Oxygen XML Editor plugin uses this connection for validation. If you open an XQuery file using a MarkLogic connection, the validation resolves imports better.

Content Completion in XQuery

Oxygen XML Editor plugin provides content completion for keywords and all known XQuery functions and operators. The *Content Completion Assistant* can be manually activated with the **(Ctrl (Meta on Mac OS)+Space)** shortcut. The functions and operators are presented together with a description of the parameters and functionality, depending on the validation or transformation engine.

For some supported database engines such as MarkLogic, eXist, and Berkeley DB, the content completion list offers the specific XQuery functions implemented by that engine. This feature is available when the XQuery file has an associated transformation scenario that uses one of these database engines or the XQuery validation engine is set to one of them via a validation scenario or in the XQuery Preferences page. For more information about the support for working with XQuery with regards to databases, see XQuery and Databases on page 1186.

The extension functions included in the Saxon engine are available on content completion if one of the following conditions are true:

- The edited file has a transformation scenario associated that uses as transformation engine Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE.
- The edited file has a validation scenario associated that use as validation engine Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE.
- The validation engine specified in Preferences is Saxon 9.8.0.8 PE or Saxon 9.8.0.8 EE.

If the Saxon namespace (http://saxon.sf.net) is mapped to a prefix, the functions are presented using this prefix. Otherwise, the default prefix for the Saxon namespace (`saxon`) is used.

If you want to use a function from a namespace mapped to a prefix, just type that prefix and the content completion displays all the XQuery functions from that namespace. When the default namespace is mapped to a prefix, the XQuery functions from this namespace offered by content completion are also prefixed. Otherwise, only the function name being used.

The content completion pop-up window presents all the variables and functions from both the edited XQuery file and its imports.

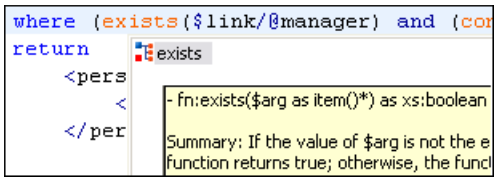


Figure 469: XQuery Content Completion

Syntax Highlighting in XQuery

Oxygen XML Editor plugin supports syntax highlighting in XQuery documents to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for XQuery files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XQuery/XPath** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.

You can see the effects of your changes in the **Preview** pane.

Related Information:

Customize Syntax Highlight colors on page 92

Formatting and Indenting XQuery Documents

Editing XQuery documents may lead to large chunks of content that are not easily readable by human audience. Also, each developer may have a particular way of writing XQuery code. Oxygen XML Editor plugin assists you in maintaining a consistent code writing style with the **Format and Indent** action that is available in the **Document** > **Source** menu and also on the toolbar..

The **Format and Indent** action achieves this by performing the following steps:

- Manages whitespaces, by collapsing or inserting space characters where needed.
- Formats complex expressions on multiple, more readable lines by properly indenting each of them. The amount of whitespaces that form an indent unit is controlled through one of the **Indent with tabs** and **Indent size** options from the **Format Preferences** page.

Note: These operations can be performed only if your XQuery document conforms with W3C XQuery 1.0, XQuery Update Facility 1.0, and XQuery 3.0 specifications. If the *Format and Indent* operation fails, the document is left unaltered and an error message is presented in the **Results** view.

Folding in XQuery Documents

In a large XQuery document, the instructions enclosed in the '{' and '}' characters can be collapsed so that only the needed instructions remain in focus. The same folding features available for XML documents are also available in XQuery documents.

```
let $minRating := min($review/reviews/review[@movie-id = $movie-id]/rating)
return
 <movie id="{$movie/@id}">
  {$movie/title}
  {$movie/year}
 <avgRating>
      {
         if ($avgRating) then $avgRating else "not rated"
      }
 </avgRating>
  <maxRating>
      <value>
        {..
      </value>
      {..
  </maxRating>
  <minRating>
      <value>
        {..
      </value>
      {..
  </minRating>
 </movie>
```

Figure 470: Folding in XQuery Documents

There is available the action **Go to Matching Bracket** **Ctrl + Shift + G** on contextual menu of XQuery editor for going to matching character when cursor is located at '{' character or '}' character. It helps for finding quickly matching character of current *folding element*.

XQuery Outline View

The XQuery document structure is presented in the **Outline** view. The outline tree presents the list of all the components (namespaces, imports, variables, and functions) from both the edited XQuery file and its imports and it allows quick access to components. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

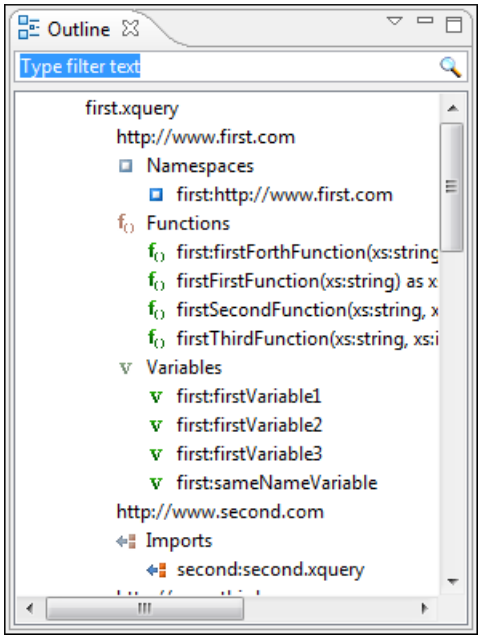


Figure 471: XQuery Outline View

The following actions are available in the **View menu** on the **Outline** view action bar:

Selection update on cursor move

Controls the synchronization between **Outline** view and source document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes performed in the XQuery editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

Sort

Allows you to alphabetically sort the XQuery components.

Show all components

Displays all collected components starting from the current file. This option is set by default.

Show only local components

Displays the components defined in the current file only.

Group by location/namespace/type

Allows you to group the components by location, namespace, and type. When grouping by namespace, the main XQuery module namespace is presented first in the **Outline** view.

If you know the component name, you can search it in the **Outline** view by typing its name in the filter text field from the top of the view or directly on the tree structure. When you type the component name in the filter text field you can switch to the tree structure using the arrow keys of the keyboard, **(Enter)**, **(Tab)**, **(Shift-Tab)**. To switch from tree structure to the filter text field, you can use **(Tab)**, **(Shift-Tab)**.

Tip: The search filter is case insensitive. The following wildcards are accepted:

- ***** - any string
- **?** - any character
- **,** - patterns separator

If no wildcards are specified, the string to search is used as a partial match.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

XQuery Builder View

The **XPath/XQuery Builder** view allows you to compose complex XQuery expressions and execute them over the currently edited XML document. You can use the `doc( )` function to specify the source file for which the expressions are executed. When you connect to a database, the expressions are executed over that database. If you are using the **XPath/XQuery Builder** view and the current file is an XSLT document, Oxygen XML Editor plugin executes the expressions over the XML document in the associated scenario.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the view contains the following actions:

XPath version chooser drop-down menu

A drop-down menu that allows you to select the type of the expression you want to execute. You can choose between:

- XPath 1.0 (Xerces-driven)
- XPath 2.0, XPath 2.0SA, XPath 3.0, XPath 3.0SA, Saxon-HE XQuery, Saxon-PE XQuery, or Saxon-EE XQuery (all of them are Saxon-driven)
- Custom connection to XML databases that can execute XQuery expressions

  Note: The results returned by XPath 2.0 SA and XPath 3.0 SA have a location limited to the line number of the start element (there are no column information and no end specified).

  Note: Oxygen XML Editor plugin uses Saxon to execute XPath 3.0 expressions. Since Saxon implements a part of the 3.0 functions, when using a function that is not implemented, Oxygen XML Editor plugin returns a compilation error.

Execute XPath button

Use this button to start the execution of the XPath or XQuery expression you are editing. The result of the execution is displayed in the **Results** view.

Favorites button

Allows you to save certain expressions that you can later reuse. To add an expression as a favorite, press the star button and enter a name for it. The star turns yellow to confirm that the expression was saved. Expand the drop-down menu next to the star button to see all your favorites. Oxygen XML Editor plugin automatically groups favorites in folders named after the method of execution.

History drop-down menu

Keeps a list of the last 15 executed XPath or XQuery expressions. Use the **Clear history** action from the bottom of the list to remove them.

Settings drop-down menu

Contains the following three options:

- **Update on cursor move** - When selected and you navigate through a document, the XPath expression corresponding to the XML node at the current cursor position is displayed.
- **Evaluate as you type** - When you select this option, the XPath expression you are composing is evaluated in real time.

  Note: This option and the automatic validation are disabled when the scope is other than **Current file**.
- **Options** - Opens the Preferences page of the currently selected processing engine.

XPath scope menu

Oxygen XML Editor plugin allows you to define a scope for which the XPath operation will be executed. You can choose where the XPath expression will be executed:

- **Current file** - Current selected file only.
- **Enclosing project** - All the files of the project that encloses the current edited file.
- **Workspace selected files** - The files selected in the workspace. The files are collected from the last selected resource provider view (**Navigator**, **Project Explorer** or **Package Explorer**).
- **All opened files** - All files opened in the application.
- **Current DITA Map hierarchy** - All resources referenced in the currently selected *DITA map*, opened in the **DITA Maps Manager** view.
- **Opened archive** - Files open in the **Archive Browser** view.
- **Working sets** - The selected *working sets*.

At the bottom of the scope menu the following scope configuration actions are available:

- **Configure XPath working sets** - Allows you to configure and manage collections of files and folders, encapsulated in logical containers called *working sets*.
- **XPath file filter** - You can filter the files from the selected scope for which the XPath expression will be executed. By default, the XPath expression will be executed only on XML files, but you can also define a set of patterns that will filter out files from the current scope.

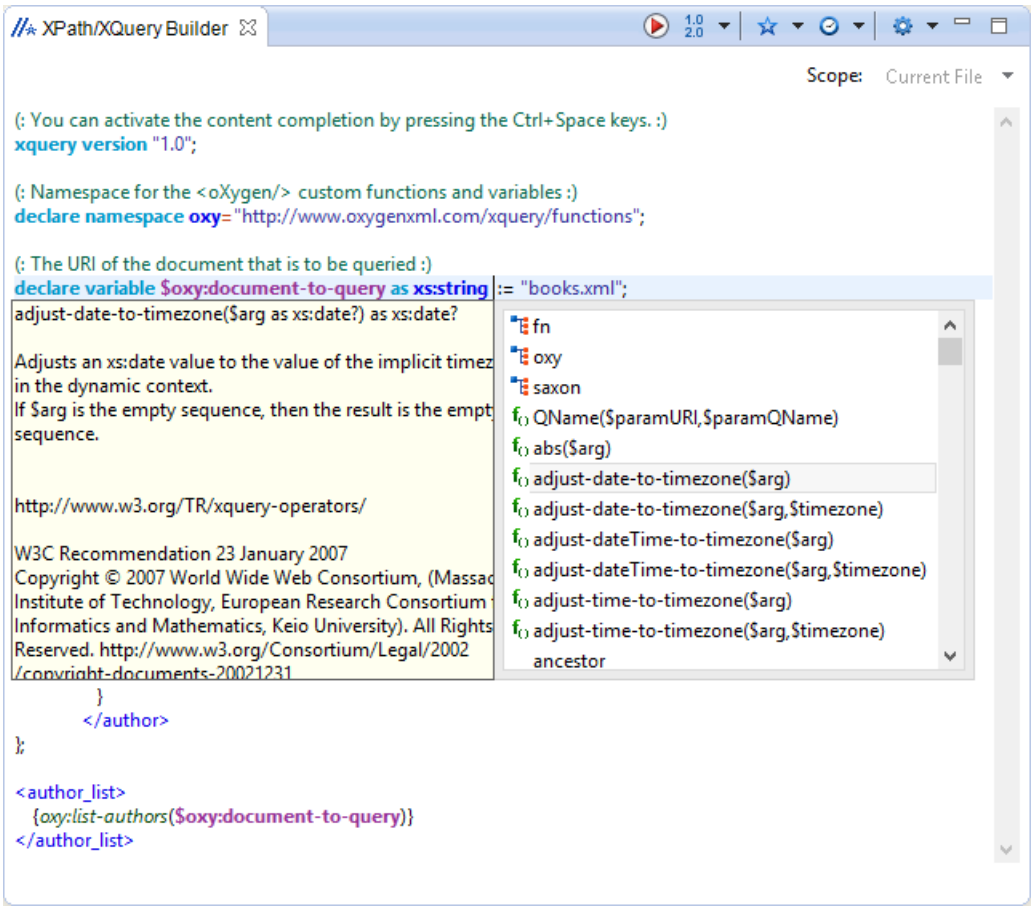


Figure 472: XPath/XQuery Builder View

When you hover your cursor over the version icon 1.0 2.0, a tooltip is displayed to let you know what engine Oxygen XML Editor plugin is currently using.

While you edit an XPath or XQuery expression, Oxygen XML Editor plugin assists you with the following features:

- *Content Completion Assistant* - It offers context-dependent proposals and takes into account the cursor position in the document you are editing. The set of functions proposed by the *Content Completion Assistant* also depends on the engine version. Select the engine version from the drop-down menu available in the toolbar.
- Syntax Highlighting - Allows you to identify the components of an expression. To customize the colors of the components of the expression, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**.
- Automatic validation of the expression as you type.

  Note: When you type invalid syntax a red serrated line underlines the invalid fragments.
- Function signature and documentation balloon, when the cursor is located inside a function.

XSLT/XQuery Input View

The structure of the XML document associated to the edited XSLT stylesheet, or the structure of the source documents of the edited XQuery is displayed in a tree form in a view called the **XSLT/XQuery Input** view. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu. The tree nodes represent the elements of the documents.

XSLT

If you click a node in the **XSLT/XQuery Input** view, the corresponding template from the stylesheet is highlighted. A node can be dragged from this view and dropped in the editor area for quickly inserting `xsl:template`, `xsl:for-each`, or other XSLT elements that have the `match/select/test` attribute already completed. The

value of the attribute is the correct XPath expression that refers to the dragged tree node. This value is based on the current editing context of the drop spot.

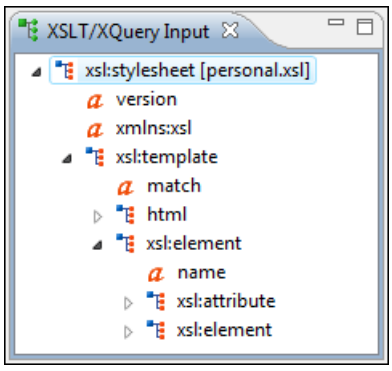


Figure 473: XSLT Input View

XSLT Example:

For the following XML document:

```
<personnel>
    <person id="Big.Boss">
        <name>
            <family>Boss</family>
            <given>Big</given>
        </name>
        <email>chief@oxygenxml.com</email>
        <link subordinates="one.worker"/>
    </person>
    <person id="one.worker">
        <name>
            <family>Worker</family>
            <given>One</given>
        </name>
        <email>one@oxygenxml.com</email>
        <link manager="Big.Boss"/>
    </person>
</personnel>
```

and the following XSLT stylesheet:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
        version="2.0">
    <xsl:template match="personnel">
        <xsl:for-each select="*">

        </xsl:for-each>
    </xsl:template>
</xsl:stylesheet>
```

if you drag the `given` element and drop it inside the `xsl:for-each` element, the following pop-up menu is displayed:

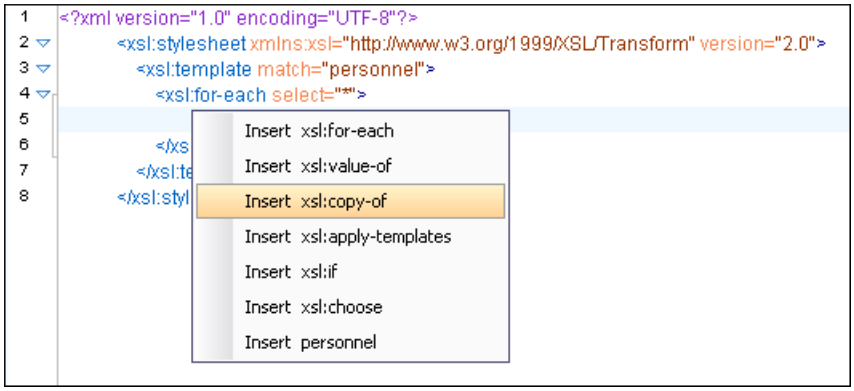


Figure 474: XSLT Input Drag and Drop Pop-up Menu

If you select **Insert xsl:copy-of** (for example), the resulting document will look like this:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0">
    <xsl:template match="personnel">
        <xsl:for-each select="*">
            <xsl:copy-of  select="name/given"/>
        </xsl:for-each>
    </xsl:template>
</xsl:stylesheet>
```

Figure 475: XSLT Input Drag and Drop Result

XQuery

You can also use the **XSLT/XQuery Input** view to drag and drop a node into the editing area to quickly insert XQuery expressions.

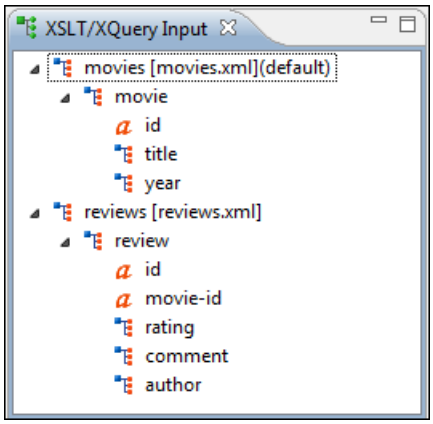


Figure 476: XQuery Input View

XQuery Example:

For the following XML documents:

```
<movies>
<movie id="1">
<title>The Green Mile</title>
<year>1999</year>
</movie>
<movie id="2">
<title>Taxi Driver</title>
<year>1976</year>
</movie>
</movies>
```

```
<reviews>
<review id="100" movie-id="1">
<rating>5</rating>
<comment>It is made after a great Stephen King book.
</comment>
<author>Paul</author>
</review>
<review id="101" movie-id="1">
<rating>3</rating>
<comment>Tom Hanks does a really nice acting.</comment>
<author>Beatrice</author>
</review>
<review id="104" movie-id="2">
<rating>4</rating>
<comment>Robert De Niro is my favorite actor.</comment>
<author>Maria</author>
</review>
</reviews>
```

and the following XQuery:

```
let $review := doc("reviews.xml")
for $movie in doc("movies.xml")/movies/movie
let $movie-id := $movie/@id
return
```

```
                    <movie id="{$movie/@id}">
                    {$movie/title}
                    {$movie/year}
                    <maxRating>
                    {

                    }
                    </maxRating>
                    </movie>
```

If you drag the **review** element and drop it between the braces, the following pop-up menu is displayed:

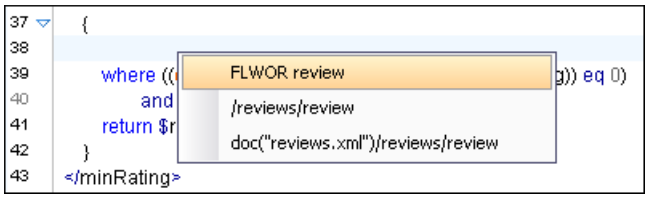


Figure 477: XQuery Input Drag and Drop Pop-up Menu

Select **FLWOR review**, the resulting document will look like this:

```
37      {
38          for $review in doc("reviews.xml")/reviews/review
39          return
40          where ((compare($rev/rating/text(), string($minRating)) eq 0)
41                  and ($rev/@movie-id = $movie/@id))
42          return $rev/author
43      }
```

Figure 478: XQuery Input Drag and Drop Result

Generating HTML Documentation for an XQuery Document

To generate HTML documentation for an XQuery document, use the **XQuery Documentation** dialog box. It is opened with the **XQuery Documentation** action that is available from the **XML Tools** > **Generate Documentation** menu or from the **Generate XQuery Documentation** action from the contextual menu of the **Navigator** view.

The dialog box allows you to configure a set of parameters for the process of generating the HTML documentation.

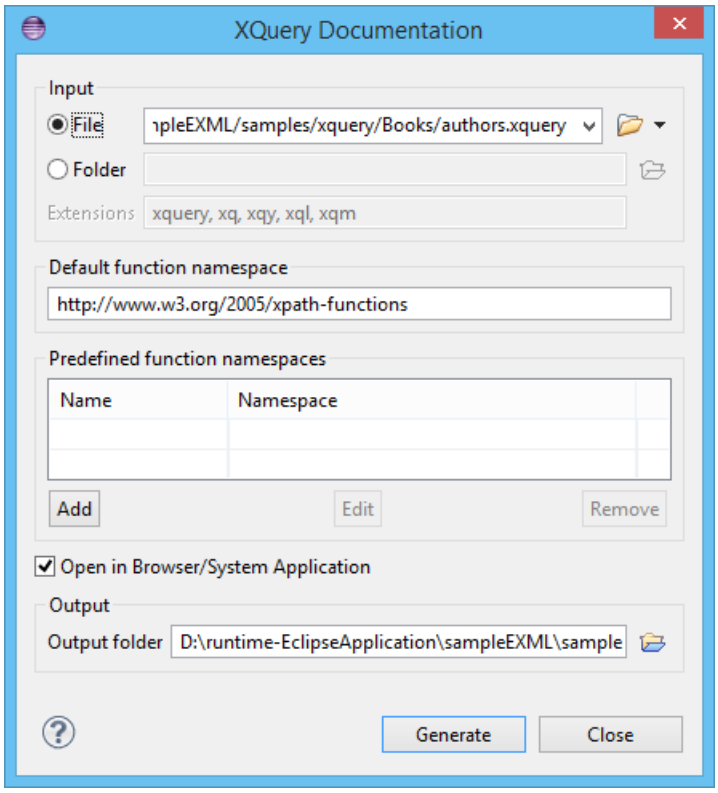


Figure 479: XQuery Documentation Dialog Box

The following options are available:

- **Input** - The full path to the XQuery file must be specified in one of the two fields in this section:
  - **URLFile** - The URL of the file in which you want to generate the documentation.
  - **Folder** - The directory that contains the files for which you want to generate the documentation. You can also specify the XQuery file extensions to be searched for in the specified directory.
- **Default function namespace** - Optional URI for the default namespace for the submitted XQuery.
- **Predefined function namespaces** - Optional, engine-dependent, predefined namespaces that the submitted XQuery refers to. They allow the conversion to generate annotation information to support the presentation component hypertext linking (only if the predefined modules have been loaded into the local xqDoc XML repository).
- **Open in Browser/System Application** - Select this option if you want the result to be opened in the system application associated with that file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.
- **Output** - Allows you to specify where the generated documentation is saved on disk.

Transforming XML Documents Using XQuery

XQuery is similar to XSL stylesheets, both being capable of transforming an XML input into another format. You specify the input URL when you define the transformation scenario. The result can be saved and opened in the associated application. You can even run a FO processor on the output of an XQuery. The transformation scenarios may be shared between many XQuery files, are exported together with the XSLT scenarios and can be managed in the **Configure Transformation Scenario** dialog box ,or in the **Scenarios** view. The transformation can be performed on the XML document specified in the **XML URL** field, or, if this field is empty, the documents referenced from the query expression. The parameters of XQuery transforms must be set in the **Parameters** dialog box. Parameters that are in a namespace must be specified using the qualified name (for example, a `param` parameter in the *http://www.oxygenxml.com/ns* namespace must be set with the name `{http://www.oxygenxml.com/ns}param`).

The transformation uses one of the Saxon 9.8.0.8 HE, Saxon 9.8.0.8 PE, Saxon 9.8.0.8 EE processors, a database connection (details can be found in the Working with Databases chapter - in the XQuery transformation section) or any XQuery processor that provides an XQJ API implementation.

The Saxon 9.8.0.8 EE processor also supports XQuery 3.0 transformations.

Related Information:

XQuery and Databases on page 1186

Display XQuery Result in Sequence View

The result of an XQuery executed on a database can be very large and sometimes only a part of the full result is needed. To avoid the long time necessary for fetching the full result, select the **Present as a sequence** option in the **Output** tab of the **Edit scenario** dialog box. This option fetches only the first chunk of the result. Clicking the **More results available** label that is displayed at the bottom of the **Sequence** view fetches the next chunk of results.

The size of a chunk can be set with the **Size limit of Sequence view** option. The **XQuery options** button from the **More results available** label provides a quick access to this option by opening the **XQuery** preferences page where the option can be modified.

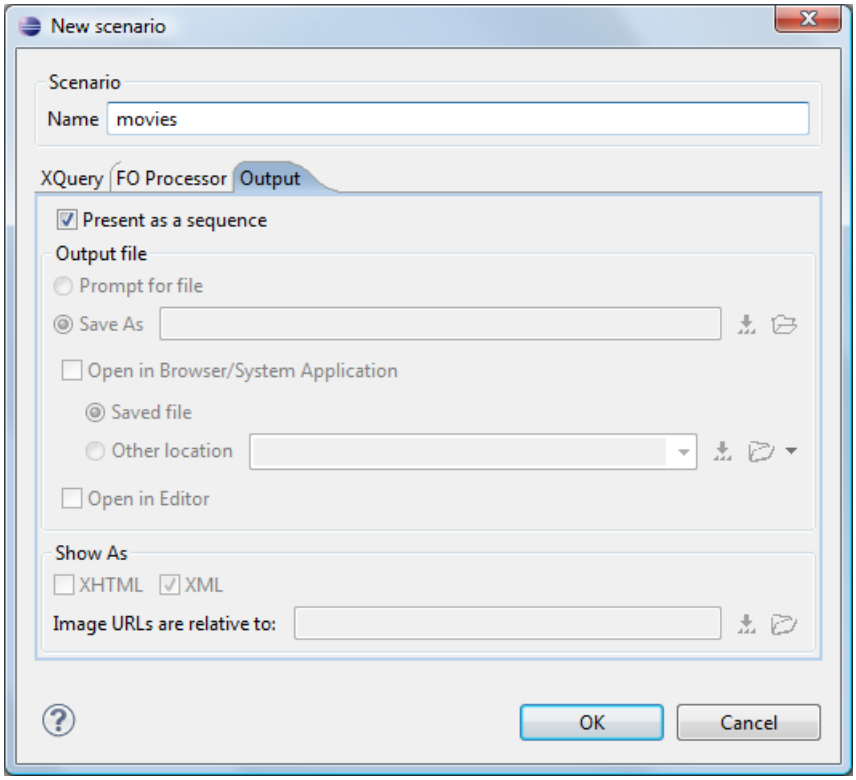


Figure 480: XQuery transformation result displayed in Sequence view

A chunk of the XQuery transformation result is displayed in the **Sequence** view.

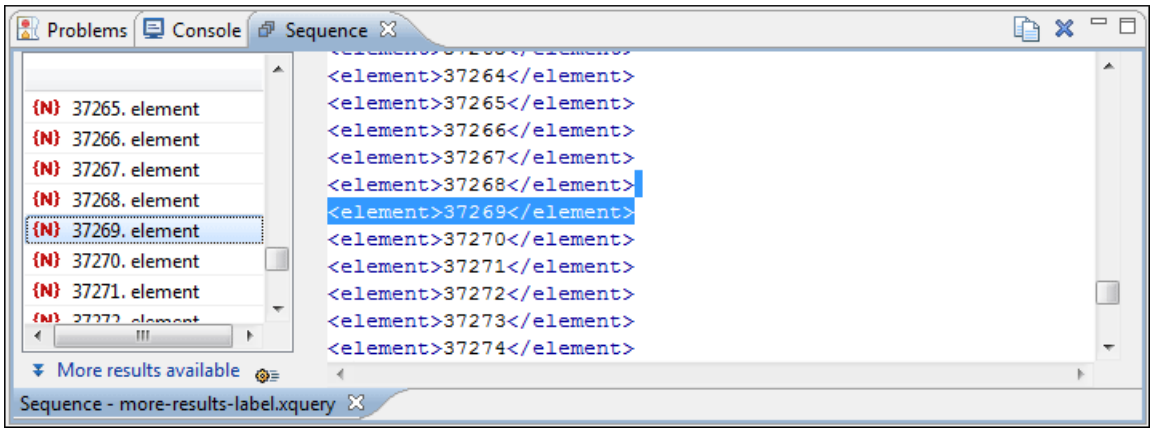


Figure 481: XQuery transformation result displayed in Sequence view

Advanced Saxon HE/PE/EE XQuery Transformation Options

The XQuery transformation scenario allows you to configure advanced options that are specific for the Saxon HE (Home Edition), PE (Professional Edition), and EE (Enterprise Edition) engines. They are the same options as those in the **Saxon HE/PE/EE** preferences page but they are configured as a specific set of transformation options for each transformation scenario, while the values set in the preferences page apply as global options. The advanced options configured in a transformation scenario override the global options defined in the preferences page.

Saxon-HE/PE/EE Options

The advanced options for Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE) are as follows:

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is used for XQuery transformation and validation scenarios.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Use linked tree model ("-tree:linked")

This option activates the linked tree model.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following advanced options are specific for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Allow calls on extension functions ("-ext")

If selected, calls on external functions are allowed. Selecting this option is recommended in an environment where untrusted stylesheets may be executed. It also disables user-defined extension elements and the writing of multiple output files, both of which carry similar security risks.

Saxon-EE Options

The advanced options that are specific for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.
- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable XQuery update ("-update:(on|off)")

This option controls whether or not XQuery update syntax is accepted. The default value is off.

Backup files updated by XQuery ("-backup:(on|off)")

If selected, backup versions for any XML files updated with an XQuery Update are generated. This option is available when the **Enable XQuery update** option is selected.

Other Options

Initializer class

Equivalent to the `-init` Saxon command-line argument. The value is the name of a user-supplied class that implements the *net.sf.saxon.lib.Initializer* interface. This initializer is called during the initialization process, and may be used to set any options required on the configuration programmatically. It is particularly useful for tasks such as registering extension functions, collations, or external object models, especially in Saxon-HE where the option cannot be set via a configuration file. Saxon only calls the initializer when running from the command line, but the same code may be invoked to perform initialization when running user application code.

Updating XML Documents using XQuery

Using the bundled Saxon 9.8.0.8 EE XQuery processor Oxygen XML Editor plugin offers support for XQuery Update 1.0. The XQuery Update Facility provides expressions that can be used to make persistent changes to instances of the XQuery 1.0 and XPath 2.0 Data Model. Thus, besides querying XML documents, you can modify them using the various insert/delete/modify/create methods available in the XQuery Update 1.0 standard.

Choose Saxon 9.8.0.8 EE as a transformer in the scenario associated with the XQuery files containing update statements and Oxygen XML Editor plugin will notify you if the update was successful.

Example: Using XQuery Update to modify a tag name in an XML file

```
rename node doc("books.xml")//publisher[1]//book[1] as "firstBook"
```

Editing WSDL Documents

WSDL is an XML format for describing network services as a set of endpoints operating on messages containing either document-oriented or procedure-oriented information. The operations and messages are described abstractly, and then bound to a concrete network protocol and message format to define an endpoint. Related concrete endpoints are combined into abstract endpoints (services).

Oxygen XML Editor plugin provides a special type of editor dedicated to WSDL documents. The WSDL editor offers support for validation, a specialized *Content Completion Assistant*, a component oriented **Outline** view, searching and refactoring operations, and support to generate documentation.

Both WSDL version 1.1 and 2.0 are supported and SOAP versions 1.1 and 1.2. That means that in the location where a SOAP extension can be inserted the *Content Completion Assistant* offers elements from both SOAP 1.1 and SOAP 1.2. Validation of SOAP requests is executed first against a SOAP 1.1 schema and then against a SOAP 1.2 schema. In addition to validation against the XSD schemas, Oxygen XML Editor plugin also checks if the WSDL file conforms with the WSDL specification (available only for WSDL 1.1 and SOAP 1.1).

In the following example you can see how the errors are reported.

Figure 482: Validating a WSDL file

For more information about the WSDL editing support in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/OS5Ucm9b8sY

Related Information:

Editing XML Documents in Text Mode on page 403

Editing WSDL Documents in the Master Files Context

Smaller interrelated modules that define a complex WSDL structure cannot be correctly edited or validated individually, due to their interdependency with other modules. Oxygen XML Editor plugin provides the support for defining the main module (or modules), allowing you to edit any of the imported/included files in the context of the larger WSDL structure.

You cat set a main WSDL document either using the *master files* support from the **Navigator** view, or using a validation scenario.

To set a *master file* using a validation scenario, add validation units that point to the main modules. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main WSDL document. In this case, it considers the current module as the main WSDL document.

The advantages of editing in the context of a *master file* include:

- Correct validation of a module in the context of a larger WSDL structure.

- *Content Completion Assistant* displays all components valid in the current context.
- The **Outline** view displays the components collected from the entire WSDL structure.

Note: When you edit an XML schema document that has a WSDL document set as master, the validation operation is performed over the master WSDL document.

For more information about editing WSDL documents in the *master files* context, watch our video demonstration:

https://www.youtube.com/embed/gn_YPD5xDCo

Validating WSDL Documents

By default, WSDL files are validated as you type. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate a WSDL document manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Content Completion Assistance in WSDL Documents

The *Content Completion Assistant* is a powerful feature that enhances the editing of WSDL documents. It helps you define WSDL components by proposing context-sensitive element names. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

Another important capability of the *Content Completion Assistant* is to propose references to the defined components when you edit attribute values. For example, when you edit the `type` attribute of a `binding` element, the *Content Completion Assistant* proposes all the defined port types. Each proposal that the *Content Completion Assistant* offers is accompanied by a documentation hint.

Note: XML schema specific elements and attributes are offered when the current editing context is the internal XML schema of a WSDL document.

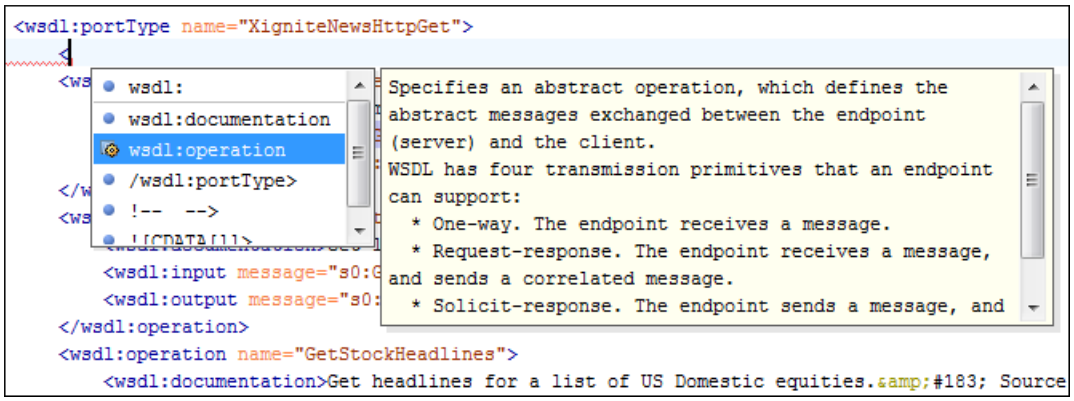


Figure 483: WSDL Content Completion Assistant

Note: If you are using the concept of *master files* to import/include modules, the *Content Completion Assistant* collects its components starting from the *master files*. The *master files* can be defined in the project or in the associated validation scenario. For more information about the *Master Files* support in Oxygen XML Editor plugin, see Defining Master Files at Project Level.

Namespace prefixes in the scope of the current context are presented at the top of the content completion assistance window to speed up the insertion into the document of prefixed elements.

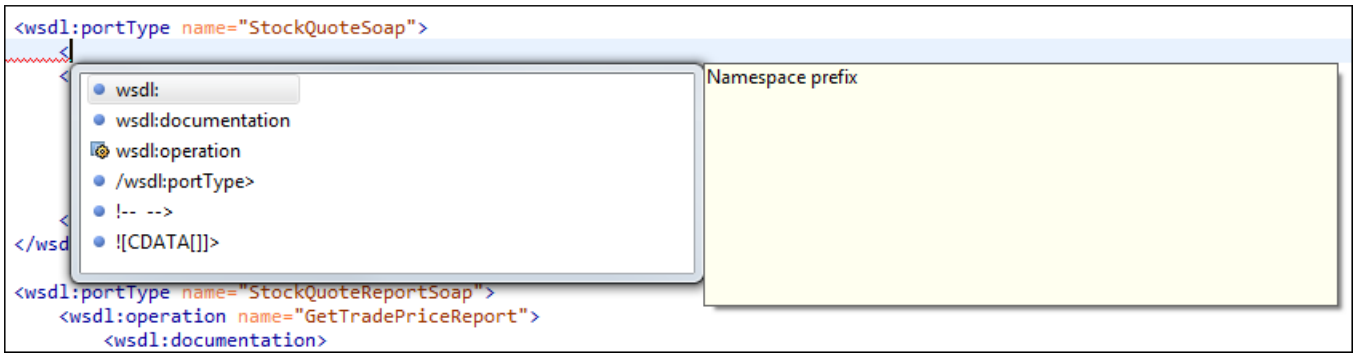


Figure 484: Namespace Prefixes in the Content Completion Assistant

For the common namespaces, such as XML Schema namespace (*http://www.w3.org/2001/XMLSchema*) or SOAP namespace (*http://schemas.xmlsoap.org/wsdl/soap/*), Oxygen XML Editor plugin provides an easy mode to declare them by proposing a prefix for these namespaces.

WSDL Syntax Highlighting

Oxygen XML Editor plugin supports syntax highlighting in WSDL documents to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for WSDL files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Customize Syntax Highlight colors on page 92

WSDL Outline View

The **Outline** view for WSDL documents displays the list of all the components (services, bindings, port types and so on) of the currently open WSDL document along with the components of its imports.

If you use the **Master Files** support, the **Outline** view collects the components of a WSDL document starting from the *master files* of the current document.

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

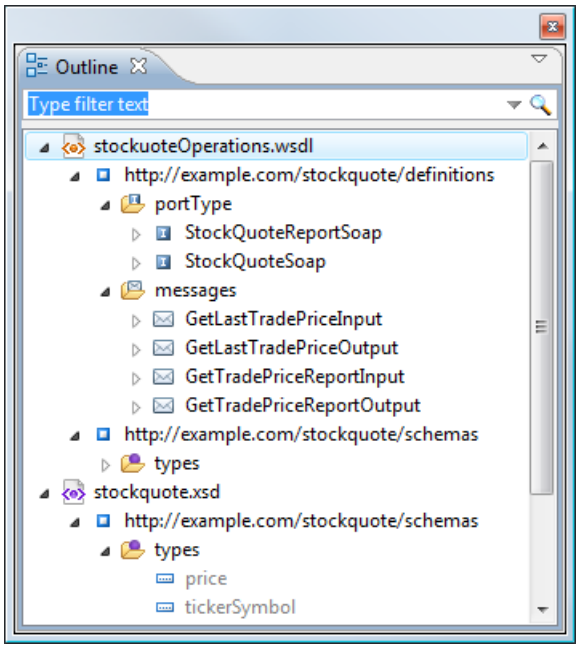


Figure 485: WSDL Outline View

The **Outline** view can display both the components of the current document and its XML structure, organized in a tree-like fashion. You can switch between the display modes by using the **Show XML structure** and **Show components** actions in the **View menu** on the **Outline** view action bar. The following actions are available:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Selection update on cursor move

Controls the synchronization between the **Outline** view and the current document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes in the WSDL editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the current document.

When the **Show components** option is selected, the following actions are available:

Show XML structure

Displays the XML structure of the current document in a tree-like manner.

Sort

Sorts the components in the **Outline** view alphabetically.

Show all components

Displays all the components that were collected starting from current document or from the main document, if it is defined.

Show referable components

Displays all the components that you can reference from the current document.

Show only local components

Displays the components defined in the current file only.

Group by location

Groups the WSDL components by their location.

Group by type

Groups the WSDL components by their type.

Group by namespace

Groups the WSDL components by their namespace.

Note: By default, all the three grouping criteria are active.

When the **Show XML structure** option is selected, the following actions are available:

Show components
Switches the **Outline** view to the components display mode.

Flat presentation mode of the filtered results
When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions
Show/hide comments and processing instructions in the **Outline** view.

Show element name
Show/hide element name.

Show text
Show/hide additional text content for the displayed elements.

Show attributes
Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes
Displays the **XML Structured Outline** preferences page.

The following contextual menu actions are available in the **Outline** view when the **Show components** option is selected in the **View menu**:

Edit Attributes
Opens a dialog box that allows you to edit the attributes of the currently selected component.

Cut
Cuts the currently selected component.

Copy
Copies the currently selected component.

Delete
Deletes the currently selected component.

Search references
Searches for the references of the currently selected component.

Search references in
Searches for the references of the currently selected component in the context of a scope that you define.

Component dependencies
Opens the **Component Dependencies** view that displays the dependencies of the currently selected component.

Resource Hierarchy
Opens the **Resource Hierarchy/Dependencies** view that displays the hierarchy for the currently selected resource.

Resource Dependencies
Opens the **Resource Hierarchy/Dependencies** view that displays the dependencies of the currently selected resource.

Rename Component in
Renames the currently selected component in the context of a scope that you define.

The following contextual menu actions are available in the **Outline** view when the **Show XML structure** option is selected in the **View menu**:

Append Child

Displays a list of elements that you can insert as children of the current element.

Insert Before

Displays a list of elements that you can insert as siblings of the current element, before the current element.

Insert After

Displays a list of elements that you can insert as siblings of the current element, after the current element.

Edit Attributes

Opens a dialog box that allows you to edit the attributes of the currently selected component.

Toggle Comment

Comments/uncomments the currently selected element.

Search references

Searches for the references of the currently selected component.

Search references in

Searches for the references of the currently selected component in the context of a scope that you define.

Component dependencies

Opens the **Component Dependencies** view that displays the dependencies of the currently selected component.

Rename Component in

Renames the currently selected component in the context of a scope that you define.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

To switch from the tree structure to the text filter, use **Tab** and **Shift-Tab**.

Tip: The search filter is case insensitive. The following wildcards are accepted:

- ***** - any string
- **?** - any character
- **,** - patterns separator

If no wildcards are specified, the string to search is used as a partial match.

The content of the **Outline** view and the editing area are synchronized. When you select a component in the **Outline** view, its definition is highlighted in the editing area.

WSDL Resource Hierarchy/Dependencies View in WSDL Documents

The **Resource Hierarchy/Dependencies** view allows you to see the hierarchy/dependencies for a WSDL resource. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Note: The hierarchy of a WSDL resource includes the hierarchy of imported XML Schema resources. The dependencies of an XML Schema resource present the WSDL documents that import the schema.

To view the hierarchy of a WSDL document, select the document in the **Navigator** view and choose **Resource Hierarchy** from the contextual menu.

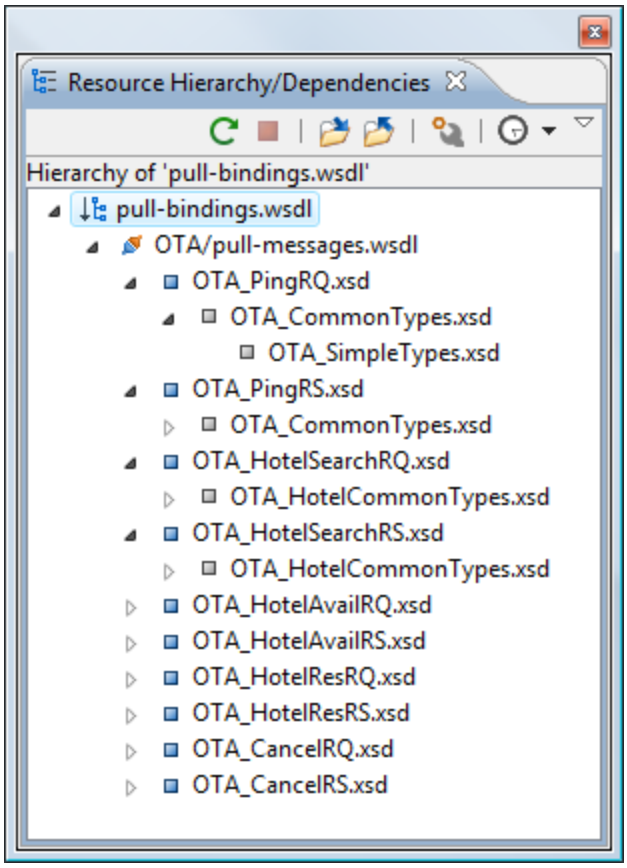


Figure 486: Resource Hierarchy/Dependencies View

If you want to see the dependencies of a WSDL document, select the document in the **Navigator** view and choose **Resource Dependencies** from the contextual menu.

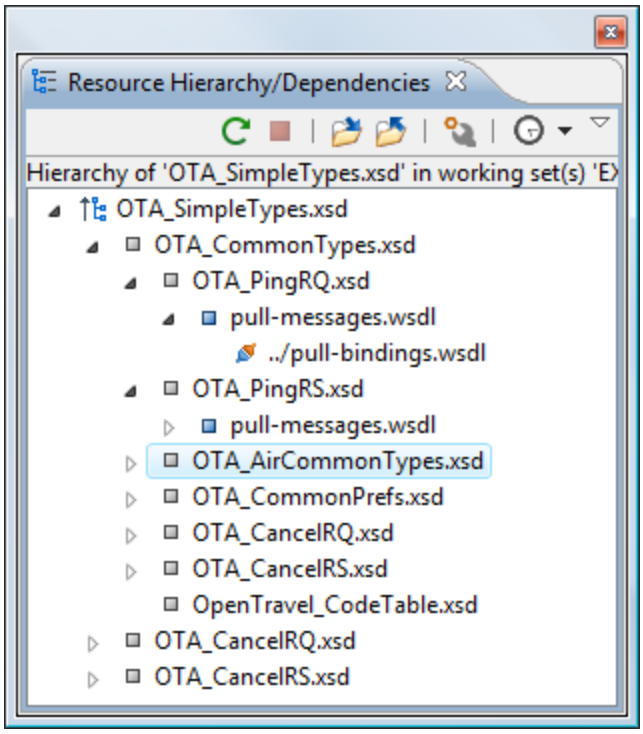


Figure 487: Resource Hierarchy/Dependencies View

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Note: The **Move resource** or **Rename resource** actions give you the option to update the references to the resource.

Related Information:

Search and Refactor Operations Scope on page 588

Moving/Renaming WSDL Resources

You can move and rename a resource presented in the **Resource/Hierarchy Dependencies** view, using the **Rename resource** and **Move resource** refactoring actions from the contextual menu.

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

WSDL Component Dependencies View

The **Component Dependencies** view allows you to see the dependencies for a selected component. This is helpful if you want to see where components are used in the entire hierarchy. For example, if you want to find all the references where a given component is used.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

To see the dependencies of a WSDL component:

1. Right-click the desired component in the editor or **Outline** view.
2. Select the **Component Dependencies** action from the contextual menu.

This action is available for all WSDL components (`messages`, `port types`, `operations`, `bindings`, and so on).

If a component contains multiple references, a small table is displayed at the bottom of the view that contains all the references. When a recursive reference is encountered, it is marked with a special icon .

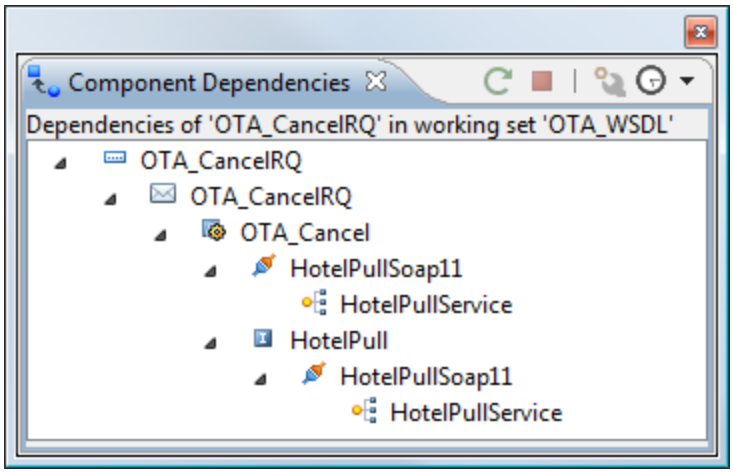


Figure 488: Component Dependencies View

The **Component Dependencies** view includes the following toolbar actions:

Refresh

Refreshes the dependencies structure.

Stop

Stops the dependency computation.

Configure

Allows you to choose the search scope for computing the dependencies structure. This is helpful for making sure all imported/included resources are computed.

History

Allows you to select from a list of the most recently used dependency computations.

In addition, the following actions are available in the contextual menu:

Go to First Reference

Selects the first reference of the currently selected component in the dependencies tree.

Go to Component

Shows the definition of the currently selected component in the dependencies tree.

Related Information:

Searching and Refactoring Operations Scope in WSDL Documents on page 746

Highlight Component Occurrences in WSDL Documents

When you position your mouse cursor over a component in a WSDL document, Oxygen XML Editor plugin searches for the component declaration and all its references and highlights them automatically.

Customizable colors are used: one for the component definition and another one for component references. Occurrences are displayed until another component is selected.

To change the default behavior of **Highlight Component Occurrences**, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**. You can also trigger a search using the **Search** > **Search Occurrences in File ()** action from contextual menu. Matches are displayed in separate tabs of the **Results** view.

Searching and Refactoring Operations in WSDL Documents

Search Actions

The following search actions are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

The following action is available from the **WSDL** menu:

- **Go to Definition** - Takes you to the location of the definition of the current item.

  Note: You can also use the **Ctrl + Single-Click (Command + Single-Click on OS X)** shortcut on a reference to display its definition.

Refactoring Actions

The following refactoring actions are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

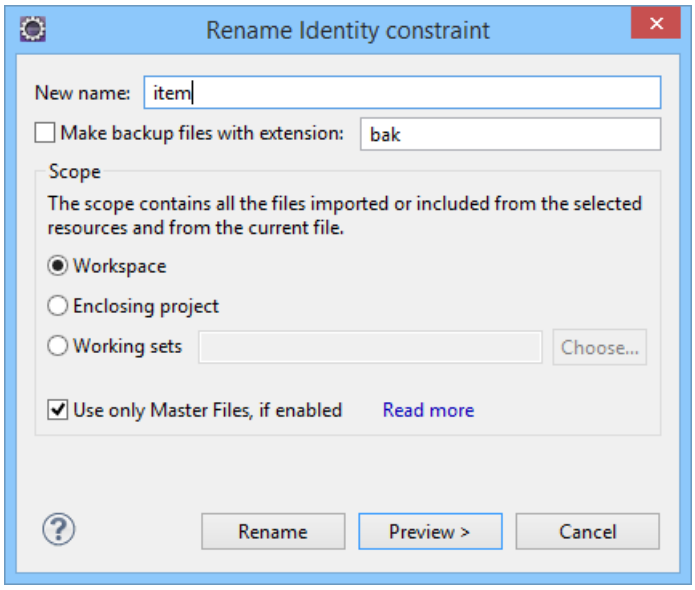


Figure 489: Rename Identity Constraint Dialog Box

Searching and Refactoring Operations Scope in WSDL Documents

The *scope* is a collection of documents that define the context of a search and refactor operation. To control it you can use the **Change scope** operation, available in the *Quick Fix* action set or on the **Resource Hierarchy/ Dependency View** toolbar. You can restrict the scope to the current project or to one or multiple *working sets*. The **Use only Master Files, if enabled** checkbox allows you to restrict the scope of the search and refactor operations to the resources from the **Master Files** directory. Click **read more** for details about the *Master Files* support.

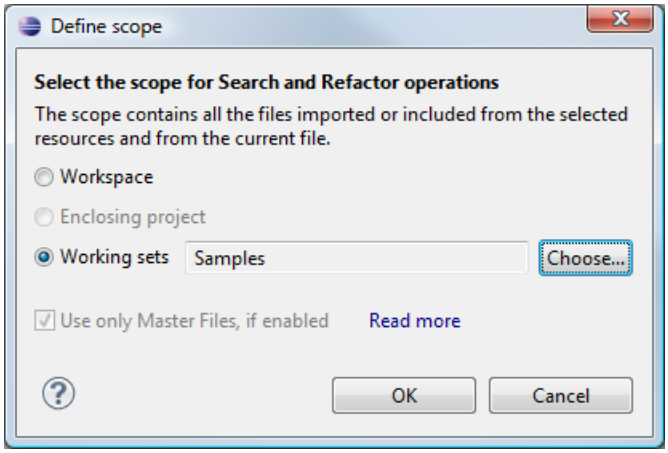


Figure 490: Change Scope Dialog Box

The scope you define is applied to all future search and refactor operations until you modify it. Contextual menu actions allow you to add or delete files, folders, and other resources to the *working set* structure.

Quick Assist Support in WSDL Documents

The *Quick Assist* feature is activated automatically when the cursor is positioned over the name of a component. It is accessible via a yellow bulb icon ( ) placed at the current line in the stripe on the left side of the editor. Also, you can invoke the *quick assist* menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

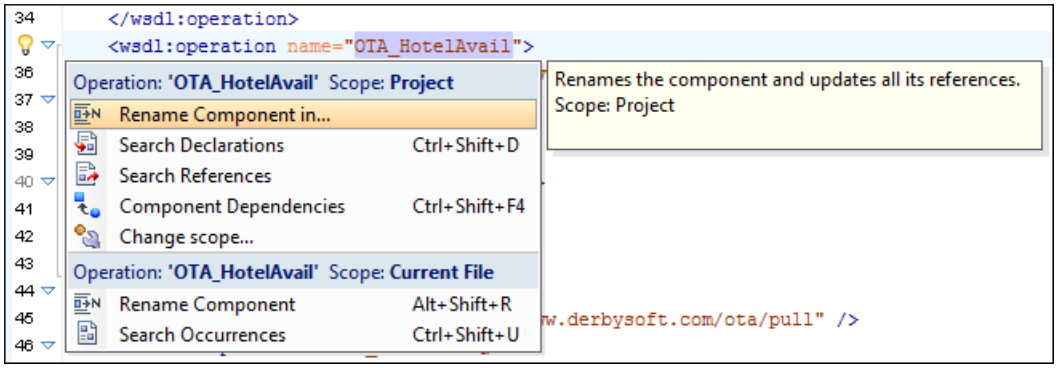


Figure 491: WSDL Quick Assist Support

The *Quick Assist* support offers direct access to the following actions:

Rename Component in

Renames the component and all its dependencies.

Search Declarations

Searches the declaration of the component in a predefined scope. It is available only when the context represents a component name reference.

Search References

Searches all references of the component in a predefined scope.

Component Dependencies

Searches the component dependencies in a predefined scope.

Change Scope

Configures the scope that will be used for future search or refactor operations.

Rename Component

Allows you to rename the current component in-place.

Search Occurrences

Searches all occurrences of the component within the current file.

Generating Documentation for WSDL Documents

You can use Oxygen XML Editor plugin to generate detailed documentation for the components of a WSDL document in HTML format. You can select the WSDL components to include in your output and the level of details to present for each of them. Also, the components are hyperlinked. You can also generate the documentation in a custom output format by using a custom stylesheet.

Note: The WSDL documentation includes the XML Schema components that belong to the internal or imported XML schemas.

To generate documentation for a WSDL document, select **WSDL Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate WSDL Documentation** action from the contextual menu of the **Navigator** view.

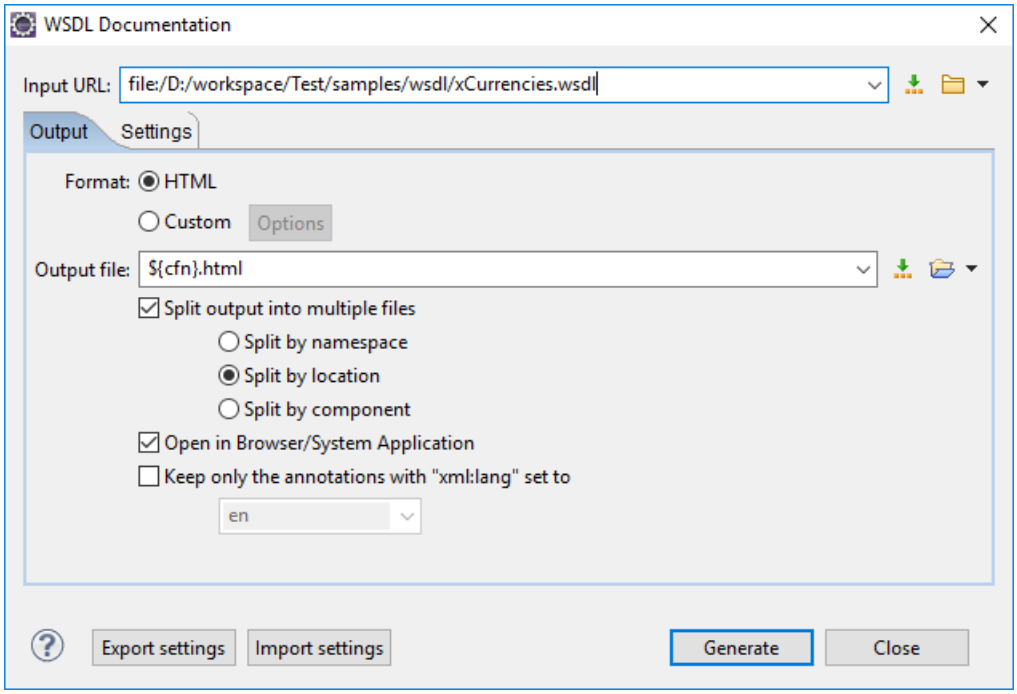


Figure 492: WSDL Documentation Dialog Box

The **Input URL** field of the dialog box must contain the full path to the WSDL document that you want to generate documentation for. The WSDL document may be a local or a remote file. You can specify the path to the WSDL file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:

- **HTML** - The documentation is generated in HTML output format.
- **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.

- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. For large WSDL documents, choosing a different split criterion may generate smaller output files providing a faster documentation browsing. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.
- **Keep only the annotations with xml:lang set to** - The generated output will contain only the annotations with the `xml:lang` attribute set to the selected language. If you choose a primary language code (for example, **en** for English), this includes all its possible variations (**en-us**, **en-uk**, etc.).

Setting Tab

When you generate documentation for a WSDL document, you can choose what components to include in the output and the details to be included in the documentation.

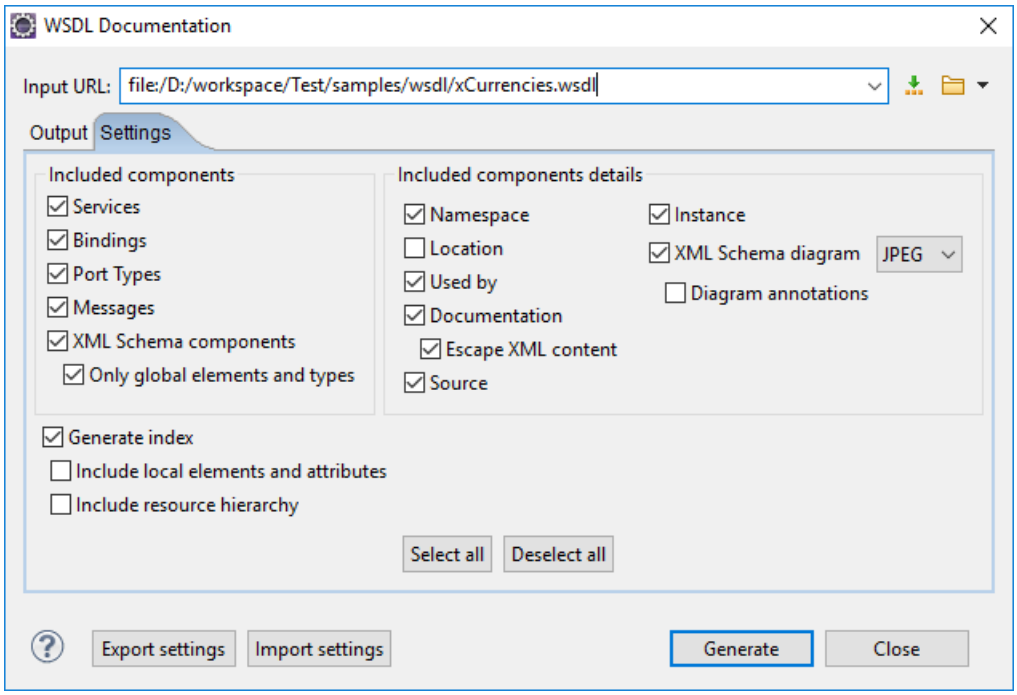


Figure 493: Settings Tab of the WSDL Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following:

- **Components**
  - **Services** - Specifies whether or not the generated documentation includes the WSDL services.
  - **Bindings** - Specifies whether or not the generated documentation includes the WSDL bindings.
  - **Port Types** - Specifies whether or not the generated documentation includes the WSDL port types.
  - **Messages** - Specifies whether or not the generated documentation includes the WSDL messages.

- **XML Schema Components** - Specifies whether or not the generated documentation includes the XML Schema components.
  - **Only global elements and types** - Specifies whether or not the generated documentation includes only global elements and types.
- **Component Details**
  - **Namespace** - Presents the namespace information for WSDL or XML Schema components.
  - **Location** - Presents the location information for each WSDL or XML Schema component.
  - **Used by** - Presents the list of components that reference the current one.
  - **Documentation** - Presents the component documentation. If you choose **Escape XML Content**, the XML tags are presented in the documentation.
  - **Source** - Presents the XML fragment that defines the current component.
  - **Instance** - Generates a sample XML instance for the current component.

    Note: This option applies to the XML Schema components only.
  - **XML Schema Diagram** - Displays the diagram for each XML Schema component. You can choose the image format (JPEG, PNG, SVG) to use for the diagram section.
    - **Diagram annotations** - Specifies whether or not the annotations of the components presented in the diagram sections are included.
- **Generate index** - Displays an index with the components included in the documentation.
  - **Include local elements and attributes** - If selected, local elements and attributes are included in the documentation index.
  - **Include resource hierarchy** - Specifies whether or not the resource hierarchy for an XML Schema documentation is generated. It is deselected by default.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command-line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the WSDL documentation.

Generating WSDL Documentation in HTML Format

The WSDL documentation generated in HTML format is presented in a visual diagram style with various sections, hyperlinks, and options.

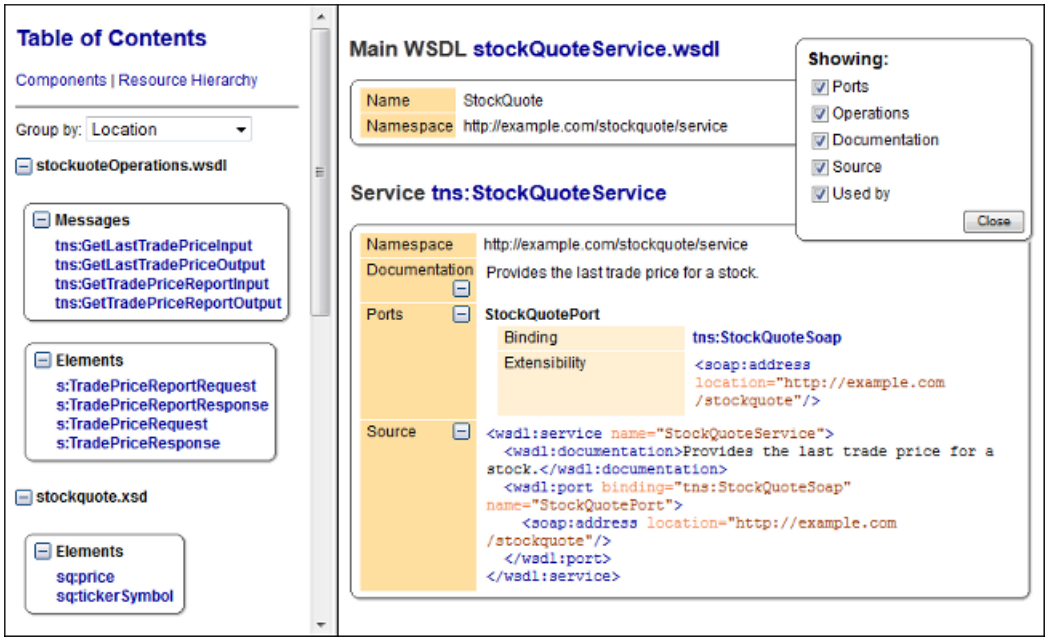


Figure 494: WSDL Documentation in HTML Format

The documentation of each component is presented in a separate section. The title of the section is composed of the component type and the component name. The component information (namespace, documentation, etc.) is presented in a tabular form.

If you choose to split the output into multiple files, the table of contents is displayed in the left frame and is divided in two tabs: **Components** and **Resource Hierarchy**.

The **Components** tab allows you to group the contents by namespace, location, or component type. The WSDL components from each group are sorted alphabetically. The **Resource Hierarchy** tab displays the dependencies between WSDL and XML Schema modules in a tree-like fashion. The root of the tree is the WSDL document that you generate documentation for.

After the documentation is generated, you can collapse or expand details for some WSDL components by using the **Showing** options or the **Collapse** or **Expand** buttons.

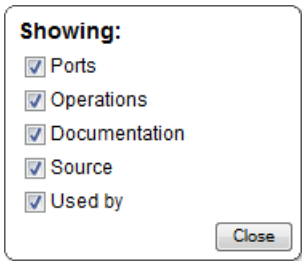


Figure 495: Showing Options

Generating WSDL Documentation in a Custom Format

To obtain the default HTML documentation output from a WSDL document, Oxygen XML Editor plugin uses an intermediary XML document to which it applies an XSLT stylesheet. To create a custom output from your WSDL document, edit the `wsdlDocHtml.xsl` XSLT stylesheet or create your own.

Note: The `wsdlDocHtml.xsl` stylesheet that is used to obtain the HTML documentation is located in the *`[OXYGEN_INSTALL_DIR]`*`/frameworks/wsdl_documentation/xsl` folder.

Note: The intermediary XML document complies with the `wsdlDocSchema.xsd` XML Schema. This schema is located in the *`[OXYGEN_INSTALL_DIR]`*`/frameworks/wsdl_documentation` folder.

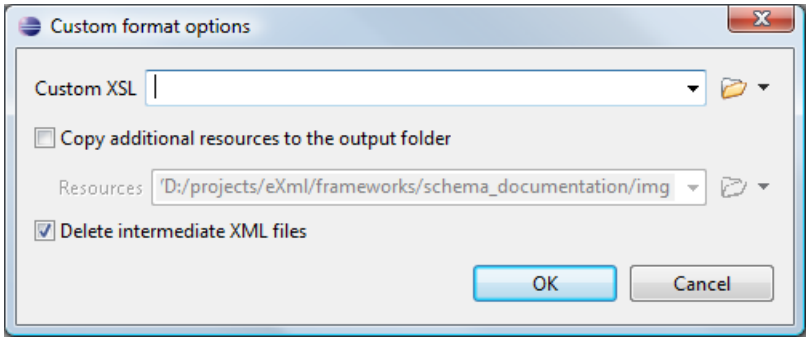


Figure 496: Custom Format Options Dialog Box

When using a custom format, you can also copy additional resources into the output folder or choose to keep the intermediate XML files created during the documentation process.

Generating WSDL Documentation from the Command-Line Interface

To generate documentation for a WSDL document from the command line, open the **WSDL Documentation** dialog box and click **Export settings**. Using the exported settings file you can generate the same documentation from the command line by running the following scripts:

- `wsdlDocumentation.bat` on Windows.
- `wsdlDocumentation.sh` on Mac OS X and Linux.

The scripts are located in the installation folder of Oxygen XML Editor plugin. You can integrate the scripts in an external batch process launched from the command-line interface.

WSDL SOAP Analyzer

WSDL SOAP Analyzer is a tool that helps you test if the messages defined in a Web Service Descriptor (WSDL) are accepted by a Web Services server.

After you edit and validate your Web service descriptor against a mix of the XML Schemas for WSDL and SOAP, it is easy to check if the defined SOAP messages are accepted by the remote Web Services server by using the integrated **WSDL SOAP Analyzer** tool (available from the toolbar or **WSDL** menu).

Oxygen XML Editor plugin provides two ways of testing, one for the currently edited WSDL document and another for the remote WSDL documents that are published on a web server. To open the **WSDL SOAP Analyzer** tool for the currently edited WSDL document do one of the following:

- Click the **WSDL SOAP Analyzer** toolbar button.
- Use the **WSDL SOAP Analyzer** action from the **WSDL** menu.
- Go to **Open with** > **WSDL Editor** in the contextual menu of the **Navigator** view.

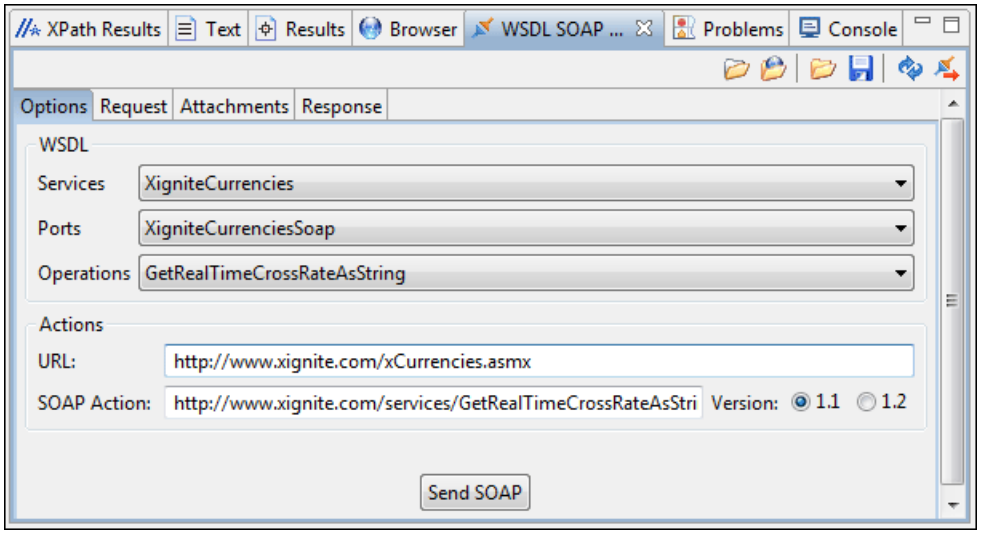


Figure 497: WSDL SOAP Analyzer View

This tool contains a SOAP analyzer and sender for Web Services Description Language file types. The analyzer fields are as follows:

- **Services** - The list of services defined by the WSDL file.
- **Ports** - The ports for the selected service.
- **Operations** - The list of available operations for the selected service.
- **Action URL** - The script that serves the operation.
- **SOAP Action** - Identifies the action performed by the script.
- **Version** - Choose between 1.1 and 1.2. The SOAP version is selected automatically depending on the selected port.
- **Request Editor** - It allows you to compose the web service request. When an action is selected, Oxygen XML Editor plugin tries to generate as much content as possible for the SOAP request. The envelope of the SOAP request has the correct namespace for the selected SOAP version, that is *http://schemas.xmlsoap.org/soap/envelope/* for SOAP 1.1 or *http://www.w3.org/2003/05/soap-envelope* for SOAP 1.2. Usually you just have to change a few values for the request to be valid. The *Content Completion Assistant* is available for this editor and is driven by the schema that defines the type of the current message. While selecting various operations, Oxygen XML Editor plugin remembers the modified request for each one. You can press the **Regenerate** button to overwrite your modifications for the current request with the initial generated content.
- **Attachments List** - You can define a list of file URLs to be attached to the request.

- **Response Area** - Initially it displays an auto generated server sample response so you can have an idea about how the response looks like. After pressing the **Send** button, it presents the message received from the server in response to the Web Service request. It may show also error messages. If the response message contains attachments, Oxygen XML Editor plugin prompts you to save them, then tries to open them with the associated system application.
- **Errors List** - There may be situations where the WSDL file is respecting the WSDL XML Schema, but it fails to be valid (for example, in the case of a message that is defined by means of an element that is not found in the types section of the WSDL). In such a case, the errors are listed here. This list is presented only when there are errors.
- **Send Button** - Executes the request. A status dialog box is displayed when Oxygen XML Editor plugin is connecting to the server.

The testing of a WSDL file is straight-forward: click the WSDL analysis button, then select the service, the port, and the operation. The editor generates the skeleton for the SOAP request. You can edit the request, eventually attach files to it and send it to the server. Watch the server response in the response area. You can find more details in the Testing Remote WSDL Files section.

Note: SOAP requests and responses are automatically validated in the **WSDL SOAP Analyzer** using the XML Schemas specified in the WSDL file.

Once defined, a request derived from a Web Service descriptor can be saved with the **Save** button to a Web Service SOAP Call (WSSC) file for later reuse. In this way, you save time in configuring the URLs and parameters.

You can open the result of a Web Service call in an editor panel using the **Open** button.

Testing Remote WSDL Files

To open and test a remote WSDL file the steps are the following:

1. Go to **Window** > **Show View** > **Other** > **Oxygen XML Editor plugin** > **WSDL SOAP Analyzer**.
2. Press the **Choose WSDL** button and enter the URL of the remote WSDL file.
   You enter the URL:
   - by typing
   - by browsing the local file system
   - by browsing a remote file system
   - by browsing a UDDI Registry
3. Press the **OK** button.
   This will open the **WSDL SOAP Analyzer** tool. In the **Saved SOAP Request** tab you can open directly a previously saved Web Service SOAP Call (WSSC) file, thus skipping the analysis phase.

UDDI Registry Browser

Pressing the button in the **WSDL File Opener** dialog box (menu **Tools** > **WSDL SOAP Analyzer**) opens the **UDDI Registry Browser** dialog box.

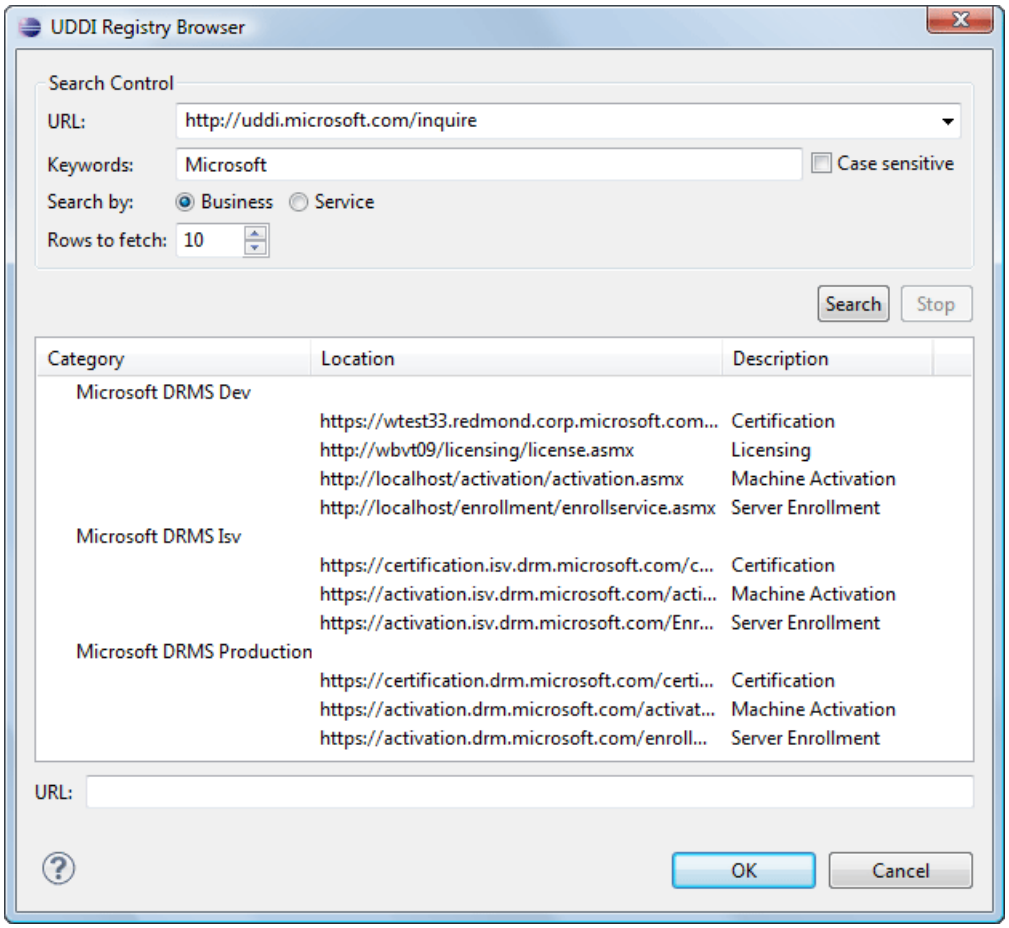


Figure 498: UDDI Registry Browser Dialog Box

The fields of the dialog box are as follows:

- **URL** - Type the URL of an UDDI registry or choose one from the default list.
- **Keywords** - Enter the string you want to be used when searching the selected UDDI registry for available Web services.
- **Rows to fetch** - The maximum number of rows to be displayed in the result list.
- **Search by** - You can choose to search either by company or by provided service.
- **Case sensitive** - When selected, the search takes into account the keyword case.
- **Search** - The WSDL files that matched the search criteria are added in the result list.

When you select a WSDL from the list and click the **OK** button, the **UDDI Registry Browser** dialog box is closed and you are returned to the **WSDL File Opener** dialog box.

Editing CSS Stylesheets

Oxygen XML Editor plugin includes a built-in editor for CSS stylesheets. This section presents the features of the CSS editor and how these features should be used. The features of the CSS editor include:

- **Create new CSS files and templates** - You can use the built-in new file wizards to create new CSS documents or templates.
- **Open and Edit CSS files** - CSS files can be opened and edited in a source editing mode.
- **Validation** - Presents validation errors in CSS files.
- **Content completion** - Offers proposals for properties and the values that are available for each property.
- **Syntax highlighting** - The syntax highlighting in Oxygen XML Editor plugin makes CSS files more readable.

- **Shortcut to open resources** - You can use **Ctrl + Single-Click (Command + Single-Click on OS X)** to open imported stylesheets or other resources (such as images) in the default system application for the particular type of resource.

Validating CSS Stylesheets

Oxygen XML Editor plugin includes a built-in *CSS Validator*, integrated with general validation support. This makes the usual validation features for presenting errors also available for CSS stylesheets.

The CSS properties accepted by the validator are those included in the current CSS profile that is selected in the CSS validation preferences. The **CSS 3 with Oxygen extensions** profile includes all the CSS 3 standard properties plus the CSS extensions specific for Oxygen that can be used in Author mode. That means all Oxygen specific extensions are accepted in a CSS stylesheet by the built-in CSS validator when this profile is selected.

Specify Custom CSS Properties

To specify custom CSS properties, follow these steps:

1. Create a file named `CustomProperties.xml` that has the following structure:

```
<?xml version="1.0" encoding="UTF-8"?>
<css_keywords
      xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
      xsi:schemaLocation="http://www.oxygenxml.com/ns/css
 http://www.oxygenxml.com/ns/css/CssProperties.xsd"
      xmlns="http://www.oxygenxml.com/ns/css">
      <property name="custom">
      <summary>Description for custom property.</summary>
        <value name="customValue"/>
        <value name="anotherCustomValue"/>
      </property>
</css_keywords>
```

2. Go to your desktop and create the `builtin/css-validator/` folder structure.
3. Press and hold **Shift** and right-click anywhere on your desktop. From the contextual menu, select **Open Command Window Here**.
4. In the command line, run the `jar cvf custom_props.jar builtin/` command.
   The `custom_props.jar` file is created.
5. Go to *[OXYGEN_INSTALL_DIR]*`/lib` and create the `endorsed` folder. Copy the `custom_props.jar` file to *[OXYGEN_INSTALL_DIR]*`/lib/endorsed`.

Content Completion in CSS Stylesheets

A *Content Completion Assistant*, similar to the one available for XML documents offers the CSS properties and the values available for each property. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut and is context-sensitive when invoked for the value of a property. The *Content Completion Assistant* also includes code templates that can be used to quickly insert code fragments into CSS stylesheets. The code templates that are proposed include form controls, actions, and **Author** mode operations.

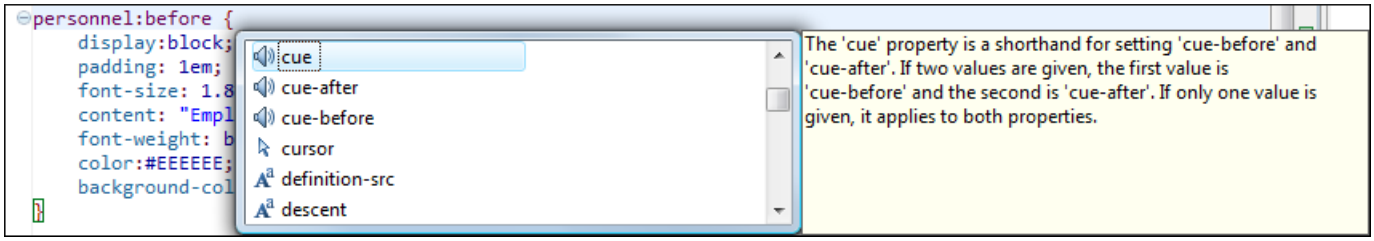


Figure 499: Content Completion in CSS Stylesheets

The properties and values available are dependent on the CSS Profile selected in the **CSS** preferences. The CSS 2.1 set of properties and property values is used for most of the profiles. However, with CSS 1 and CSS 3 specific proposal sets are used.

The profile *CSS 3 with Oxygen extensions* includes all the CSS 3 standard properties plus the CSS extensions specific for Oxygen XML Editor plugin that can be used in **Author** mode.

Proposals for CSS Selectors - After inserting a *CSS selector*, the content completion assistance will propose a list of pseudo-elements and pseudo-classes that are available for the selected CSS profile.

Proposals for `@media` and `@import` Rules - After inserting `@media` or `@import <url>` rules, the content completion assistance will propose a list of supported media types.

Related Information:

Specify Custom CSS Properties on page 754

Syntax Highlighting in CSS Files

Oxygen XML Editor plugin supports syntax highlighting in CSS files to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for CSS files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **CSS** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.

You can see the effects of your changes in the **Preview** pane.

Related Information:

Syntax Highlight Preferences on page 92

CSS Outline View

The **Outline** view for CSS stylesheets presents the import declarations for other CSS stylesheet files and all the selectors defined in the current CSS document. The selector entries can be presented as follows:

- In the order they appear in the document.
- Sorted by the element name used in the selector.
- Sorted by the entire selector string representation.

You can synchronize the selection in the **Outline** view with the cursor moves or changes you make in the stylesheet document. When you select an entry from the **Outline** view, Oxygen XML Editor plugin highlights the corresponding import or selector in the CSS editor.

By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

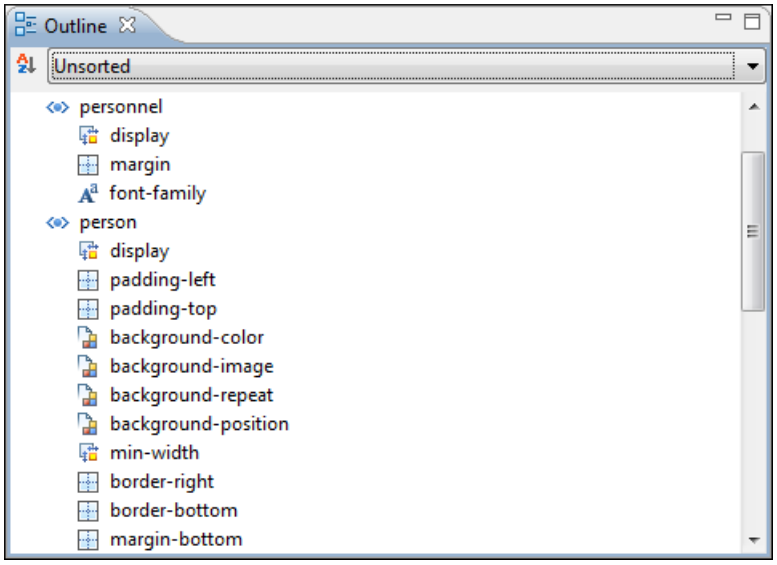


Figure 500: CSS Outline View

The selectors presented in this view can be found quickly using the key search field. When you press a sequence of character keys while the focus is in the view, the first selector that starts with that sequence is selected automatically.

Folding in CSS Stylesheets

In a large CSS stylesheet document, some styles can be collapsed so that only the styles that are needed remain in focus. The same folding features available for XML documents are also available in CSS stylesheets.

Note: To enhance your editing experience, you can select entire blocks (parts of text delimited by brackets) by double-clicking somewhere inside the brackets.

Formatting and Indenting CSS Stylesheets (Pretty Print)

If the edited CSS stylesheet becomes unreadable because of the bad alignment of the text lines, the format and indent operation available for XML documents is also available for CSS stylesheets. It works in the same way as for XML documents and is available as the same menu and toolbar action.

Minifying CSS Stylesheets

Minification (or *compression*) of a CSS document is the practice of removing unnecessary code without affecting the functionality of the stylesheet.

To minify a CSS, invoke the contextual menu anywhere in the edited document and choose the **Minify CSS** action. Oxygen XML Editor plugin opens a dialog box that allows you to:

- Set the location of the resulting CSS.
- Place each style rule on a new line.

After pressing **OK**, Oxygen XML Editor plugin performs the following actions:

- All spaces are normalized (all leading and trailing spaces are removed, while sequences of white spaces are replaced with single space characters).
- All comments are removed.

Note: The CSS minifier relies heavily upon the W3C CSS specification. If the content of the CSS file you are trying to minify does not conform with the specifications, an error dialog box will be displayed, listing all errors encountered during the processing.

The resulting CSS stylesheet gains a lot in terms of execution performance, but loses in terms of readability. The source CSS document is left unaffected.

Note: To restore the readability of a minified CSS, invoke the **Format and Indent** action from the **XML** menu, the **Source** submenu from the contextual menu, or **Source** toolbar. However, this action will not recover any of the deleted comments.

Editing Relax NG Schemas

An XML Schema describes the structure of an XML document and is used to validate XML document instances against it, to check that the XML instances conform to the specified requirements. If an XML instance conforms to the schema then it is said to be valid. Otherwise, it is invalid.

Oxygen XML Editor plugin offers support for editing Relax NG schema files in the following editing modes:

- **Text editing mode** - Allows you to edit Relax NG schema files in a source editing mode, along with a schema design pane with two tabs that offer a **Full Model View** and **Logical Model View**.
- **Grid editing mode** - Displays Relax NG schema files in a structured spreadsheet-like grid.
- **Author editing mode** - The visual **Author** mode is also available for Relax NG schema files, presenting the schema similar to the Relax NG compact syntax. It links to imported schemas and external references. Embedded Schematron is also supported in Relax NG schemas with XML syntax.

For information about applying and detecting schemas, see Associating a Schema to XML Documents on page 579.

Related Information:

Associating a Schema to XML Documents on page 579

Editing Relax NG Schema in the Master Files Context

Smaller interrelated modules that define a complex Relax NG Schema cannot be correctly edited or validated individually, due to their interdependency with other modules. For example, an element defined in a main schema document is not visible when you edit an included module. Oxygen XML Editor plugin provides the support for defining the main module (or modules), thus allowing you to edit any of the imported/included schema files in the context of the larger schema structure.

You cat set a main Relax NG document either using the *master files* support from the **Navigator** view, or using a validation scenario.

To set a *master file* using a validation scenario, add validation units that point to the main schemas. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main schema. In this case, it considers the current module as the main schema.

The main advantage of editing in the context of a *master file* is that it provides correct validation of a module in the context of a larger schema structure.

Related Information:

Creating a New Validation Scenario on page 568
XML Schema Outline View on page 327

Relax NG Schema Diagram Editor

This section explains how to use the graphical diagram editor for Relax NG schemas.

Introduction to Relax NG Schema Diagram Editor

Oxygen XML Editor plugin provides a simple, expressive, and easy-to-read schema diagram editor for Relax NG schemas.

With this new feature you can easily develop complex schemas, print them on multiple pages or save them as JPEG, PNG, or BMP images. It helps both schema authors in developing the schema and content authors who are using the schema to understand it.

Oxygen XML Editor plugin is the only XML editor to provide a side by side source and diagram presentation and have them real-time synchronized:

- The changes you make in the Editor are immediately visible in the Diagram (no background parsing).
- Changing the selected element in the diagram selects the underlying code in the source editor.

Full Model View

When you create a new schema document or open an existing one, the editor panel is divided in two sections: one containing the schema diagram and the second the source code. The schema diagram editor has two tabs that offer a **Full Model View** and **Logical Model View**.

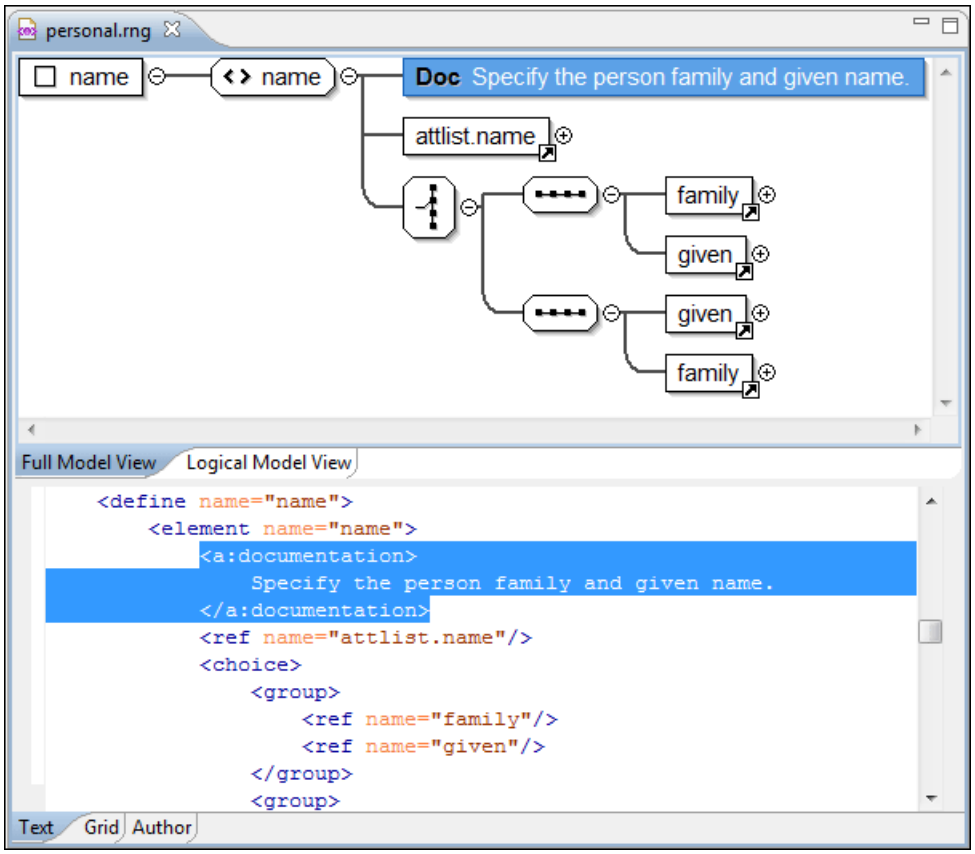


Figure 501: Relax NG Schema Editor - Full Model View

The following references can be expanded in place: patterns, includes, and external references. This expansion mechanism, coupled with the synchronization support, makes the schema navigation easy.

All the element and attribute names are editable by double-clicking the names.

Logical Model View

The **Logical Model View** presents the compiled schema in the form of a single pattern. The patterns that form the element content are defined as top level patterns with generated names. These names are generated depending of the elements name class.

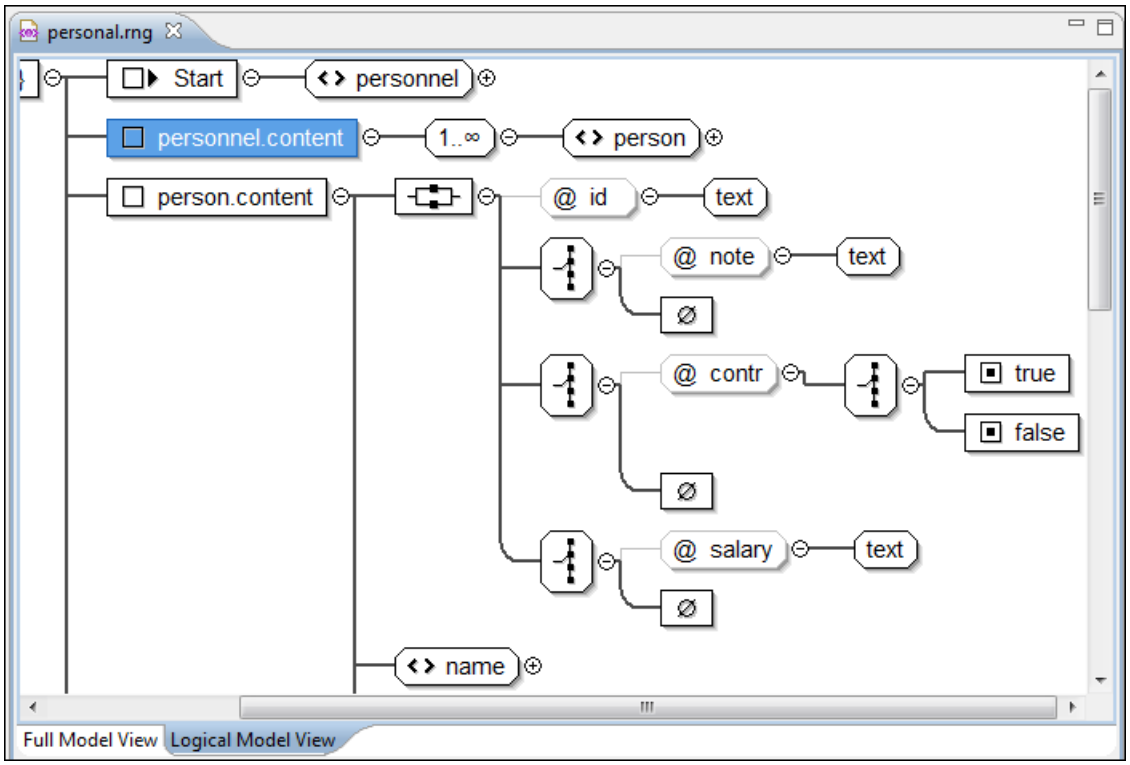
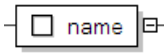
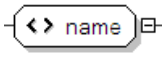
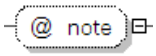
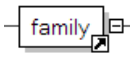
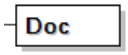


Figure 502: Logical Model View for a Relax NG Schema

Symbols Used in the Schema Diagram

The views in the schema diagram editor renders all the Relax NG schema patterns with the following intuitive symbols:

-  - `define` pattern with the `name` attribute set to the value shown inside the rectangle (in this example `name`).
- - `define` pattern with the `combine` attribute set to `interleave` and the `name` attribute set to the value shown inside the rectangle (in this example `attlist.person`).
- - `define` pattern with the `combine` attribute set to `choice` and the `name` attribute set to the value shown inside the rectangle (in this example `attlist.person`).
-  - `element` pattern with the `name` attribute set to the value shown inside the rectangle (in this example `name`).
-  - `attribute` pattern with the `name` attribute set to the value shown inside de rectangle (in this case `note`).
-  - `ref` pattern with the `name` attribute set to the value shown inside the rectangle (in this case `family`).
- - `oneOrMore` pattern.
- - `zeroOrMore` pattern.
- - `optional` pattern.

- - `choice` pattern.
- - `value` pattern (for example, used inside a `choice` pattern).
- - `group` pattern.
-  - A pattern from the Relax NG Annotations namespace (http://relaxng.org/ns/compatibility/annotations/1.0) that is treated as a documentation element in a Relax NG schema.
- - `text` pattern.
- - `empty` pattern.

Actions Available in the Schema Diagram Editor

When editing Relax NG schemas in **Full Model View**, the contextual menu offers the following actions:

Append child
Appends a child to the selected component.

Insert Before
Inserts a component before the selected component.

Insert After
Inserts a component after the selected component.

Edit attributes
Edits the attributes of the selected component.

Remove
Removes the selected component.

Show only the selected component
Depending on its state (selected/not selected), either the selected component or all the diagram components are shown.

Show Annotations
Depending on its state (selected/not selected), the documentation nodes are shown or hidden.

Auto expand to references
This option controls how the schema diagram is automatically expanded. If you select it and then edit a top-level element or you make a refresh, the diagram is expanded until it reaches referenced components. If this option is left unchecked, only the first level of the diagram is expanded, showing the top-level elements. For large schemas, the editor disables this option automatically.

Collapse Children
Collapses the children of the selected view.

Expand Children
Expands the children of the selected view.

Print Selection
Prints the selected view.

Save as Image
Saves the current selection as JPEG, BMP, SVG or PNG image.

Refresh
Refreshes the schema diagram according to the changes in your code. They represent changes in your imported documents or changes that are not reflected automatically in the compiled schema).

If the schema is not valid, you see only an error message in the **Logical Model View** instead of the diagram.

Validating Relax NG Schema Documents

By default, Relax NG schema files are validated as you type. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate a Relax NG schema document manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. When Oxygen XML Editor plugin validates a Relax NG schema file, it expands all the included modules so the entire schema hierarchy is validated. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Related Information:

Validating XML Documents Against a Schema on page 561
Validation Scenario on page 568
Associating a Schema to XML Documents on page 579
Presenting Validation Errors in Author Mode on page 213
Presenting Validation Errors in Text Mode on page 169

Content Completion in Relax NG Schemas

The intelligent *Content Completion Assistant* allows you to quickly identify and insert elements, attributes, and attribute values that are valid in the current editing context. All available proposals are listed in a pop-up menu displayed at the current cursor position.

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

When active, the *Content Completion Assistant* displays a list of context-sensitive proposals valid at the current cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut. You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. For each selected item in the list, the *Content Completion Assistant* displays a documentation window. You can customize the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Text** mode, do one of the following:

- Press **Enter** or **Tab** to insert both the start and end tags and position the cursor inside the start tag in a position suitable for inserting attributes.
- Press **Ctrl + Enter (Command + Enter on OS X)** to insert both the start and end tags and positions the cursor between the tags in a position where you can start typing content.

If you are using the concept of *master files* to import/include modules, the *Content Completion Assistant* collects its components starting from the *master files*. The *master files* can be defined in the project or in the associated validation scenario. For more information about the *Master Files* support in Oxygen XML Editor plugin, see Defining Master Files at Project Level.

The *Content Completion Assistant* also offers additional information for the element and attribute proposals in the form of schema annotations that is displayed in a tooltip.

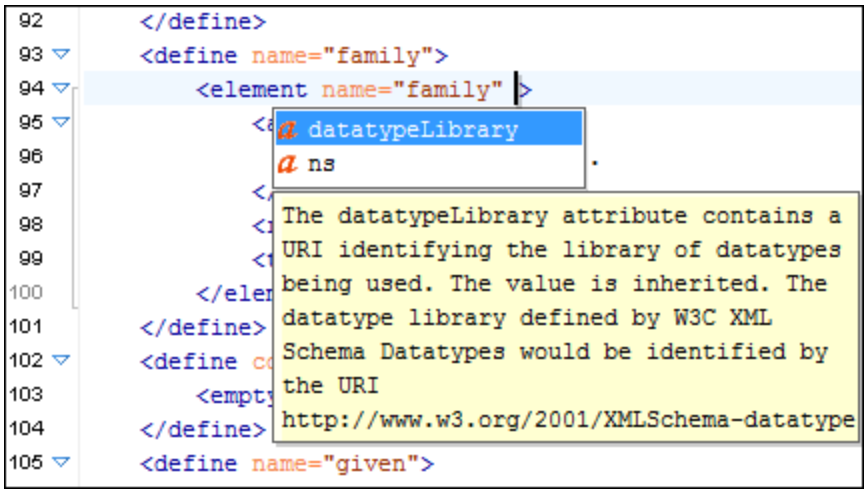


Figure 503: Relax NG Content Completion Assistant

Syntax Highlighting in Relax NG Schemas

Oxygen XML Editor plugin supports syntax highlighting in Relax NG schemas to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for Relax NG schemas, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane (for RELAX NG Compact Syntax schemas, select and expand the **RNC** section).
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes (for RELAX NG Compact Syntax schemas, the tab is **RNC**).

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/ Attributes by Prefix** preferences page.

Related Information:

Syntax Highlight Preferences on page 92

Quick Fixes for DTD, XSD, and Relax NG Errors

Oxygen XML Editor plugin offers *Quick Fixes* for common errors that appear in XML documents that are validated against DTD, XSD, or Relax NG schemas.

Note: For XML documents validated against XSD schemas, the *Quick Fixes* are only available if you use the default Xerces validation engine.

Quick Fixes are available in **Text** mode and **Author** mode.

Oxygen XML Editor plugin provides *Quick Fixes* for numerous types of problems, including the following:

Problem Type	Available Quick Fixes
A specific element is required in the current context	Insert the required element
An element is invalid in the current context	Remove the invalid element
The content of the element should be empty	Remove the element content

Problem Type	Available Quick Fixes
An element is not allowed to have child elements	Remove all child elements
Text is not allowed in the current element	Remove the text content
A required attribute is missing	Insert the required attribute
An attribute is not allowed to be set for the current element	Remove the attribute
The attribute value is invalid	Propose the correct attribute values
ID value is already defined	Generate a unique ID value
References to an invalid ID	Change the reference to an already defined ID

Related Information:

Schematron Quick Fixes (SQF) on page 579

Relax NG Outline View

The **Outline** view for Relax NG schemas presents a list with the patterns that appear in the diagram in both the **Full Model View** and **Logical Model View** cases and it allows for quick access to a component by name. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

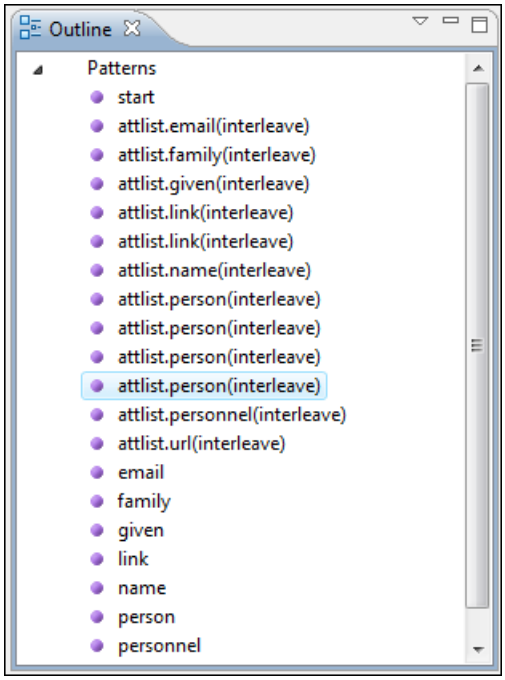


Figure 504: Relax NG Outline View

This view has two modes, with the tree showing either the XML structure or the defined pattern (components) collected from the current document. By default, the **Outline** view presents the components.

When the **Show components** option is selected in the **View menu** on the **Outline** view action bar, the following option is available:

Show XML structure

Shows the XML structure of the current document in a tree-like manner.

The following actions are available in the **View menu** on the **Outline** view action bar when the **Show XML structure** option is selected:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Selection update on cursor move

Allows a synchronization between **Outline** view and schema diagram. The selected view from the diagram will be also selected in the **Outline** view.

Show components

Shows the defined pattern collected from the current document.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the **XML Structured Outline** preferences page.

The following contextual menu actions are also available in the **Outline** view when the **Show XML structure** option is selected in the **View menu**:

Append Child

Displays a list of elements that you can insert as children of the current element.

Insert Before

Displays a list of elements that you can insert as siblings of the current element, before the current element.

Insert After

Displays a list of elements that you can insert as siblings of the current element, after the current element.

Edit Attributes

Opens a dialog box that allows you to edit the attributes of the currently selected component.

Toggle Comment

Comments/uncomments the currently selected element.

Search references

Searches for the references of the currently selected component.

Search references in

Searches for the references of the currently selected component in the context of a scope that you define.

Component dependencies

Opens the **Component Dependencies** view that displays the dependencies of the currently selected component.

Rename Component in

Renames the currently selected component in the context of a scope that you define.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

RNG Resource Hierarchy/Dependencies View

The **Resource Hierarchy/Dependencies** view allows you to see the hierarchy/dependencies for a schema. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

If you want to see the hierarchy of a schema, select the desired schema in the **Navigator** view and choose **Resource Hierarchy** from the contextual menu.

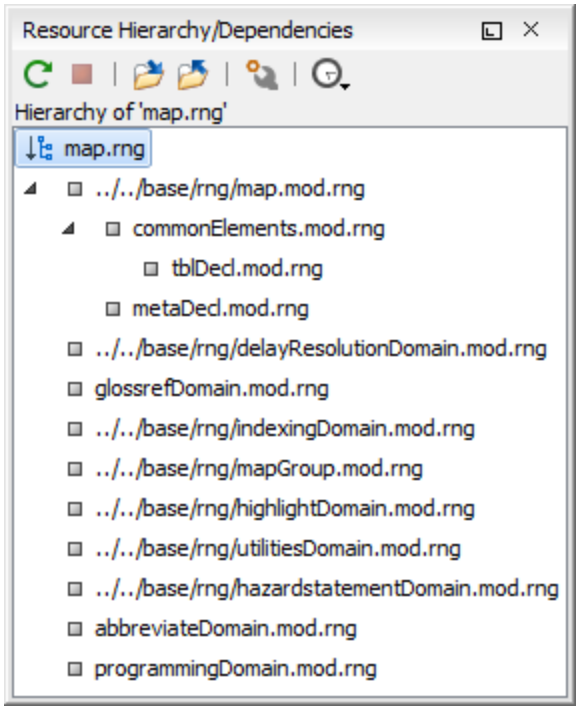


Figure 505: Resource Hierarchy/Dependencies View - hierarchy for `map.rng`

If you want to see the dependencies of a schema, select the desired schema in the **Navigator** view and choose **Resource Dependencies** from the contextual menu.

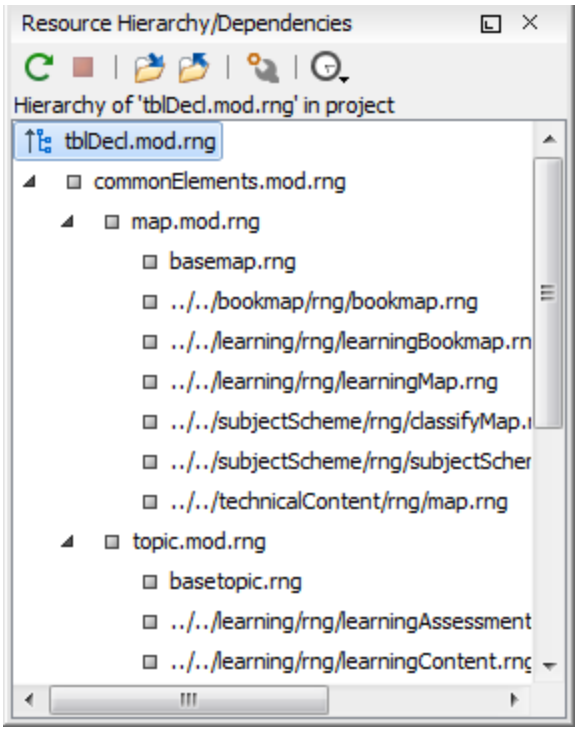


Figure 506: Resource Hierarchy/Dependencies View - Dependencies for `tblDecl.mod.rng`

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Note: The **Move resource** or **Rename resource** actions give you the option to update the references to the resource.

Related Information:

Search and Refactor Operations Scope on page 588

Moving/Renaming RNG Resources

You can move and rename a resource presented in the **Resource/Hierarchy Dependencies** view, using the **Rename resource** and **Move resource** refactoring actions from the contextual menu.

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

Note: Updating the references of a resource that is resolved through a catalog is not supported. Also, the update references operation is not supported if the path to the renamed or moved resource contains entities.

Relax NG Schema Component Dependencies View

The **Component Dependencies** view allows you to see the dependencies for a selected component. This is helpful if you want to see where components are used in the entire hierarchy. For example, if you want to find all the references where a given component is used.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

To see the dependencies of a RelaxNG component:

1. Right-click the desired component in the editor or **Outline** view.
2. Select the **Component Dependencies** action from the contextual menu.

The action is available for all named defines.

If a component contains multiple references, a small table is displayed at the bottom of the view that contains all the references. When a recursive reference is encountered, it is marked with a special icon .

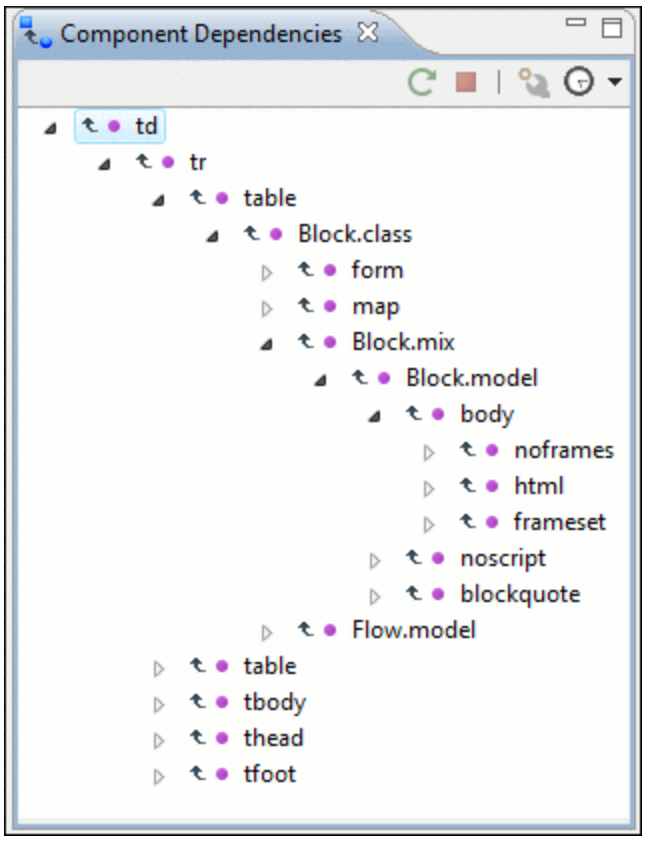


Figure 507: Component Dependencies View - Hierarchy for `xhtml.rng`

The **Component Dependencies** view includes the following toolbar actions:

Refresh

Refreshes the dependencies structure.

Stop

Stops the dependency computation.

Configure

Allows you to choose the search scope for computing the dependencies structure. This is helpful for making sure all imported/included resources are computed.

History

Allows you to select from a list of the most recently used dependency computations.

In addition, the following actions are available in the contextual menu:

Go to First Reference

Selects the first reference of the currently selected component in the dependencies tree.

Go to Component

Shows the definition of the currently selected component in the dependencies tree.

Related Information:

Search and Refactor Operations Scope on page 588

Searching and Refactoring Actions in RNG Schemas

Search Actions

The following search actions can be applied on named *defines* and are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

The following action is available from the **XSL** menu:

- **Go to Definition** - Moves the cursor to the definition of the current element in the Relax NG (full syntax) schema.

  Note: You can also use the **Ctrl + Single-Click (Command + Single-Click on OS X)** shortcut on a reference to display its definition.

Refactoring Actions

The following refactoring actions can be applied on named *defines* and are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

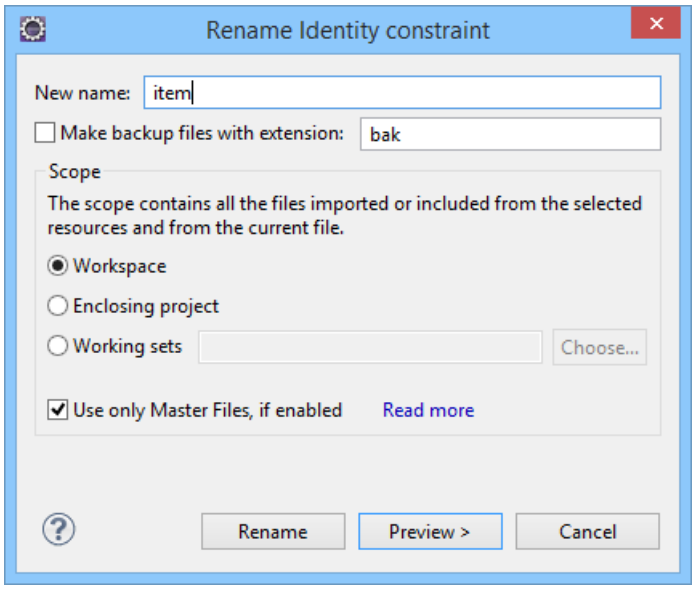


Figure 508: Rename Identity Constraint Dialog Box

RNG Quick Assist Support

The *Quick Assist* support improves the development work flow, offering fast access to the most commonly used actions when you edit schema documents.

The *Quick Assist* feature is activated automatically when the cursor is positioned over the name of a component. It is accessible via a yellow bulb icon ( ) placed at the current line in the stripe on the left side of the editor. Also, you can invoke the *quick assist* menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

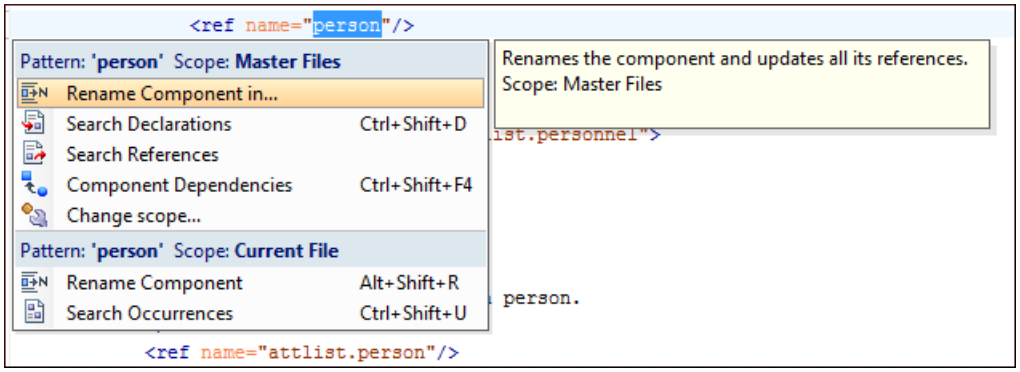


Figure 509: RNG Quick Assist Support

The *Quick Assist* support offers direct access to the following actions:

Rename Component in

Renames the component and all its dependencies.

Search Declarations

Searches the declaration of the component in a predefined scope. It is available only when the context represents a component name reference.

Search References

Searches all references of the component in a predefined scope.

Component Dependencies

Searches the component dependencies in a predefined scope.

Change Scope

Configures the scope that will be used for future search or refactor operations.

Rename Component

Allows you to rename the current component in-place.

Search Occurrences

Searches all occurrences of the component within the current file.

Related Information:

Component Dependencies View on page 767
Resource Hierarchy/Dependencies View on page 765
Searching and Refactoring Actions on page 769
Search and Refactor Operations Scope on page 588

Configuring a Custom Datatype Library for a RELAX NG Schema

A RELAX NG schema can declare a custom datatype library for the values of elements found in XML document instances. The datatype library must be developed in Java and it must implement the interface specified on the www.thaiopensource.com website.

The *JAR* file containing the custom library and any other dependent *JAR* file must be added to the classpath of the application, that is the *JAR* files must be added to the folder *[ECLIPSE-INSTALL-DIR]*`/lib` and a line `<library name="lib/custom-library.jar"/>` must be added for each *JAR* file to the file *[ECLIPSE-INSTALL-DIR]*`/plugin.xml` in the <runtime> element.

To load the custom library, restart the Eclipse platform.

Editing NVDL Schemas

Some complex XML documents are composed by combining elements and attributes from namespaces. Furthermore, the schemas that define these namespaces are not even developed in the same schema language. In such cases, it is difficult to specify in the document all the schemas that must be taken into account for validation of the XML document or for content completion. An NVDL (Namespace Validation Definition Language) schema can be used. This schema allows the application to combine and interleave multiple schemas of different types (W3C XML Schema, RELAX NG schema, Schematron schema) in the same XML document.

Oxygen XML Editor plugin offers support for editing NVDL schema files in the following editing modes:

- **Text editing mode** - Allows you to edit NVDL schema files in a source editing mode, along with a schema design pane with two tabs that offer a **Full Model View** and **Logical Model View**.
- **Grid editing mode** - Displays NVDL schema files in a structured spreadsheet-like grid.
- **Author editing mode** - The visual **Author** mode is also available for Relax NG schema files, presenting them in a compact and easy to understand representation.

For information about applying and detecting schemas, see Associating a Schema to XML Documents on page 579.

Related Information:

Associating a Schema to XML Documents on page 579

NVDL Schema Diagram

This section explains how to use the graphical diagram of a NVDL schema.

Introduction to NVDL Schema Diagram Editor

Oxygen XML Editor plugin provides a simple, expressive, and easy-to-read schema diagram editor for NVDL schemas.

With this new feature you can easily develop complex schemas, print them on multiple pages or save them as JPEG, PNG, and BMP images. It helps both schema authors in developing the schema and content authors that are using the schema to understand it.

Oxygen XML Editor plugin is the only XML Editor to provide a side by side source and diagram presentation and have them real-time synchronized:

- The changes you make in the Editor are immediately visible in the Diagram (no background parsing).
- Changing the selected element in the diagram, selects the underlying code in the source editor.

Full Model View

When you create a schema document or open an existing one, the editor panel is divided in two sections: one containing the schema diagram and the second the source code. The diagram view has two tabbed panes offering a **Full Model View** and a **Logical Model View**.

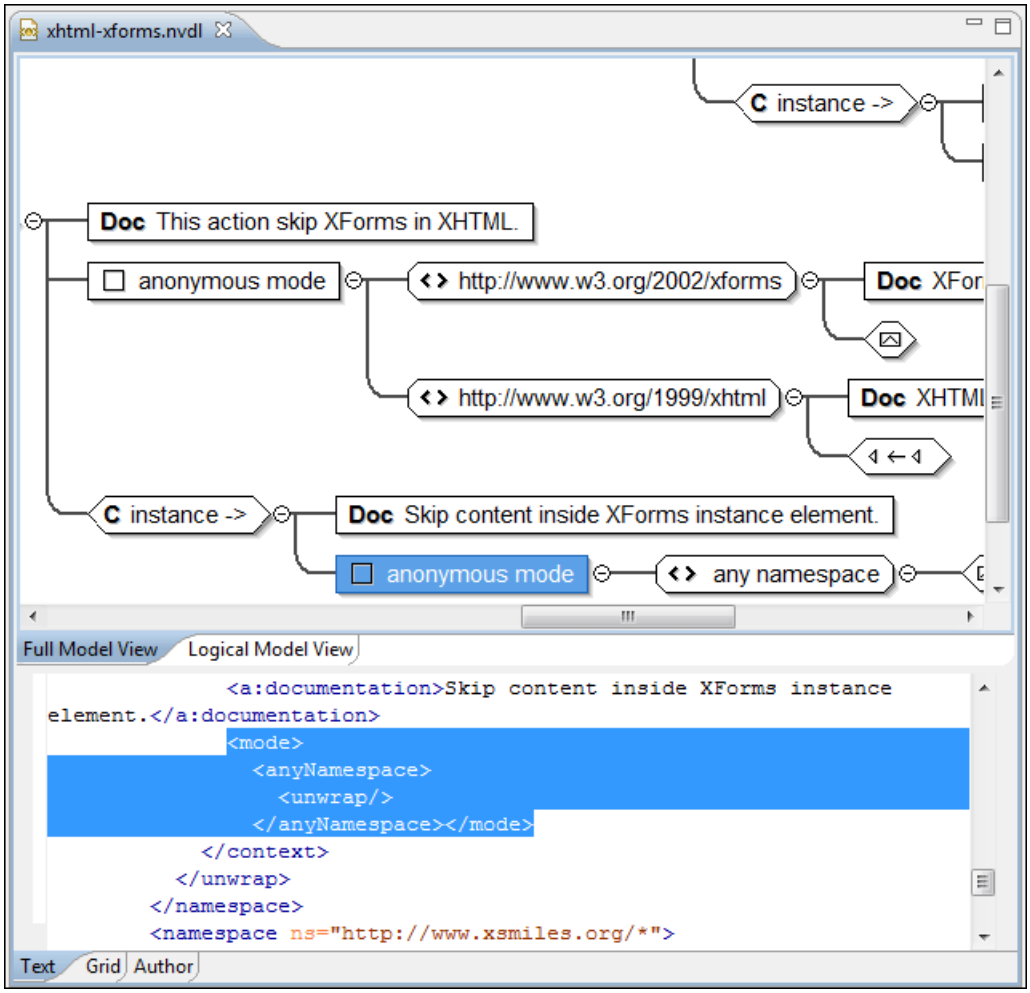


Figure 510: NVDL Schema Editor - Full Model View

The **Full Model View** renders all the NVDL elements with intuitive icons. This representation coupled with the synchronization support makes the schema navigation easy.

Double-click any diagram component to edit its properties.

Logical Model View

The **Logical Model View** presents the compiled schema in the form of a single pattern. The patterns that form the element content are defined as top level patterns with generated names. These names are generated depending of the elements name class.

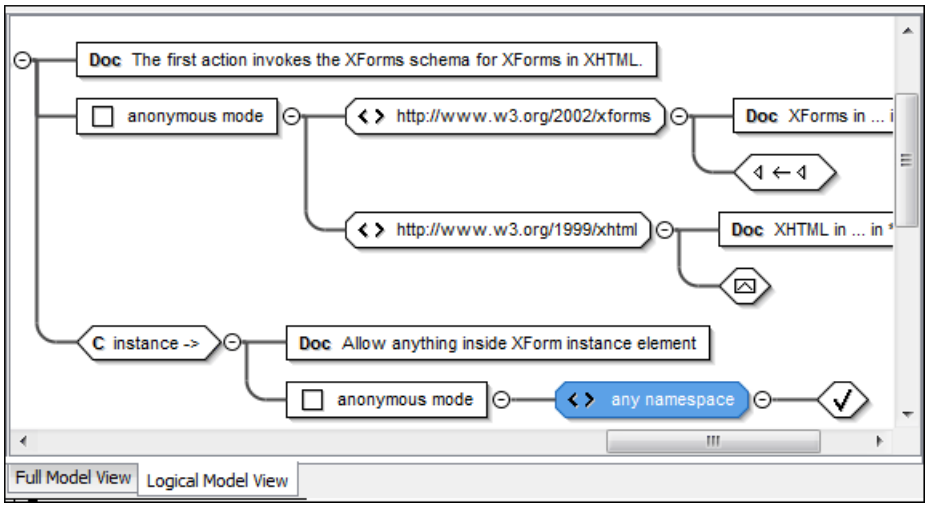


Figure 511: Logical Model View for an NVDL Schema

Actions Available in the Diagram Editor

The contextual menu offers the following actions:

Show only the selected component

Depending on its state (selected/not selected), either the selected component or all the diagram components are shown.

Show Annotations

Depending on its state (selected/not selected), the documentation nodes are shown or hidden.

Auto expand to references

This option controls how the schema diagram is automatically expanded. For instance, if you select it and then edit a top-level element or you trigger a diagram refresh, the diagram will be expanded until it reaches the referenced components. If this option is left unchecked, only the first level of the diagram is expanded, showing the top-level elements. For large schemas, the editor disables this option automatically.

Collapse Children

Collapses the children of the selected view.

Expand Children

Expands the children of the selected view.

Print Selection

Prints the selected view.

Save as Image

Saves the current selection as image, in JPEG, BMP, SVG or PNG format.

Refresh

Refreshes the schema diagram according to the changes in your code (changes in your imported documents or those that are not reflected automatically in the compiled schema).

If the schema is not valid, you see only an error message in the **Logical Model View** instead of the diagram.

Validating NVDL Schema Documents

By default, NVDL schema files are validated as you type. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate an NVDL schema document manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. When Oxygen XML Editor plugin validates an NVDL schema file, it expands all the included modules so the entire schema hierarchy is validated. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Related Information:
Validating XML Documents Against a Schema on page 561

Content Completion in NVDL Schemas

The intelligent *Content Completion Assistant* allows you to quickly identify and insert elements, attributes, and attribute values that are valid in the current editing context. All available proposals are listed in a pop-up menu displayed at the current cursor position.

The *Content Completion Assistant* is enabled by default. To disable it, open the **Preferences** dialog box , go to **Editor** > **Content Completion**, and deselect the **Enable content completion** option.

When active, the *Content Completion Assistant* displays a list of context-sensitive proposals valid at the current cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut. You can navigate through the list of proposals by using the **Up** and **Down** keys on your keyboard. For each selected item in the list, the *Content Completion Assistant* displays a documentation window. You can customize the size of the documentation window by dragging its top, right, and bottom borders.

To insert the selected proposal in **Text** mode, do one of the following:

- Press **Enter** or **Tab** to insert both the start and end tags and position the cursor inside the start tag in a position suitable for inserting attributes.
- Press **Ctrl + Enter (Command + Enter on OS X)** to insert both the start and end tags and positions the cursor between the tags in a position where you can start typing content.

If you are using the concept of *master files* to import/include modules, the *Content Completion Assistant* collects its components starting from the *master files*. The *master files* can be defined in the project or in the associated validation scenario. For more information about the *Master Files* support in Oxygen XML Editor plugin, see Defining Master Files at Project Level.

The *Content Completion Assistant* also offers additional information for the element and attribute proposals in the form of schema annotations that is displayed in a tooltip.

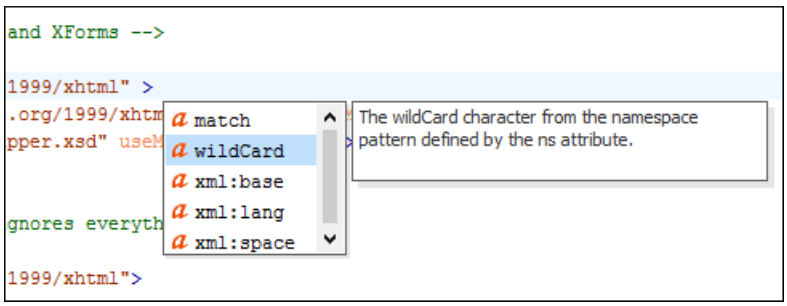


Figure 512: NVDL Content Completion Assistant

Syntax Highlighting in NVDL Schemas

Oxygen XML Editor plugin supports syntax highlighting in NVDL schemas to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for NVDL schemas, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Syntax Highlight Preferences on page 92

NVDL Outline View

The **Outline** view for NVDL schemas presents a list with the named or anonymous rules that appear in the diagram and it allows for quick access to a rule by name. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

NVDL Schema Component Dependencies View

The **Component Dependencies** view allows you to see the dependencies for a selected component. This is helpful if you want to see where components are used in the entire hierarchy. For example, if you want to find all the references where a given component is used.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

To see the dependencies of an NVDL component:

1. Right-click the desired component in the editor or **Outline** view.
2. Select the **Component Dependencies** action from the contextual menu.

The action is available for all named modes.

If a component contains multiple references, a small table is displayed at the bottom of the view that contains all the references. When a recursive reference is encountered, it is marked with a special icon .

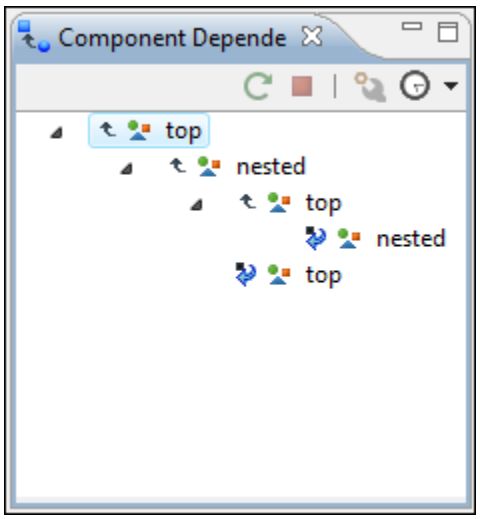


Figure 513: Component Dependencies View - Hierarchy for `test.nvdl`

The **Component Dependencies** view includes the following toolbar actions:

Refresh

Refreshes the dependencies structure.

Stop

Stops the dependency computation.

Configure

Allows you to choose the search scope for computing the dependencies structure. This is helpful for making sure all imported/included resources are computed.

History

Allows you to select from a list of the most recently used dependency computations.

In addition, the following actions are available in the contextual menu:

Go to First Reference

Selects the first reference of the currently selected component in the dependencies tree.

Go to Component

Shows the definition of the currently selected component in the dependencies tree.

Searching and Refactoring Actions in NVDL Schemas

Search Actions

The following search actions can be applied on `name`, `useMode`, and `startMode` attributes and are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

The following action is available from the **XSL** menu:

- **Go to Definition** - Moves the cursor to its definition in the schema used by the NVDL to validate it.

  Note: You can also use the **Ctrl + Single-Click (Command + Single-Click on OS X)** shortcut on a reference to display its definition.

Refactoring Actions

The following refactoring actions can be applied on `name`, `useMode`, and `startMode` attributes and are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

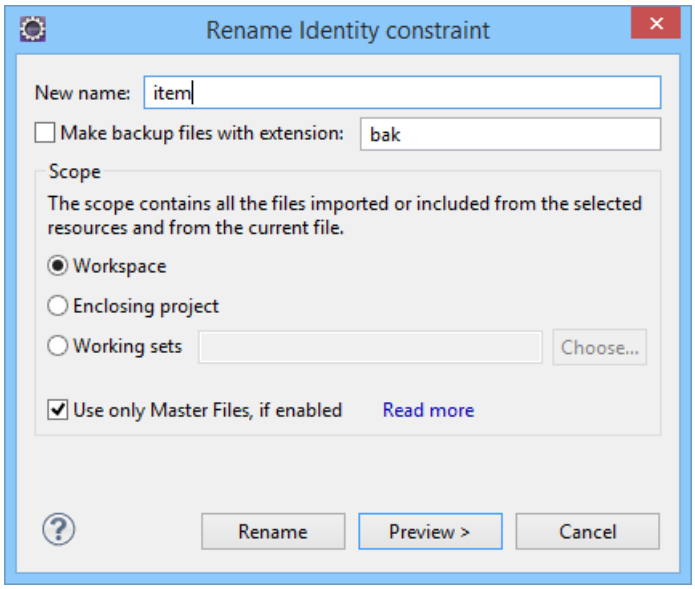


Figure 514: Rename Identity Constraint Dialog Box

Editing JSON Documents

This section explains the features of the Oxygen XML Editor plugin JSON Editor and how to use them.

Editing JSON Documents in Text Mode

When editing JSON documents in the **Text** editing mode, the usual text editing actions are available, along with other editor specific actions, including:

- Find / Replace
- Drag and Drop
- Validation
- Format and Indent (Pretty Print)

Note: You can run XPath expressions on opened JSON documents, but in **Text** mode the XPath results cannot be mapped in the document. However, they can be mapped in the **Grid** editing mode. You can use the **Grid** button at the bottom of the editor panel to switch to that editing mode.

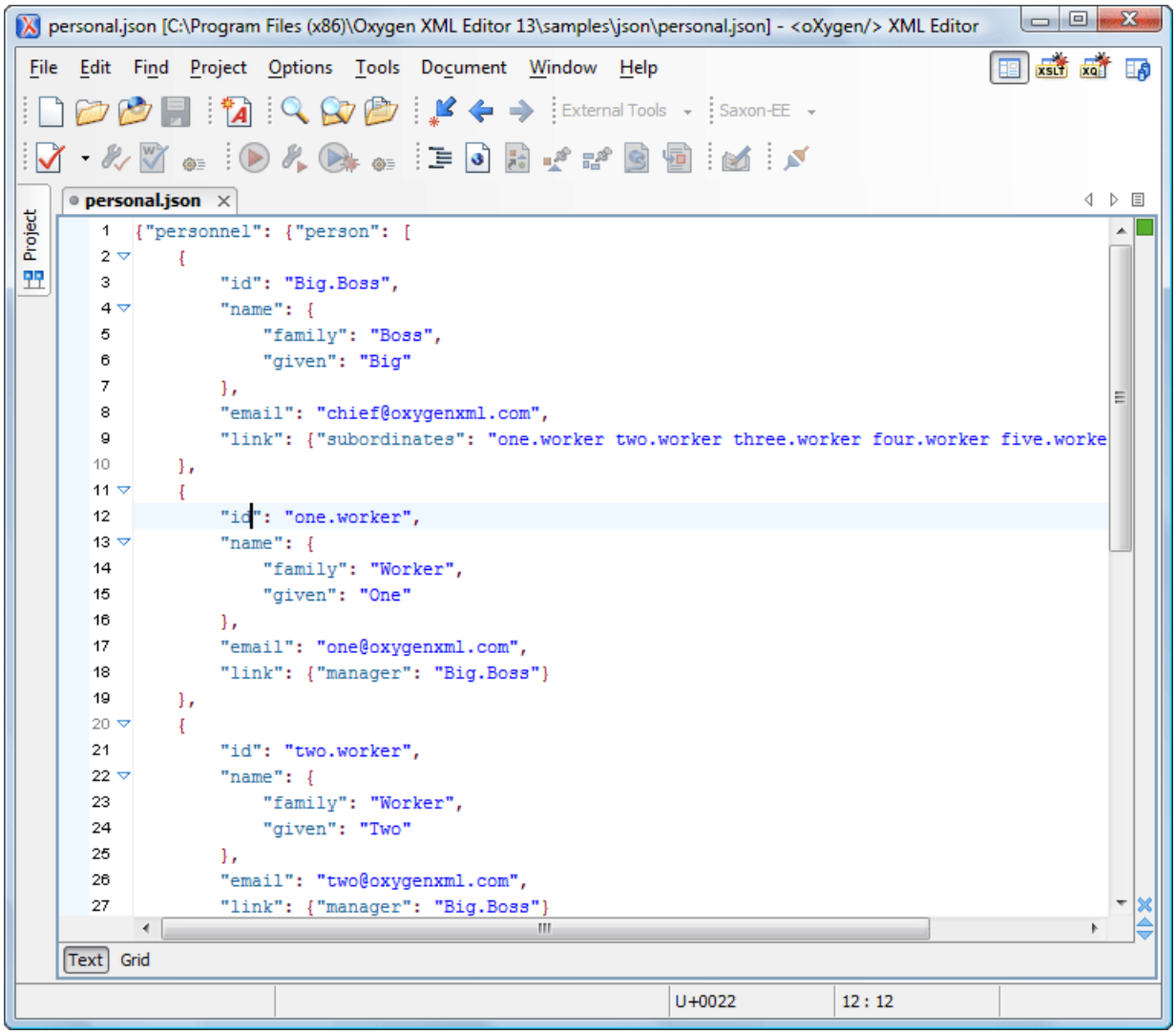


Figure 515: JSON Editor Text Mode

Related Information:

Editing JSON Documents in Grid Mode on page 779

Editing JSON Documents in Grid Mode

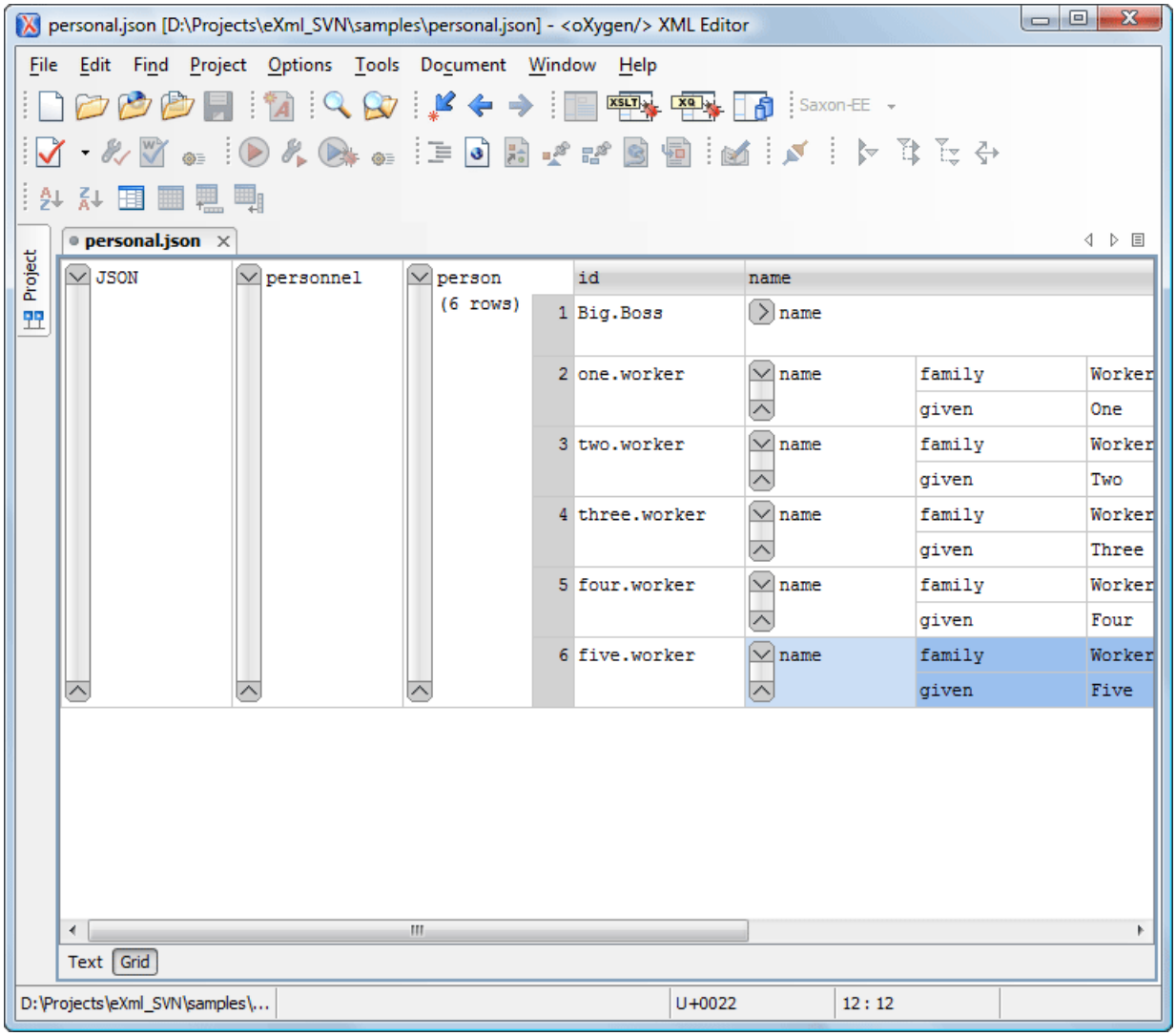


Figure 516: JSON Editor Grid Mode

Oxygen XML Editor plugin allows you to view and edit the JSON documents in the **Grid** mode. The JSON is represented in **Grid** mode as a compound layout of nested tables in which the JSON data and structure can be easily manipulated with table-specific operations or drag and drop operations on the grid components. You can also use the following JSON-specific contextual actions:

Array

Useful when you want to convert a JSON *value* to *array*.

Insert value before

Inserts a value before the currently selected one.

Insert value after

Inserts a value after the currently selected one.

Append value as child

Appends a value as a child of the currently selected value.

You can customize the JSON grid appearance according to your needs. For instance, you can change the font, the cell background, foreground, or even the colors from the table header gradients. The default width of the columns can also be changed.

Related Information:

Grid Editing Mode on page 184

Grid Preferences on page 82

Validating JSON Documents

Oxygen XML Editor plugin includes a built-in JSON validator (based on the free JAVA source code available on www.json.org), integrated with the general validation support.

Related Information:

Presenting Validation Errors in Text Mode on page 169
Document Checking Preferences on page 69

Syntax Highlighting in JSON Documents

Oxygen XML Editor plugin supports syntax highlighting in JSON files to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for JSON files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **JSON** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.

You can see the effects of your changes in the **Preview** pane.

Related Information:

Syntax Highlight Preferences on page 92

Folding in JSON

In a large JSON document, the data enclosed in the '{' and '}' characters can be collapsed so that only the needed data remain in focus. The folding features available for XML documents are available in JSON documents.

JSON Outline View

The **Outline** view for JSON documents displays the list of all the components of the JSON document you are editing. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

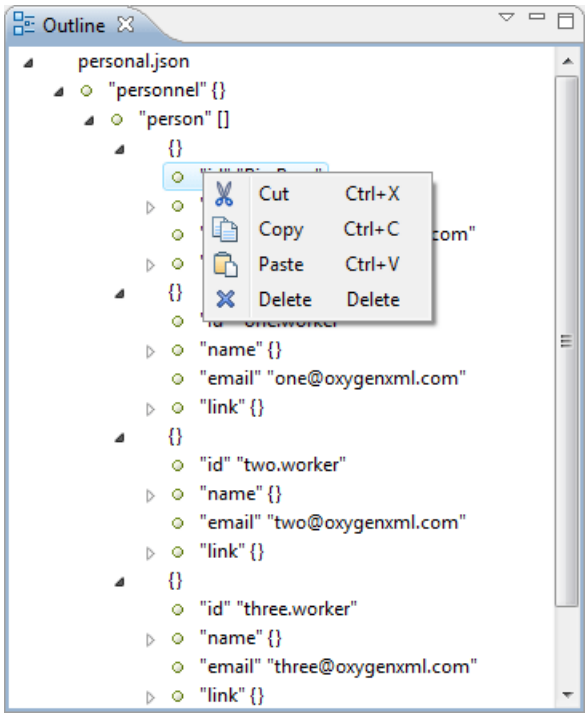


Figure 517: JSON Outline View

The following actions are available in the contextual menu of the JSON **Outline** view:

- **Cut**
- **Copy**
- **Paste**
- **Delete**

The **View menu** on the JSON **Outline** view action bar includes a **Selection update on cursor move** option that allows you to control the synchronization between the **Outline** view and source the document. Oxygen XML Editor plugin synchronizes the selection in the **Outline** view with the cursor moves or the changes you make in the JSON editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

JSON to XML Converter

Oxygen XML Editor plugin includes a useful and simple tool for converting JSON files to XML. It can be found in the **XML Tools** menu.

To convert a JSON document to XML, follow these steps:

1. Select the **JSON to XML** action from the **XML Tools** menu.
   The **JSON to XML** dialog box is displayed:

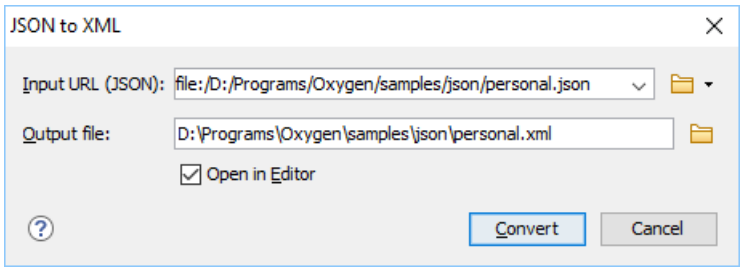


Figure 518: JSON to XML Dialog Box

2. Choose or enter the **Input URL** of the JSON document.

3. Choose the path of the **Output file** that will contain the resulting XML document.
4. Select the **Open in Editor** option to open the resulting XML document in the main editing pane.
5. Click the **Convert** button.

The original JSON document is now converted to an XML document.

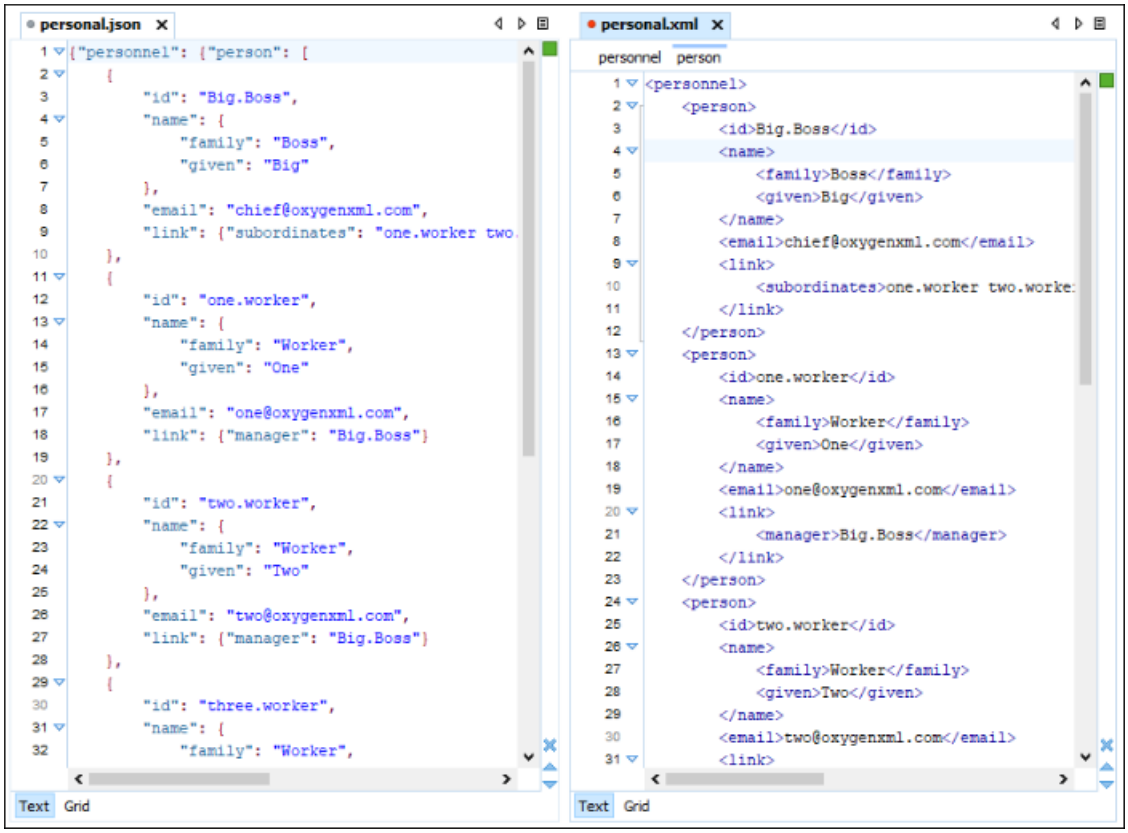


Figure 519: Example: XML to JSON Operation Result

XML to JSON Converter

Oxygen XML Editor plugin includes a useful and simple tool for converting XML files to JSON. It can be found in the **XML Tools** menu.

To convert an XML document to JSON, follow these steps:

1. Select the **XML to JSON** action from the **XML Tools** menu.

   The **XML to JSON** dialog box is displayed:

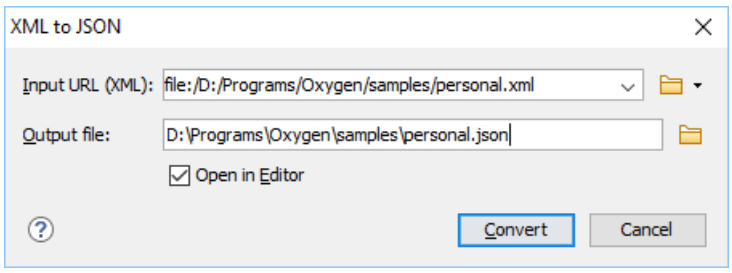


   Figure 520: XML to JSON Dialog Box
2. Choose or enter the **Input URL** of the XML document.
3. Choose the path of the **Output file** that will contain the resulting JSON document.
4. Select the **Open in Editor** option to open the resulting JSON document in the main editing pane.
5. Click the **Convert** button.

The original XML document is now converted to a JSON document.

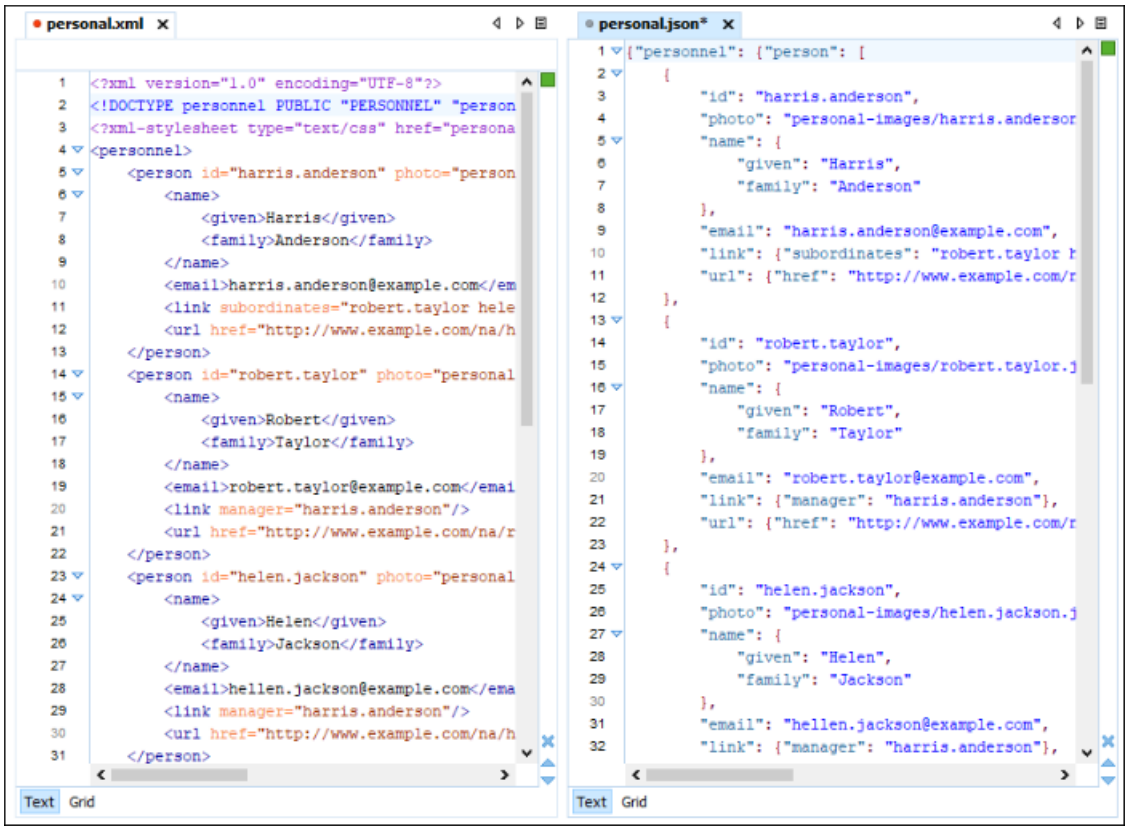


Figure 521: Example: XML to JSON Operation Result

Editing StratML Documents

Strategy Markup Language (StratML) is an XML vocabulary and schema for strategic plans. Oxygen XML Editor plugin supports StratML Part 1 (Strategic Plan) and StratML Part 2 (Performance Plans and Reports) and provides templates for the following documents:

- **Strategic Plan** (StratML Part 1)
- **Performance Plan** (StratML Part 2)
- **Performance Report** - (StratML Part 2)
- **Strategic Plan** - (StratML Part 2)

You can view the components of a StratML document in the **Outline** view. Oxygen XML Editor plugin implements a default XML with XSLT transformation scenario for this document type, called StratML to HTML.

Editing XLIFF Documents

XLIFF (*XML Localization Interchange File Format*) is an XML-based format that was designed to standardize the way multilingual data is passed between tools during a localization process. Oxygen XML Editor plugin provides the following support for editing XLIFF documents:

XLIFF Version 1.2 and 2.0 Support:

- New document templates for XLIFF documents.
- A default CSS file (`xliff.css`) used for rendering XLIFF content in **Author** mode is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/xliff/css/`.
- Validation and content completion support using local catalogs. The default catalog (`catalog.xml`) for version 1.2 is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/xliff/xsd/1.2`, and for version 2.0 in *[OXYGEN_INSTALL_DIR]*`/frameworks/xliff/xsd/2.0`.

XLIFF Version 2.0 Enhanced Support:

- Support for validating XLIFF 2.0 documents using modules. The default modules are stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/xliff/xsd/2.0/modules`.

Editing XLIFF Documents in Author Mode

By default, when you create a new XLIFF document from a template, Oxygen XML Editor plugin opens it in **Text** mode. Aside from the normal editing features found in **Text** mode, you can also switch to **Author** mode where Oxygen XML Editor plugin offers some special form controls specifically for XLIFF documents. These form controls simply allow you to add or edit XLIFF attribute values and content in a visual mode.

For XLIFF version 2.0 documents, you can also change the style of the visual editing mode. The **Styles** drop-down menu on the toolbar offers the following styles that are specifically designed to render XLIFF 2.0 documents in **Author** mode:

- **Default**
- **Classic**
- **Translate**

Editing JavaScript Documents

This section explains the features of the Oxygen XML Editor plugin JavaScript Editor and how you can use them.

JavaScript Editing Actions

Oxygen XML Editor plugin allows you to create and edit JavaScript files and assists you with useful features such as syntax highlight, content completion, and outline view. To enhance your editing experience, you can select entire blocks (parts of text delimited by brackets) by double-clicking somewhere inside the brackets.

```
90    function change_sides(front) {
91      switch ($('#version-switch').text()) {
92        case 'Original':
93          $('#holder').html($('div .original[id]').html());
94          make_clickable();
95          $('#version-switch').text('Translation 1');
96          break;
97        case 'Translation 1':
98          $('#holder').html($('div .translation[id]').filter(':first').html());
99          $('#version-switch').text('Translation 2');
100         break;
101       case 'Translation 2':
102         $('#holder').html($('div .translation[id]').filter(':last').html());
103         $('#version-switch').text('Original');
104         break;
105       }
106     }
```

Figure 522: JavaScript Editor Text Mode

The contextual menu of the **JavaScript** editor offers the following actions:

Cut

Allows you to cut fragments of text from the editing area.

Copy

Allows you to copy fragments of text from the editing area.

Paste

Allows you to paste fragments of text in the editing area.

Toggle Comment

Allows you to comment a line or a fragment of the JavaScript document you are editing. This option inserts a single comment for the entire fragment you want to comment.

Toggle Line Comment

Allows you to comment a line or a fragment of the JavaScript document you are editing. This option inserts a comment for each line of the fragment you want to comment.

Go to Matching Bracket

Use this option to find the closing, or opening bracket, matching the bracket at the cursor position. When you select this option, Oxygen XML Editor plugin moves the cursor to the matching bracket, highlights its row, and decorates the initial bracket with a rectangle.

Note: A rectangle decorates the opening or closing bracket that matches the current one, at all times.

Source

Allows you to select one of the following actions:

To Lower Case

Converts the selection content to lower case characters.

To Upper Case

Converts the selection content to upper case characters.

Capitalize Lines

Converts to upper case the first character of every selected line.

Join and Normalize Lines

Joins all the rows you select to one row and normalizes the content.

Insert new line after

Inserts a new line after the line at the cursor position.

Modify all matches

Use this option to modify (in-place) all the occurrences of the selected content. When you use this option, a thin rectangle replaces the highlights and allows you to start editing. If matches with different letter cases are found, a dialog box is displayed that allows you select whether you want to modify only matches with the same letter case or all matches.

Open

Allows you to select one of the following actions:

- **Open File at Cursor** - select this action to open the source of the file located at the cursor position
- **Open File at Cursor in System Application** - select this action to open the source of the file located at the cursor position with the application that the system associates with the file

Compare

Select this option to open the **Compare Files** tool to compare the file you are editing with a file you choose in the dialog box.

Validating JavaScript Files

You have the possibility to validate the JavaScript document you are editing. Oxygen XML Editor plugin uses the Mozilla Rhino library for validation. For more information about this library, go to http://www.mozilla.org/rhino/doc.html. The JavaScript validation process checks for errors in the syntax. Calling a function that is not defined is not treated as an error by the validation process. The interpreter discovers this error when executing the faulted line. Oxygen XML Editor plugin can validate a JavaScript document both on-request and automatically.

Content Completion in JavaScript Documents

When you edit a JavaScript document, the *Content Completion Assistant* presents you a list of the elements you can insert at the cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

For an enhanced assistance, JQuery methods are also presented. The following icons decorate the elements in the content completion list of proposals depending on their type:

- f - function

- V - variable
- ▢ - object
- ● - property
- $f_{()}$ - method

Note: These icons decorate both the elements from the content completion list of proposals and from the **Outline** view.

Figure 523: JavaScript Content Completion Assistant

The *Content Completion Assistant* collects:

- Method names from the current file and from the library files.
- Functions and variables defined in the current file.

If you edit the content of a function, the content completion list of proposals contains all the local variables defined in the current function, or in the functions that contain the current one.

Syntax Highlighting in JavaScript Documents

Oxygen XML Editor plugin supports syntax highlighting in JavaScript files to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for JavaScript files, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **JavaScript** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.

You can see the effects of your changes in the **Preview** pane.

Related Information:

Syntax Highlight Preferences on page 92

JavaScript Outline View

Oxygen XML Editor plugin present a list of all the components of the JavaScript document you are editing in the **Outline** view. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

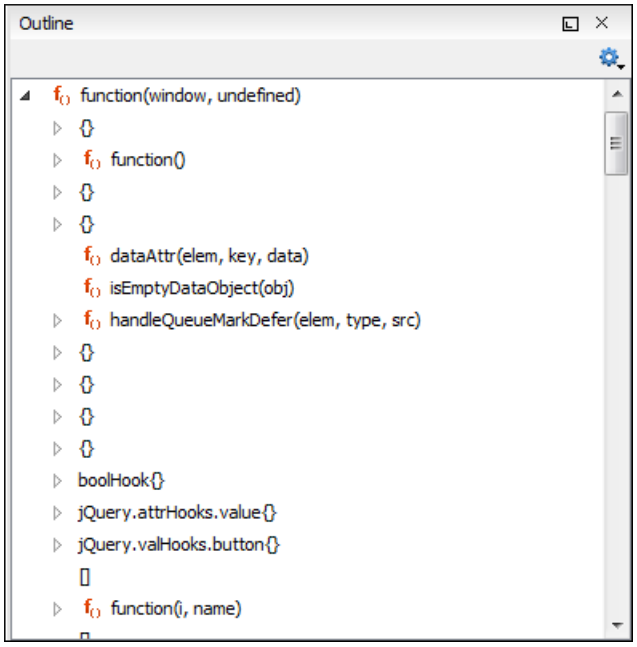


Figure 524: JavaScript Outline View

The following icons decorate the elements in the **Outline** view depending on their type:

- - function
- - variable
- - object
- - property
- - method

The contextual menu of the JavaScript **Outline** view contains the usual **Cut**, **Copy**, **Paste**, and **Delete** actions. From the **Settings** menu, you can select the **Update selection on cursor move** option to synchronize the **Outline** view with the editing area.

Editing XProc Scripts

An XProc script is edited as an XML document that is validated against a RELAX NG schema. If the script has an associated transformation scenario, then the XProc engine from the scenario is invoked as validating engine. The default engine for XProc scenarios is the Calabash engine that comes bundled with Oxygen XML Editor plugin version 20.0.

XProc Content Completion

Oxygen XML Editor plugin helps you edit a XProc scripts through the *Content Completion Assistant*, offering proposals that are valid at the cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

The content completion inside the element `input/inline` from the XProc namespace *http://www.w3.org/ns/xproc* offers elements from the following schemas depending both on the `port` attribute and the parent of the `input` element. When invoking the content completion inside the XProc element `inline`, the list of content completion proposals is populated as follows:

- If the value of the `port` attribute is `stylesheet` and the `xslt` element is the parent of the `input` elements, the *Content Completion Assistant* offers XSLT elements.
- If the value of the `port` attribute is `schema` and the `validate-with-relax-ng` element is the parent of the `input` element, the *Content Completion Assistant* offers RELAX NG schema elements.
- If the value of the `port` attribute is `schema` and the `validate-with-xml-schema` element is the parent of the `input` element, the *Content Completion Assistant* offers XML Schema schema elements.
- If the value of the `port` attribute is `schema` and the `validate-with-schematron` element is the parent of the `input` element , the *Content Completion Assistant* offers either ISO Schematron elements or Schematron 1.5 schema elements.
- If the above cases do not apply, then the *Content Completion Assistant* offers elements from all the schemas from the above cases.

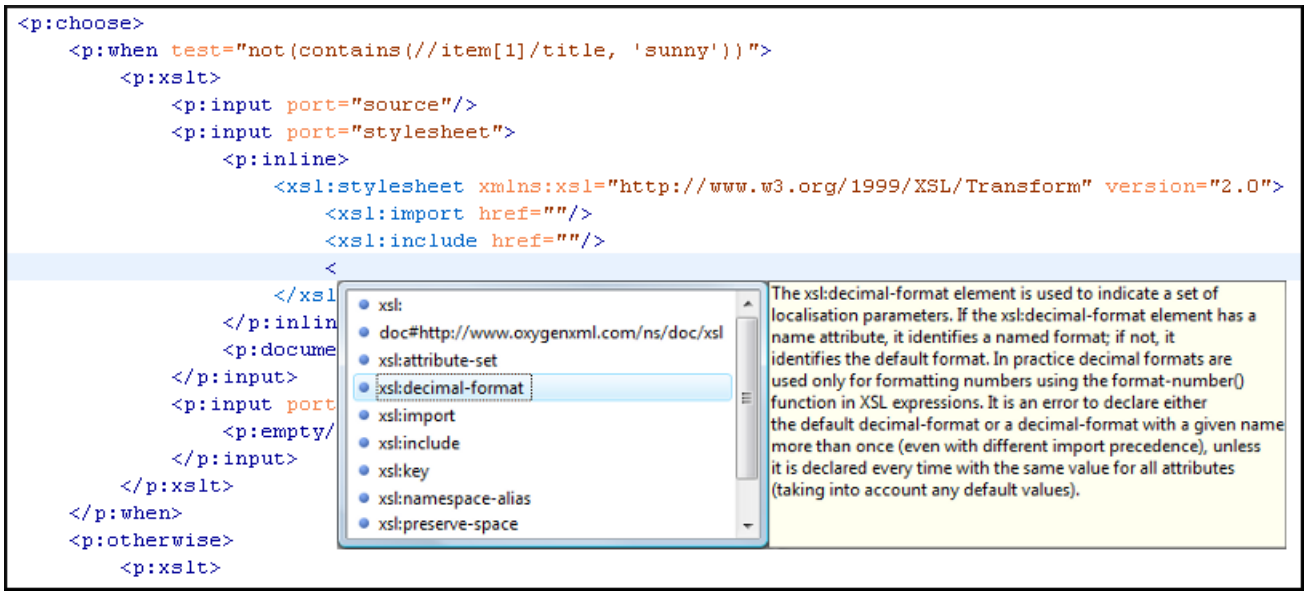


Figure 525: XProc Content Completion

XProc Syntax Highlighting

The XProc editor assists you in writing XPath expressions by offering dedicated coloring schemes for syntax highlighting.

To customize the colors or styles used for the syntax highlighting colors for XProc, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Enabling Extensions in Calabash

If you are using the default Calabash engine, it is possible to configure extensions (for a list of the valid extensions, see http://xmlcalabash.com/docs/reference/cfg.extension.html).

To configure an extension:

1. Edit the following file: `OXYGEN_INSTALL_DIR/lib/xproc/calabash/engine.xml`.
2. Add the extension and its value as a `system-property`, as in the following example:

```
<system-property name="com.xmlcalabash.allow-text-results" value="true"/>
```

Related Information:

Creating an XProc Transformation Scenario on page 971
This type of transformation specifies the parameters and location of an XProc script.

Integrating an External XProc Engine on page 974

Editing Schematron Schemas

Schematron is a simple and powerful Structural Schema Language for making assertions about patterns found in XML documents. It relies almost entirely on XPath query patterns for defining rules and checks. Schematron validation rules allow you to specify a meaningful error message. This error message is provided to you if an error is encountered during the validation stage.

Oxygen XML Editor plugin assists you in editing Schematron documents with schema-based content completion, syntax highlight, search and refactor actions, and dedicated icons for the **Outline** view. You can create a new Schematron schema using one of the Schematron templates available in the **New from Templates** wizard.

For information about applying and detecting Schematron schemas, see Associating a Schema to XML Documents on page 579.

Validating XML Documents Against Schematron

The Skeleton XSLT processor is used for validation and conforms with ISO Schematron or Schematron 1.5. It allows you to validate XML documents against Schematron schemas or against combined RELAX NG / W3C XML Schema and Schematron.

How to Specify the Query Language Binding

You can specify the query language binding to be used in the Schematron schema by doing the following:

- For embedded ISO schematron, open the **Preferences** dialog box , go to **XML** > **XML Parser** > **Schematron**, and select it in the **Embedded rules query language binding** option.
- For standalone ISO Schematron, specify the version by setting the query language to be used in a `queryBinding` attribute on the schema root element. For more information, see the Query Language Binding section of the Schematron specifications.
- For Schematron 1.5 (standalone and embedded), open the **Preferences** dialog box , go to **XML** > **XML Parser** > **Schematron**, and select the version in the **XPath Version** option.

Multi-Lingual Support in Schematron Messages

You can specify the desired language for the validation messages in the **Schematron Preferences** page. The Schematron validation messages can be presented in multiple languages by defining the language for each message using the Schematron `diagnostics`. For more information, see the Use of Schematron for Multi-Lingual Schemas specification.

How to Customize Color Schemes in Schematron

The Schematron editor renders the XPath expressions with dedicated coloring schemes . To customize the coloring schemes, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**.

Schematron Transformation Scenario

When you create a Schematron document, Oxygen XML Editor plugin provides a built-in transformation scenario. You can use this scenario to obtain the XSLT style-sheet corresponding to the Schematron schema. You can apply this XSLT stylesheet to XML documents to obtain the Schematron validation results.

For more information about the Schematron support in Oxygen XML Editor plugin, watch our video demonstrations:

https://www.youtube.com/embed/HdcZA3DJi7E

https://www.youtube.com/embed/y3u3wlO92e4

https://www.youtube.com/embed/FQNSsg57S4E

Related Information:

Editing XML Documents in Text Mode on page 403

Associating a Schema to XML Documents on page 579

Editing Schematron Schema in the Master Files Context

Smaller interrelated modules that define a complex Schematron cannot be correctly edited or validated individually, due to their interdependency with other modules. For example, a diagnostic defined in a main schema document is not visible when you edit an included module. Oxygen XML Editor plugin provides the support for defining the main module (or modules), thus allowing you to edit any of the imported/included schema files in the context of the larger schema structure.

You cat set a main Schematron document either using the *master files* support from the **Navigator** view, or using a validation scenario.

To set a main file using a validation scenario, add validation units that point to the main schemas. Oxygen XML Editor plugin warns you if the current module is not part of the dependencies graph computed for the main schema. In this case, it considers the current module as the main schema.

The advantages of editing in the context of main file include:

- Correct validation of a module in the context of a larger schema structure.
- *Content Completion Assistant* displays all the referable components valid in the current context. This include components defined in modules other than the currently edited one.

Validating Schematron Documents

By default, a Schematron schema is validated as you type. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate a Schematron document manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. When Oxygen XML Editor plugin validates a Schematron schema, it expands all the included modules so the entire schema hierarchy is validated. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Oxygen XML Editor plugin offers an error management mechanism capable of pinpointing errors in XPath expressions and in the included schema modules.

Related Information:

Presenting Schematron Validation Issues

Presenting Schematron Validation Issues

The possible issues that might occur during the validation process when validating XML documents against Schematron are presented with colored underlines in the editing pane, colored markers in the right vertical stripe, and details about the issues are presented in the **Problems** tab at the bottom area of the Oxygen XML Editor plugin window. Each error is flagged with a severity level that can be: *warning*, *error*, *fatal* or *info*.

To set a severity level, Oxygen XML Editor plugin looks for the following information:

- The **role** attribute, which can have one of the following values:
  - **warn** or **warning** - Sets the severity level to *warning*. By default, underlined with a yellow squiggly line in the editing pane and a yellow marker in the right vertical stripe.
  - **error** - Sets the severity level to *error*. By default, underlined with a red squiggly line in the editing pane and a red marker in the right vertical stripe.
  - **fatal** - Sets the severity level to *fatal*. By default, underlined with a red squiggly line in the editing pane and a red marker in the right vertical stripe.
  - **info** or **information** - Sets the severity level to *info*. By default, underlined with a blue squiggly line in the editing pane and a blue marker in the right vertical stripe.

- The start of the message, after trimming leading white-spaces. Oxygen XML Editor plugin looks to match the following exact string of characters (case sensitive):
  - **Warning:** - Sets the severity level to *warning*. By default, underlined with a yellow squiggly line in the editing pane and a yellow marker in the right vertical stripe.
  - **Error:** - Sets the severity level to *error*. By default, underlined with a red squiggly line in the editing pane and a red marker in the right vertical stripe.
  - **Fatal:** - Sets the severity level to *fatal*. By default, underlined with a red squiggly line in the editing pane and a red marker in the right vertical stripe.
  - **Info:** - Sets the severity level to *info*. By default, underlined with a blue squiggly line in the editing pane and a blue marker in the right vertical stripe.
- If none of the previous rules match, Oxygen XML Editor plugin sets the severity level to *error*. By default, underlined with a red squiggly line in the editing pane and a red marker in the right vertical stripe.

Related Information:

Validating XML Documents Against a Schema on page 561
Validation Scenario on page 568
Associating a Schema to XML Documents on page 579
Presenting Validation Errors in Author Mode on page 213
Presenting Validation Errors in Text Mode on page 169

Content Completion in Schematron Documents

Oxygen XML Editor plugin helps you edit a Schematron schema through the *Content Completion Assistant*, offering proposals that are valid at the cursor position. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

When you edit the value of an attribute that refers a component, the proposed components are collected from the entire schema hierarchy. For example, if the editing context is `phase/active/@pattern`, the *Content Completion Assistant* proposes all the defined patterns.

Note: For Schematron resources, the *Content Completion Assistant* collects its components starting from the *master files*. The *master files* can be defined in the project or in the associated validation scenario. For further details about the *Master Files* support go to Defining Master Files at Project Level.

If the editing context is an attribute value that is an XPath expression (such as `assert/@test` or `report/@test`), the *Content Completion Assistant* offers the names of XPath functions, the XPath axes, and user-defined variables.

The *Content Completion Assistant* displays XSLT 1.0 functions and optionally XSLT 2.0 / 3.0 functions in the attributes *path*, *select*, *context*, *subject*, *test* depending on the Schematron options that are set in Preferences pages. If the Saxon 6.5.5 namespace (`xmlns:saxon="http://icl.com/saxon"`) or the Saxon 9.8.0.8 namespace is declared in the Schematron schema (`xmlns:saxon="http://saxon.sf.net/"`) the content completion also displays the XSLT Saxon extension functions as in the following figure:

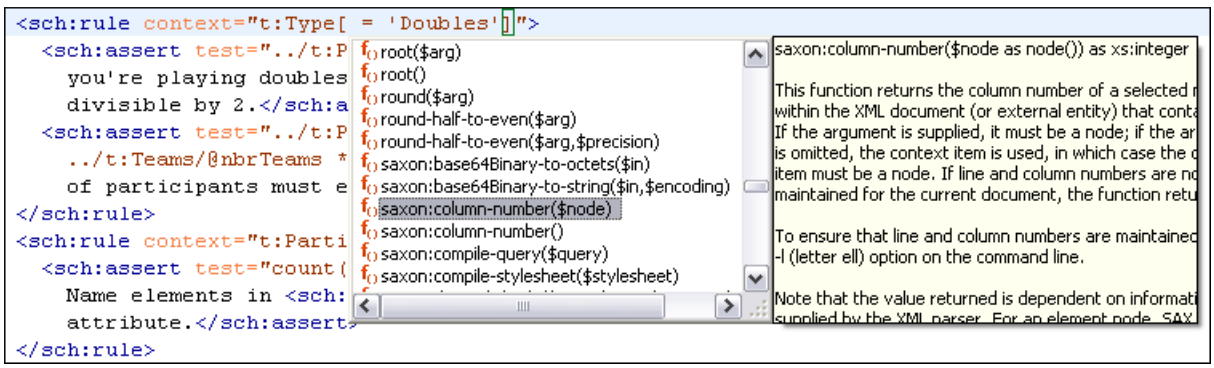


Figure 526: XSLT Extension Functions in Schematron Schema Content Completion

The *Content Completion Assistant* also includes code templates that can be used to quickly insert code fragments into Schematron documents.

Syntax Highlighting in Schematron

Oxygen XML Editor plugin supports syntax highlighting in Schematron schemas to improve the readability of the content and reduce the time it takes to internalize the semantics of the structured content.

To customize the colors or styles used for the syntax highlighting colors for Schematron schemas, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **XML** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.
5. Select the **XML** tab in the **Preview** pane to see the effects of your changes.

Tip: Oxygen XML Editor plugin also allows you to specify syntax highlighting colors for specific XML elements and attributes with specific namespace prefixes. This can be done in the **Editor** > **Syntax Highlight** > **Elements/Attributes by Prefix** preferences page.

Related Information:

Syntax Highlight Preferences on page 92

XML Schema or RELAX NG with Embedded Schematron Rules

Schematron rules can be embedded into an XML Schema through annotations (using the `appinfo` element), or in any element on any level of a RELAX NG Schema (taking into account that the RELAX NG validator ignores all elements that are not in the RELAX NG namespace).

Oxygen XML Editor plugin accepts such documents as Schematron validation schemas and it is able to extract and use the embedded rules.

Validating XML Documents with XML Schema and Embedded Schematron

To validate an XML document with XML Schema and its embedded Schematron, you can associate the document like this:

```
<?xml-model href="percent.xsd" type="application/xml"
            schematypens="http://purl.oclc.org/dsdl/schematron"?>
```

Validating XML Documents with Relax NG and Embedded Schematron

To validate an XML document with RELAX NG schema and its embedded Schematron rules, you need to associate the document with both schemas like this:

```
<?xml-model href="percent.rng" type="application/xml"
            schematypens="http://relaxng.org/ns/structure/1.0"?>
<?xml-model href="percent.rng" type="application/xml"
            schematypens="http://purl.oclc.org/dsdl/schematron"?>
```

The second association validates your document with Schematron rules extracted from the RELAX NG Schema.

Note: When you work with XML Schema or Relax NG documents that have embedded Schematron rules Oxygen XML Editor plugin provides two built-in validation scenarios: **Validate XML Schema with embedded Schematron** for XML schema , and **Validate Relax NG with embedded Schematron** for Relax NG. You can use one of these scenarios to validate the embedded Schematron rules.

Example: Embedded Schematron in XML Schema

```
<xsd:appinfo>
  <sch:pattern>
    <sch:rule context="...">
 <sch:assert test="...">Message.</sch:assert>
    </sch:rule>
  </sch:pattern>
</xsd:appinfo>
```

Example: Embedded Schematron in Relax NG Schema

```
<grammar
    xmlns="http://relaxng.org/ns/structure/1.0"
    xmlns:sch="http://purl.oclc.org/dsdl/schematron" >
    <sch:pattern>
      <sch:rule context="...">
        <sch:assert test="...">Message.</sch:assert>
      </sch:rule>
    </sch:pattern>
    <start>
     ..............
    </start>
</grammar>
```

Related Information:

Embed Schematron Quick Fixes in Relax NG or XML Schema on page 808

Schematron Outline View

The **Outline** view for Schematron schemas presents a list of components in a tree-like structure and it allows for quick access to a component by name. By default, it is displayed on the left side of the editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

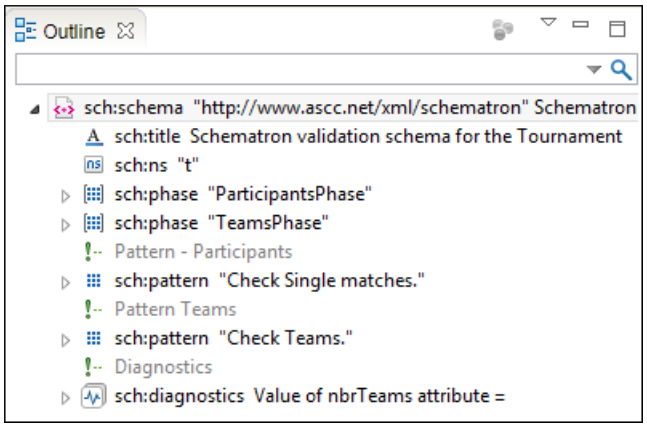


Figure 527: Schematron Outline View

The following actions are available in the **View menu** on the **Outline** view action bar:

Filter returns exact matches

The text filter of the **Outline** view returns only exact matches.

Selection update on cursor move

Controls the synchronization between **Outline** view and source document. The selection in the **Outline** view can be synchronized with the cursor moves or the changes in the editor. Selecting one of the components from the **Outline** view also selects the corresponding item in the source document.

Flat presentation mode of the filtered results

When active, the application flattens the filtered result elements to a single level.

Show comments and processing instructions

Show/hide comments and processing instructions in the **Outline** view.

Show element name

Show/hide element name.

Show text

Show/hide additional text content for the displayed elements.

Show attributes

Show/hide attribute values for the displayed elements. The displayed attribute values can be changed from the Outline preferences panel.

Configure displayed attributes

Displays the XML Structured Outline preferences page.

The following contextual menu actions are also available in the **Outline** view:

Append Child

Displays a list of elements that you can insert as children of the current element.

Insert Before

Displays a list of elements that you can insert as siblings of the current element, before the current element.

Insert After

Displays a list of elements that you can insert as siblings of the current element, after the current element.

Edit Attributes

Opens a dialog box that allows you to edit the attributes of the currently selected component.

Toggle Comment

Comments/uncomments the currently selected element.

Cut

Cuts the currently selected component.

Copy

Copies the currently selected component.

Delete

Deletes the currently selected component.

Expand All

Expands the structure of a component in the **Outline** view.

Collapse All

Collapses the structure of all the component in the **Outline** view.

The upper part of the **Outline** view contains a filter box that allows you to focus on the relevant components. Type a text fragment in the filter box and only the components that match it are presented. For advanced usage you can use wildcard characters (*, ?) and separate multiple patterns with commas.

Schematron Resource Hierarchy/Dependencies View

The **Resource Hierarchy/Dependencies** view allows you to see the hierarchy/dependencies for a Schematron schema. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

If you want to see the hierarchy of a schema, select the desired schema in the **Navigator** view and choose **Resource Hierarchy** from the contextual menu.

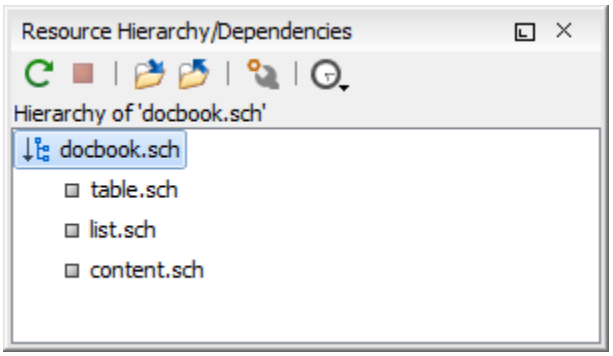


Figure 528: Resource Hierarchy/Dependencies View

If you want to see the dependencies of a schema, select the desired schema in the **Navigator** view and choose **Resource Dependencies** from the contextual menu.

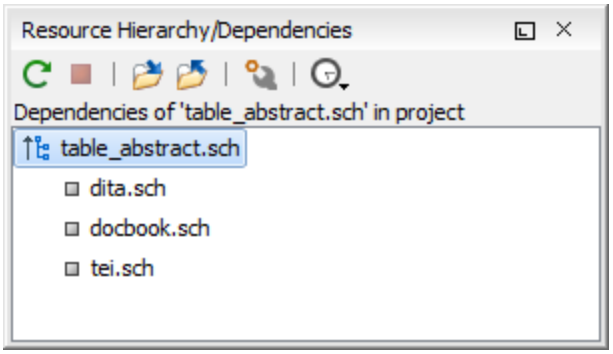


Figure 529: Resource Hierarchy/Dependencies View - Dependencies for `table_abstract.sch`

The following actions are available in the **Resource Hierarchy/Dependencies** view:

Refresh

Refreshes the Hierarchy/Dependencies structure.

Stop

Stops the hierarchy/dependencies computing.

Show Hierarchy

Allows you to choose a resource to compute the hierarchy structure.

Show Dependencies

Allows you to choose a resource to compute the dependencies structure.

Configure

Allows you to configure a scope to compute the dependencies structure. There is also an option for automatically using the defined scope for future operations.

History

Provides access to the list of previously computed dependencies. Use the **Clear history** button to remove all items from this list.

The contextual menu contains the following actions:

Open

Opens the resource. You can also double-click a resource in the Hierarchy/Dependencies structure to open it.

Copy location

Copies the location of the resource.

Move resource

Moves the selected resource.

Rename resource

Renames the selected resource.

Show Resource Hierarchy

Shows the hierarchy for the selected resource.

Show Resource Dependencies

Shows the dependencies for the selected resource.

Add to Master Files

Adds the currently selected resource in the **Master Files** directory.

Expand All

Expands all the children of the selected resource from the Hierarchy/Dependencies structure.

Collapse All

Collapses all children of the selected resource from the Hierarchy/Dependencies structure.

Tip: When a recursive reference is encountered in the Hierarchy view, the reference is marked with a special icon .

Note: The **Move resource** or **Rename resource** actions give you the option to update the references to the resource.

Moving/Renaming Schematron Resources

You can move and rename a resource presented in the **Resource/Hierarchy Dependencies** view, using the **Rename resource** and **Move resource** refactoring actions from the contextual menu.

When you select the **Rename** action in the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Rename resource** dialog box is displayed. The following fields are available:

- **New name** - Presents the current name of the edited resource and allows you to modify it.
- **Update references** - Select this option to update the references to the resource you are renaming.

When you select the **Move** action from the contextual menu of the **Resource/Hierarchy Dependencies** view, the **Move resource** dialog box is displayed. The following fields are available:

- **Destination** - Presents the path to the current location of the resource you want to move and gives you the option to introduce a new location.
- **New name** - Presents the current name of the moved resource and gives you the option to change it.
- **Update references of the moved resource(s)** - Select this option to update the references to the resource you are moving, in accordance with the new location and name.

If the **Update references of the moved resource(s)** option is selected, a **Preview** option (which opens the **Preview** dialog box) is available for both actions. The **Preview** dialog box presents a list with the resources that are updated.

Highlight Component Occurrences in Schematron Documents

When you position your mouse cursor over a component in a Schematron document, Oxygen XML Editor plugin searches for the component declaration and all its references and highlights them automatically.

Customizable colors are used: one for the component definition and another one for component references. Occurrences are displayed until another component is selected.

To change the default behavior of **Highlight Component Occurrences**, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**. You can also trigger a search using the **Search** > **Search Occurrences in File Ctrl + Shift + U (Command + Shift + U on OS X)** action from contextual menu. Matches are displayed in separate tabs of the **Results** view.

Searching and Refactoring Operations in Schematron Documents

Search Actions

The following search actions can be applied on `pattern`, `phase`, or `diagnostic` types and are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

Refactoring Actions

The following refactoring actions can be applied on `pattern`, `phase`, or `diagnostic` types and are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

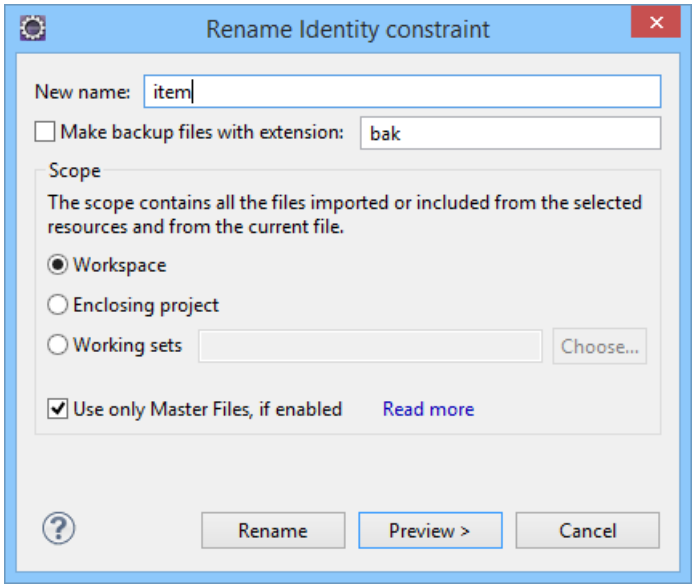


Figure 530: Rename Identity Constraint Dialog Box

Searching and Refactoring Operations Scope in Schematron Documents

The *scope* is a collection of documents that define the context of a search and refactor operation. To control it you can use the **Change scope** operation, available in the *Quick Fix* action set or on the **Resource Hierarchy/ Dependency View** toolbar. You can restrict the scope to the current project or to one or multiple *working sets*. The **Use only Master Files, if enabled** checkbox allows you to restrict the scope of the search and refactor operations to the resources from the **Master Files** directory. Click **read more** for details about the *Master Files* support.

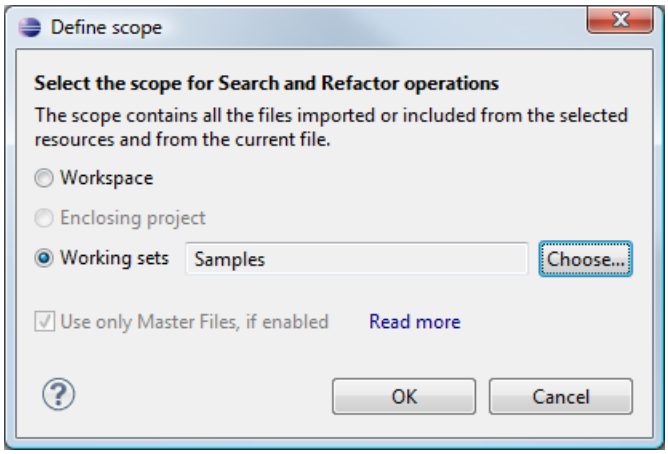


Figure 531: Define Scope Dialog Box

The scope you define is applied to all future search and refactor operations until you modify it. Contextual menu actions allow you to add or delete files, folders, and other resources to the *working set* structure.

Quick Assist Support in Schematron Documents

The *Quick Assist* support improves the development work flow, offering fast access to the most commonly used actions when you edit schema documents.

The *Quick Assist* feature is activated automatically when the cursor is positioned over the name of a component. It is accessible via a yellow bulb icon ( ) placed at the current line in the stripe on the left side of the editor. Also, you can invoke the *quick assist* menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

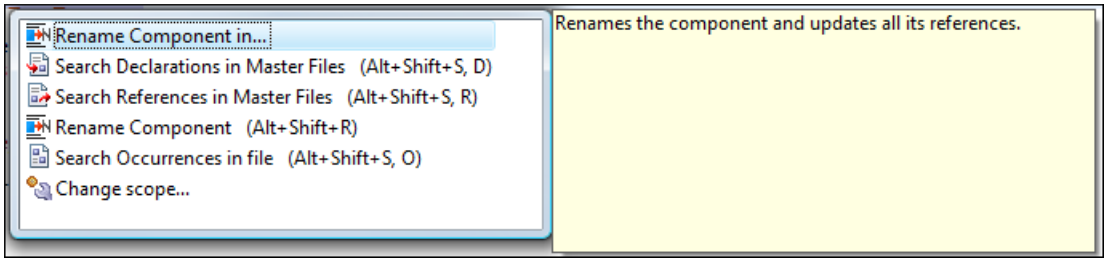


Figure 532: Schematron Quick Assist Support

The *Quick Assist* support offers direct access to the following actions:

Rename Component in

Renames the component and all its dependencies.

Search Declarations

Searches the declaration of the component in a predefined scope. It is available only when the context represents a component name reference.

Search References

Searches all references of the component in a predefined scope.

Component Dependencies

Searches the component dependencies in a predefined scope.

Change Scope

Configures the scope that will be used for future search or refactor operations.

Rename Component

Allows you to rename the current component in-place.

Search Occurrences

Searches all occurrences of the component within the current file.

Schematron Unit Test (XSpec)

XSpec is a behavior driven development (BDD) *framework* for XSLT, XQuery, and Schematron. XSpec consists of a syntax for describing the behavior of your XSLT, XQuery, or Schematron code, and some code that enables you to test your code against those descriptions.

Creating a Schematron Unit Test

To create a Schematron Unit Test, go to **File** > **New** > **Schematron Unit Test**. This is simple document template to help you get started.

Running a Schematron Unit Test

To run a Schematron Unit Test, open the XSpec file in an editor and click **Apply Transformation Scenario(s)** on the main toolbar. This will run the built-in **Run XSpec Test** transformation scenario that is defined in the XSpec *framework*.

Testing a Stylesheet

An XSpec file contains one or more test scenarios.

Example

Suppose you have this Schematron rule that says sections should have a title:

```
  <sch:pattern>
    <sch:rule context="section">
      <sch:assert test="title" id="a002">
        section should have a title
      </sch:assert>
    </sch:rule>
  </sch:pattern>
```

The XSpec test could look like this:

```
<x:description xmlns:x="http://www.jenitennison.com/xslt/xspec" schematron="demo-01.sch">
    <x:scenario label="section should have a title">
      <x:context>
        <article>
          <section>
            <title>Introduction</title>
            <p>This is an example.</p>
          </section>
          <section>
            <p>This is an example.</p>
          </section>
        </article>
      </x:context>

      <x:expect-not-assert id="a002" location="/article[1]/section[1]"/>
      <x:expect-assert id="a002" location="/article[1]/section[2]"/>
    </x:scenario>
</x:description>
```

The `sch:assert` with the `id="a002"` is not expected to be triggered on the first section since it includes a title. This requirement is expressed with the `x:expect-not-assert` element.

Since the second section does not have a title, you would expect the Schematron rule to be triggered and this requirement is expressed with the `x:expect-assert` element.

For more details about how to write Schematron tests and various samples, see https://github.com/xspec/xspec/wiki/Writing-Scenarios-for-Schematron#writing-tests.

Adding a Catalog to an XSpec Transformation

If your Schematron needs a catalog, you can add one to the XSpec transformation by doing one of the following:

- If you are using a project in Oxygen XML Editor plugin, create a `catalog.xml` file in the project directory. This catalog will then be loaded automatically.
- Edit the **Run XSpec Test** transformation scenario, go to the **Parameters** tab, and set the value of the `catalog` parameter to the location of your catalog file.

Editing Schematron Quick Fixes

Oxygen XML Editor plugin provides support for editing the Schematron *Quick Fixes*. You can define a library of *Quick Fixes* by editing them directly in the current Schematron file or in a separate file. Oxygen XML Editor plugin assists you in editing Schematron *Quick Fixes* with schema-based content completion, syntax highlighting, and validation as you type.

For information about applying and detecting the Schematron schemas that include SQF, see Associating a Schema to XML Documents on page 579.

Related Information:

Oxygen XML Blog: Schematron Checks to Help Technical Writing

Schematron Quick Fixes (SQF)

Oxygen XML Editor plugin provides support for Schematron *Quick Fixes* (SQF). They help you resolve issues that appear in XML documents that are validated against Schematron schemas by offering you solution proposals. The Schematron *Quick Fixes* are an extension of the Schematron language and they allow you to define fixes for Schematron validation messages. Specifically, they are associated with *assert* or *report* messages.

A typical use case is using Schematron *Quick Fixes* to assist content authors with common editing tasks. For example, you can use Schematron rules to automatically report certain validation warnings (or errors) when performing regular editing tasks, such as inserting specific elements or changing IDs to match specific naming conventions. For more details and examples, please see the following blog post: http://blog.oxygenxml.com/2015/05/schematron-checks-to-help-technical.html.

Displaying the Schematron Quick Fix Proposals

The defined Schematron *Quick Fixes* are displayed on validation errors in **Text** mode and **Author** mode.

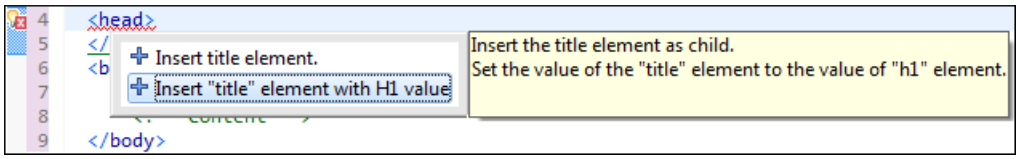


Figure 533: Example of a Schematron Quick Fix

Related Information:

Editing Schematron Quick Fixes on page 800

Schematron Quick Fix Specifications

Presenting Schematron Validation Issues

Defining Schematron Quick Fixes

You can define and customize Schematron *Quick Fixes* directly in the current Schematron file or in a separate Schematron file. The Schematron *Quick Fixes* are an extension of the Schematron language and they allow you to define fixes for Schematron error messages. You can refer the *Quick Fixes* from the `assert` or `report` elements in the values of the `sqf:fix` attributes.

Defining a Schematron Quick Fix

The basics of a Schematron *Quick Fix* is defined by an ID, name, description, and the operations to be executed.

- **ID** - Defined by the `id` attribute from the `fix` element and must be unique in the current context. It is used to refer the *Quick Fix* from a `report` or `assert` element.
- **Name** - The name of the *Quick Fix* is defined by the `title` element.
- **Description** - Defined by the text in the paragraphs (p) of the `description` element.
- **Operations** - The following basic types of operations (elements) are supported:
  - `<sqf:add>` Element - To add a new node or fragment in the document.
  - `<sqf:delete>` Element - To remove a node from the document.
  - `<sqf:replace>` Element - To replace a node with another node or fragment.
  - `<sqf:stringReplace>` Element - To replace text content with other text or a fragment.

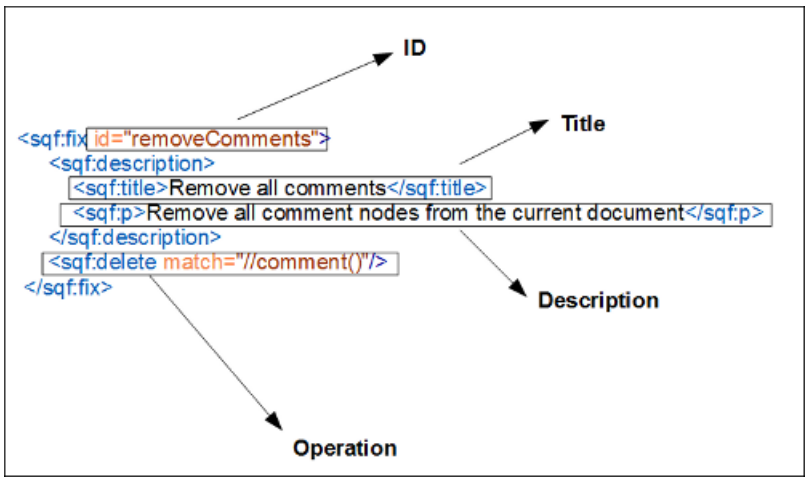


Figure 534: Schematron Quick Fix Components

The assertion message that generates the *Quick Fix* is added as the `description` of the problem to be fixed. The `title` is presented as the name of the *Quick Fix*. The content of the paragraphs (p) within the `description` element are presented in the tooltip message when the *Quick Fix* is selected.

Additional Elements Supported in the Schematron Quick Fixes

`<sqf:user-entry>`

This element defines a value that must be set manually by the user. For more information, see User Entry SQF Operation on page 804.

`<sqf:call-fix>`

This element calls another *Quick Fix* within a *Quick Fix*. The called *Quick Fix* must be defined globally or in the same Schematron rule as the calling *Quick Fix*. A calling *Quick Fix* adopts the activity elements of the called *Quick Fix* and should not include other activity elements. You can also specify which parameters are sent by using the `<sqf:with-param>` child element.

`<sqf:group>`

Allows you to group multiple *Quick Fixes* and refer them from an `assert` or `report` element.

`<sqf:fixes>`

Is defined globally and contains global fixes and groups of fixes.

<sqf:copy-of>

Used to copy the selected nodes that are specified by the `select` attribute. The element with its attribute is treated as an `xsl:copy-of` with a `select` attribute, as defined in the XSLT specification.

<sqf:param>

Defines a parameter for a *Quick Fix*. If the parameter is defined as `abstract` then the `type` and default value should not be specified and the fix can be called from an abstract pattern that defines this parameter.

Other SQF Notes

Note: The `sqf:default-fix` attribute is ignored in Oxygen XML Editor plugin.

For more details on editing Schematron *Quick Fixes*, go to: Schematron Quick Fix Specifications

Basic Schematron Quick Fix Operations

There are four basic operations that can be executed in a Schematron *Quick Fix*: **Add**, **Delete**, **Replace**, and **String Replace**.

Add

The <sqf:add> element allows you to add a node to the instance. An *anchor* node is required to select the position for the new node. The *anchor* node can be selected by the `match` attribute. Otherwise, it is selected by the `context` attribute of the rule.

The `target` attribute defines the name of the node to be added. It is required if the value of the `node-type` attribute is set to anything other than "comment".

The <sqf:add> element has a `position` attribute and it determines the position relative to the *anchor* node. The new node could be specified as the first child of the *anchor* node, the last child of the *anchor* node, before the *anchor* node, or after the *anchor* node (`first-child` is the default value). If you want to add an attribute to the *anchor* node, do not use the `position` attribute.

Note: If you insert an element and its content is empty, Oxygen XML Editor plugin will insert the required element content.

An Example of the <sqf:add> Element:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron"
   xmlns:sqf="http://www.schematron-quickfix.com/validator/process"
 queryBinding="xslt2">
   <pattern>
     <rule context="head">
        <assert test="title" sqf:fix="addTitle">title element missing.</assert>
        <sqf:fix id="addTitle">
            <sqf:description>
                <sqf:title>Insert title element.</sqf:title>
            </sqf:description>
           <sqf:add target="title" node-type="element">Title text</sqf:add>
        </sqf:fix>
     </rule>
   </pattern>
</schema>
```

Specific Add Operations:

- **Insert Element** - To insert an element, use the <sqf:add> element, set the value of the `node-type` to "element", and specify the element *QName* with the `target` attribute. If the element has a prefix, it must be defined in the Schematron using a namespace declaration (`<ns uri="namespace" prefix="prefix"/>`).
- **Insert Attribute** - To insert an attribute, use the <sqf:add> element, set the value of the `node-type` to "attribute", and specify the attribute *QName* with the `target` attribute. If the attribute has a prefix, it must be defined in the Schematron using a namespace declaration (`<ns uri="namespace" prefix="prefix"/>`).
- **Insert Fragment** - If the `node-type` is not specified, the <sqf:add> element will insert an XML fragment. The XML fragment must be well formed. You can specify the fragment in the `add` element or by using the `select` attribute.
- **Insert Comment** - To insert a comment, use the <sqf:add> element and set the value of the `node-type` to "comment".

- **Insert Processing Instruction** - To insert a processing instruction, use the `<sqf:add>` element, set the value of the `node-type` to "pi" or "processing-instruction", and specify the name of the processing instruction in the `target` attribute.

Delete

The `<sqf:delete>` element allows you to remove any type of node (such as elements, attributes, text, comments, or processing instructions). To specify nodes for deletion the `<sqf:delete>` element can include a `match` attribute that is an XPath expression (the default value is `.`). If the `match` attribute is not included, it deletes the context node of the Schematron rule.

An Example of the `<sqf:delete>` Element:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron" queryBinding="xslt2"
    xmlns:sqf="http://www.schematron-quickfix.com/validator/process">
    <pattern>
        <rule context="*[@xml:lang]">
            <report test="@xml:lang" sqf:fix="remove_lang">
                The attribute "xml:lang" is forbidden.</report>
            <sqf:fix id="remove_lang">
                <sqf:description>
                    <sqf:title>Remove "xml:lang" attribute</sqf:title>
                </sqf:description>
                <sqf:delete match="@xml:lang"/>
            </sqf:fix>
        </rule>
    </pattern>
</schema>
```

Replace

The `<sqf:replace>` element allows you to replace nodes. Similar to the `<sqf:delete>` element, it can include a `match` attribute. Otherwise, it replaces the context node of the rule. The `<sqf:replace>` element has three tasks. It identifies the nodes to be replaced, defines the replacing nodes, and defines their content.

An Example of the `<sqf:replace>` Element:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron"
    xmlns:sqf="http://www.schematron-quickfix.com/validator/process"
 queryBinding="xslt2">
    <pattern>
        <rule context="title">
            <report test="exists(ph)" sqf:fix="resolvePh" role="warn">
                ph element is not allowed in title.</report>
            <sqf:fix id="resolvePh">
                <sqf:description>
                    <sqf:title>Change the ph element into text</sqf:title>
                </sqf:description>
                <sqf:replace match="ph">
                    <value-of select="."/>
                </sqf:replace>
            </sqf:fix>
        </rule>
    </pattern>
</schema>
```

Other Attributes for Replace Operations:

- **`node-type`** - Determines the type of the replacing node. The permitted values include:
  - `keep` - Keeps the node type of the node to be replaced.
  - `element` - Replaces the node with an element.
  - `attribute` - Replaces the node with an attribute.
  - `pi` - Replaces the node with a processing instruction.
  - `comment` - Replaces the node with a comment.
- **`target`** - By using a *QName* it gives the replacing node a name. This is necessary when the value of the `node-type` attribute is anything other than "comment".
- **`select`** - Allows you to choose the content of the replacing nodes. You can use XPath expressions with the `select` attribute. If the `select` attribute is not specified then the content of the `<sqf:replace>` element is used instead.

String Replace

The `<sqf:stringReplace>` element is different from the others. It can be used to find a sub-string of text content and replace it with nodes or other strings.

Attributes for the String Replace Operation:

- **`match`** - Allows you to select text nodes that contain the sub-strings you want to replace.
- **`select`** - Allows you to select the replacing fragment, in case you do not want to set it in the content of the `stringReplace` element.
- **`regex`** - Matches the sub-strings using a regular expression.

  Note: Consider the following information about using regular expressions in the `stringReplace` element:

  - The regular expressions from this operation are compiled as Java regular expressions. For more information, see https://docs.oracle.com/javase/7/docs/api/java/util/regex/Pattern.html.
  - The ***j flag*** allows you to use the standard Java regular expression engine, which allows native Java regular expression syntax. This allows, for example, the use of **`\b`** in a regular expression to match word boundaries. For more information, see http://www.saxonica.com/html/documentation/functions/fn/matches.html.
  - Regular expressions in the `<sqf:stringReplace>` element always have the *dot matches all* flag set to "true". Therefore, the line terminator will also be matched by the regular expression.
- **`flags`** - Specifies flags to control the interpretation of the regular expression (given in the `regex` attribute).

Attention: The context of the content within the `<sqf:stringReplace>` element is set to the whole text node, rather than the current sub-string.

An Example of the `<sqf:stringReplace>` Element:

```
<?xml version="1.0" encoding="UTF-8"?>
<sch:schema xmlns:sch="http://purl.oclc.org/dsdl/schematron"
    xmlns:sqf="http://www.schematron-quickfix.com/validator/process"
 queryBinding="xslt2">
    <sch:pattern>
        <sch:rule context="text()">
            <sch:report test="matches(., 'Oxygen', 'i')"
 sqf:fix="changeWord">The oXygen word is not allowed</sch:report>
            <sqf:fix id="changeWord">
                <sqf:description>
                    <sqf:title>Replace word with product</sqf:title>
                </sqf:description>
                <sqf:stringReplace regex="Oxygen" flags="i"><ph keyref="product"/>
                </sqf:stringReplace>
            </sqf:fix>
        </sch:rule>
    </sch:pattern>
</sch:schema>
```

Related Information:

User Entry SQF Operation on page 804
Restricting Quick Fix Operations on page 805

User Entry SQF Operation

The `<sqf:user-entry>` element defines a value that must be set manually by the user. If multiple `user-entry` elements are defined, Oxygen XML Editor plugin will display a dialog box for each one, in which the user can specify values. Also, the `<user-entry>` element can be used as an XPath variable where the XPath variable is the name of the `user-entry`. Note that the `default` attribute defines a default value for the operation by using an XPath expression (as in the example below) and its value will be presented in the user entry dialog box.

An Example of the `<sqf:user-entry>` Element:

```
<sqf:fix id="editTitle">
    <sqf:description>
        <sqf:title>Edit the jurnal title</sqf:title>
    </sqf:description>
    <sqf:user-entry name="newTitle" default="@title">
        <sqf:description>
            <sqf:title>Edit the title:</sqf:title>
        </sqf:description>
    </sqf:user-entry>
    <sqf:replace match="@title" target="title" node-type="keep" select="$newTitle"/>
</sqf:fix>
```

Related Information:

Basic Schematron Quick Fix Operations on page 802

Restricting Quick Fix Operations

To restrict a *Quick Fix* or a specific operation to only be available if certain conditions are met, the `use-when` attribute can be included in the `<sqf:fix>` element or any of the SQF operation elements. The condition of the `use-when` attribute is an XPath expression and the fix or operation will be performed only if the condition is satisfied. In the following example, the `use-when` condition is applied to the `<sqf:fix>` element:

```
<sqf:fix id="last" use-when="$colWidthSummarized - 100 lt $lastWidth"
 role="replace">
   <sqf:description>
       <sqf:title>Subtract excessive width from the last element.</sqf:title>
   </sqf:description>
   <let name="delta" value="$colWidthSummarized - 100"/>
   <sqf:add match="html:col[last()]" target="width" node-type="attribute">
    <let name="newWidth" value="number(substring-before(@width,'%')) - $delta"/>
       <value-of select="concat($newWidth,'%')"/>
   </sqf:add>
</sqf:fix>
```

Related Information:

Basic Schematron Quick Fix Operations on page 802

Formatting/Indenting Content Inserted by SQF Operations

Content that is inserted by the **Add**, **Replace**, or **String Replace** Schematron *Quick Fix* operations is automatically indented unless you set the value of the `xml:space` attribute to `preserve` on the operation element. There are several methods available to format the content that is inserted:

- **`xsl:text`** - You can use an `xsl:text` element to format the inserted content and keep the automatic indentation, as in the following example:

  ```
  <sqf:add position="last-child">
      <row><xsl:text>
      </xsl:text>
          <entry>First column</entry><xsl:text>
          </xsl:text>
          <entry>Second column</entry><xsl:text>
          </xsl:text>
      </row><xsl:text>
      </xsl:text>
  </sqf:add>
  ```

- **`xml:space`** - Use the `xml:space` attribute and set its value to `preserve` to format the content and specify the spacing between elements, as in the following example:

  ```
  <sqf:add node-type="element" target="codeblock" xml:space="preserve">
      /* a long sample program */
      Do forever
       Say "Hello, World"
      End</sqf:add>
  ```

Related Information:

Basic Schematron Quick Fix Operations on page 802

Executing Schematron Quick Fixes in Other Documents

You can apply Schematron *Quick Fixes* over nodes from referenced documents (using XInclude or external entities), and you can access them as nodes in your current document.

Also, you can apply the *Quick Fixes* over other documents using the `doc()` function in the value of the `match` attribute. For example, you can add a new key in the `keylist.xml` file using the following operation:

```
<sqf:add match="doc('keylist.xml')/KeyList" target="Key"
 node-type="element" select="Key2">
```

Generate Multiple Similar Quick Fixes

You can generate the same Schematron *Quick Fix* for multiple matches. To do this, you can add the `use-for-each` attribute inside the `sqf:fix` element and for each match of the XPath expression in the value of the `use-for-each` attribute, a Quick Fix will be presented to the user. The XPath expression does not change the

context of the Quick Fix. If you want to access the current match from the XPath expression, you can use the `$sqf:current` variable.

Example:

Suppose you want to restrict the user from entering more than 4 list items in a list. The following example presents an error on any list that has more than 4 list items and offers a Quick Fix with multiple proposals where the user would specify which list item to remove.

```
<sch:rule context="ul">
    <sch:report test="count(li) gt 4" sqf:fix="removeAnyItem">
        The list cannot contain more than 4 entries.
    </sch:report>
    <sqf:fix id="removeAnyItem" use-for-each="1 to count(li)">
        <sqf:description>
            <sqf:title>Remove item #<sch:value-of select="$sqf:current"/></sqf:title>
        </sqf:description>
        <sqf:delete match="li[$sqf:current]"/>
    </sqf:fix>
</sch:rule>
```

Localizing SQF Messages

Oxygen XML Editor plugin provides support for presenting Schematron Quick Fix messages in multiple languages. The language used for the SQF messages is the language specified in the '**Message Language** option in the **Schematron** preferences page. If you want to provide an alternative message for a specific language, you can reference IDs or key values for the specific alternate text phrase. In Oxygen XML Editor plugin, the alternate text phrase is defined in a `sch:diagnostic` element.

Example:

The following example presents a quick fix with a different message depending on whether the user's language is English or German.

```
<sch:rule context="dog">
  <sch:assert test="bone" diagnostics="d_en d_de" sqf:fix="addBone" >
    A dog should have a bone.</sch:assert>

  <sqf:fix id="addBone">
    <sqf:description>
      <sqf:title ref="fix_en fix_de" xml:lang="en">Add a bone</sqf:title>
      <sqf:p ref="fix_desc_en fix_desc_de" xml:lang="en">Add bone element as child</sqf:p>
    </sqf:description>
    <sqf:add node-type="element" target="bone"/>
  </sqf:fix>
</sch:rule>
....
<sch:diagnostics xml:lang="en">
  <sch:diagnostic id="d_en"> A dog should have a bone. </sch:diagnostic>
  <sch:diagnostic id="fix_en"> Add a bone </sch:diagnostic>
  <sch:diagnostic id="fix_desc_en">Add a bone element as child</sch:diagnostic>
</sch:diagnostics>
<sch:diagnostics xml:lang="de">
  <sch:diagnostic id="d_de"> Ein Hund sollte ein Bein haben. </sch:diagnostic>
  <sch:diagnostic id="fix_de"> FÃ¼gen Sie einen Knochen hinzu </sch:diagnostic>
  <sch:diagnostic id="fix_desc_de"> FÃ¼gen Sie ein Knochenelement als
    untergeordnetes Element hinzu </sch:diagnostic>
</sch:diagnostics>
```

Validating Schematron Quick Fixes

By default, Schematron *Quick Fixes* are validated as you edit them within the Schematron file or while editing them in a separate file. To change this, open the **Preferences** dialog box , go to **Editor** > **Document Checking**, and deselect the **Enable automatic validation** option.

To validate Schematron *Quick Fixes* manually, select the **Validate** action from the **Validation** toolbar drop-down menu or the **XML** menu. The validation problems are highlighted directly in the editor, making it easy to locate and fix any issues.

Related Information:

Validating XML Documents Against a Schema on page 561
Validation Scenario on page 568
Presenting Validation Errors in Author Mode on page 213
Presenting Validation Errors in Text Mode on page 169

Content Completion in SQF

Oxygen XML Editor plugin helps you edit Schematron *Quick Fixes* embedded in a Schematron document by offering proposals that are valid at the cursor position in a *Content Completion Assistant*. It can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut.

When you edit the value of an attribute that references a *Quick Fix ID*, the ids are collected from the entire definition scope. For example, if the editing context is `assert/@sqf:fix`, the *Content Completion Assistant* proposes all fixes defined locally and globally.

If the editing context is an attribute value that is an XPath expression (such as `sqf:add/@match` or `replace/@select`), the *Content Completion Assistant* offers the names of XPath functions, the XPath axes, and user-defined variables and parameters.

The *Content Completion Assistant* displays XSLT 1.0 functions (and optionally XSLT 2.0 / 3.0 functions) in the attributes *path*, *select*, *context*, *subject*, and *test*, depending on the Schematron options that are set in Preferences pages. If the Saxon 6.5.5 namespace (`xmlns:saxon="http://icl.com/saxon"`) or the Saxon 9.8.0.8 namespace is declared in the Schematron schema (`xmlns:saxon="http://saxon.sf.net/"`) the content completion also displays the XSLT Saxon extension functions.

Highlight Quick Fix Occurrences in SQF

When you position your mouse cursor over a *Quick Fix* ID in a Schematron document, Oxygen XML Editor plugin searches for the *Quick Fix* declaration and all its references and highlights them automatically.

Customizable colors are used: one for the *Quick Fix* definition and another one for its references. Occurrences are displayed until another *Quick Fix* is selected.

To change the default behavior of **Highlight Component Occurrences**, open the **Preferences** dialog box and go to **Editor** > **Mark Occurrences**. You can also trigger a search using the **Search** > **Search Occurrences in File (Ctrl + Shift + U (Command + Shift + U on OS X))** action from contextual menu. Matches are displayed in separate tabs of the **Results** view.

Searching and Refactoring Operations in SQF

Search Actions

The following search actions can be applied on *Quick Fix* IDs and are available from the **Search** submenu in the contextual menu of the current editor:

- **Search References** - Searches all references of the item found at current cursor position in the defined scope, if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box is displayed and you have the possibility to define another search scope.
- **Search References in** - Searches all references of the item found at current cursor position in the file or files that you specify when define a scope in the **Search References** dialog box.
- **Search Declarations** - Searches all declarations of the item found at current cursor position in the defined scope if any. If a scope is defined, but the current edited resource is not part of the range of resources determined by this, a warning dialog box will be displayed and you have the possibility to define another search scope.
- **Search Declarations in** - Searches all declarations of the item found at current cursor position in the file or files that you specify when you define a scope for the search operation.
- **Search Occurrences in File** - Searches all occurrences of the item at the cursor position in the currently edited file.

Refactoring Actions

The following refactoring actions can be applied on *Quick Fix* IDs and are available from the **Refactoring** submenu in the contextual menu of the current editor:

- **Rename Component** - Allows you to rename the current component (in-place). The component and all its references in the document are highlighted with a thin border and the changes you make to the component at the cursor position are updated in real time to all occurrences of the component. To exit the in-place editing, press the **Esc** or **Enter** key on your keyboard.
- **Rename Component in** - Opens a dialog box that allows you to rename the selected component by specifying the new component name and the files to be affected by the modification. If you click the **Preview** button, you can view the files to be affected by the action.

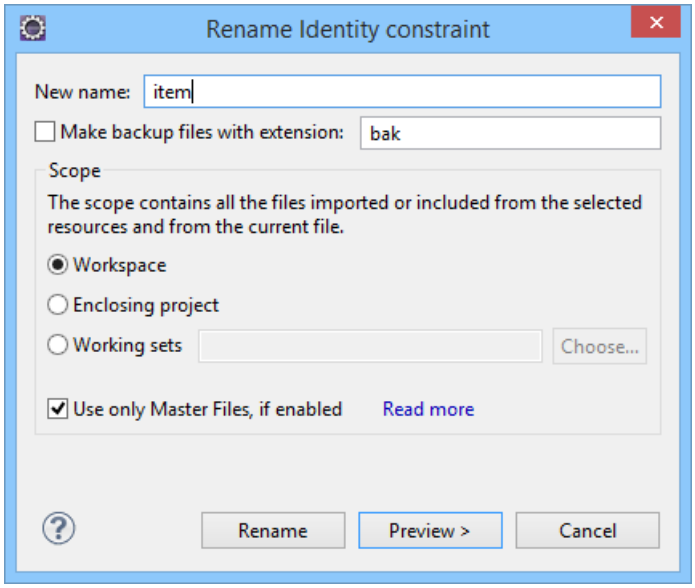


Figure 535: Rename Identity Constraint Dialog Box

Embed Schematron Quick Fixes in Relax NG or XML Schema

Schematron *Quick Fixes* can be embedded into an XML Schema through annotations (using the `appinfo` element), or in a schematron rule embedded in the RELAX NG Schema. For more information about embedding schematron in XML Schema or Relax NG, see XML Schema or RELAX NG with Embedded Schematron Rules on page 792.

Oxygen XML Editor plugin is able to extract and use the embedded Schematron *Quick Fixes*. To make the embedded Schematron *Quick Fixes* available, follow these steps:

1. Define a validation against a schema.
2. For the **Schema type**, choose `XML Schema` or `Relax NG`.
3. Select the **Embedded schematron rules** option.

Example: Embedded Schematron Quick Fix in XML Schema

```
<xsd:appinfo>
  <sch:pattern>
    <sch:rule context="...">
 <sch:assert test="..." sqf:fix="fixId">Message.</sch:assert>
   <sqf:fix id="fixId">
     ......
   </sqf:fix>
    </sch:rule>
  </sch:pattern>
</xsd:appinfo>
```

Example: Embedded Schematron Quick Fix in Relax NG

```
<grammar
    xmlns="http://relaxng.org/ns/structure/1.0"
    xmlns:sch="http://purl.oclc.org/dsdl/schematron" >
    <sch:pattern>
      <sch:rule context="...">
        <sch:assert test="..." sqf:fix="fixId">Message.</sch:assert>
     <sqf:fix id="fixId">
       .....
     </sqf:fix>
      </sch:rule>
```

```
      </sch:pattern>
      <start>
       ..............
      </start>
</grammar>
```

Tip: For more extensive examples, see our samples in the *[OXYGEN_INSTALL_DIR]*`/samples/schematron` folder.

Related Information:

XML Schema or RELAX NG with Embedded Schematron Rules on page 792
Defining Schematron Quick Fixes on page 801

Integrating SQF in a Framework

You can use Schematron *Quick Fixes* to assist your content authors by imposing rules for an entire *framework* (document type) and offering fixes when a rule violation is detected.

For example, if you are using DITA, you may want your contributors to avoid inserting a figure (`fig` element) inside a paragraph (p element) that contains other content since it may result in undesirable placement or spacing in the output. The Schematron rule and its *Quick Fix* for this particular use-case could look like this:

```
<schema xmlns="http://purl.oclc.org/dsdl/schematron"
    xmlns:sqf="http://www.schematron-quickfix.com/validator/process"
 queryBinding="xslt2">
   <pattern id="check.figure.location">
     <rule context="p/fig">
         <report test="true()" role="warn" sqf:fix="moveAfter">
         A figure inside a paragraph doesn't transform well into PDF. </report>
         <sqf:fix id="moveAfter">
             <sqf:description>
                 <sqf:title>Move after the paragraph.</sqf:title>
             </sqf:description>
             <let name="figToMove" value="."/>
             <sqf:add match="parent::p" select="$figToMove" position="after"/>
             <sqf:delete match="."/>
         </sqf:fix>
     </rule>
   </pattern>
</schema>
```

The result of this example would be that the user will see a warning if they insert a `fig` element inside a p element and they are presented with the option of selecting the *Quick Fix* that would move the figure outside the paragraph.

How to Integrate SQF in a Framework

To integrate a Schematron *Quick Fix* in a *framework*, follow these steps:

1. Define a Schematron *Quick Fix* for a rule in an existing or new Schematron file.
2. Save it somewhere in your *framework* directory. For example, the default *framework* directory for DITA is located in: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/`.
3. Add a reference to the Schematron file that includes the SQF in your *framework* by following the procedure in Associating a Schema in Validation Scenarios Defined in the Document Type on page 582.
4. Open a document in your *framework* and test the new rule and *Quick Fix*.
5. You can continue to refine the rule and develop additional rules as needed.

Related Information:

Defining Schematron Quick Fixes on page 801
Basic Schematron Quick Fix Operations on page 802
Associating a Schema in Validation Scenarios Defined in the Document Type on page 582

Editing XHTML Documents

Oxygen XML Editor plugin provides support for editing XHTML files. Oxygen XML Editor plugin includes XHTML catalogs and document templates to help you get started. You can also find a sample file in the *[OXYGEN_INSTALL_DIR]*`/samples/xhtml` folder.

The XHTML editing features include:

- **Source Editing** - You can edit XHTML files in the **Text** editing mode (XML source editor) using all of its useful features.
- **Visual Editing** - You can edit XHTML files in the visual **Author** editing mode using all of its authoring features.
- **Validation** - Easily identify errors and their location with the Oxygen XML Editor plugin XML validation features.
- **Content Completion** - The *Content Completion Assistant* displays a list of context-sensitive proposals that are valid at the current cursor position. In **Text** mode, it can be manually activated with the **Ctrl + Space (Command + Space on OS X)** shortcut, while in **Author** mode, it is activated by simply pressing **Enter**.
- **Import HTML as XHTML** - Oxygen XML Editor plugin includes support for importing HTML files as an XML document.
- **Remote Editing** - Oxygen XML Editor plugin has built-in support for editing documents that are stored on remote servers through FTP, SFTP, and WebDAV protocols, allowing you to edit XHTML pages from your web server.
- **Syntax Highlighting** - XHTML documents with embedded CSS, JS, PHP, and JSP scripts are rendered with dedicated coloring schemes. To customize them, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**. Select and expand the **XHTML** section in the top pane and you can see the effects of your changes in the **Preview** pane.

Related Information:

XHTML Document Type (Framework) on page 862

Editing Markdown Documents

Markdown was created as a lightweight markup language with plain text formatting syntax designed to provide a syntax that is very easy to read and write, and to convert it to HTML and other formats. It is often used by content contributors who want a quick and easy way to write content without having to take their fingers off the keyboard and without having to learn numerous codes or shortcuts, and it can easily be shared interchangeably between virtually any types of contributor and system.

Oxygen XML Editor plugin provides a built-in Markdown editor that allows you to convert Markdown syntax to HTML or DITA and it includes a preview panel to help you visualize the final output. Aside from the plain text syntax that is common amongst most Markdown applications, the editor in Oxygen XML Editor plugin also integrates many other powerful features that content authors are accustomed to using for other types of documents. Some of these additional unique features include:

- Additional toolbar and contextual menu actions.
- Automatic validation to help keep the syntax valid.
- Dedicated syntax highlighting to make Markdown documents even easier to read and write.
- Unique features for creating Markdown documents directly in *DITA maps* and converting Markdown documents to DITA topics.
- Specialized syntax rules to combine popular syntax features from several specifications.

Markdown Editor

Oxygen XML Editor plugin provides an intuitive, dynamic, and easy-to-use Markdown editor for writing and converting Markdown documents. It is a split-screen editor with two panels that are synchronized in real-time. The left side is a simple text editor that is specially designed for writing Markdown syntax. The right side is a WYSIWYG style preview of how changes will look in the output.

Markdown Text Editor Pane (Left Side)

The left pane is a simple text editor that is refined to accept Markdown syntax. At the same time, you still have many of the actions, options, and features that you are used to when editing any other type of document in Oxygen XML Editor plugin.

The features of this special editor that are unique for Markdown documents include:

- **Unique Markdown Syntax Rules** - The Markdown editor in Oxygen XML Editor plugin uses an integration of rules that combine rules from common default Markdown syntax along with many of the rules used in the GitHub Flavored Markdown syntax.
- **Syntax Highlighting** - The Oxygen XML Editor plugin syntax highlighting feature is integrated into the Markdown text editor to make it easier to read and write Markdown syntax. You can even customize the colors and styles for the syntax highlighting.
- **Automatic Spell Checking** - The Markdown editor supports the Oxygen XML Editor plugin automatic spell checking feature that reports possible misspelled words as you type. You simply need to select the **Automatic spell check** option in the **Spell Check** preferences page, then click the **Select editors** button and select **Markdown Editor**.
- **Helpful Toolbar and Contextual Menu Actions** - A variety of unique actions are available from the toolbar to help you insert proper Markdown syntax. The contextual menu also includes some common editing actions, as well as unique actions to export (convert) Markdown documents to HTML or DITA.

WYSIWYG Preview Pane (Right Side)

The right pane is a WYSIWYG *Preview* pane that shows a visual representation of how changes made in the left-side text editor will be converted to HTML or DITA output. The changes you make in the text editor are parsed continually and they are immediately visible in the *Preview* pane. There are two tabs available in the *Preview* pane, one for visualizing DITA output and one for visualizing HTML output. You can switch between the two tabs at the bottom of the pane.

The *Preview* pane includes the following unique features:

- **WYSIWYG Visualization** - This pane presents the Markdown syntax from the left-side text editor in a visual WYSIWYG style interface that is automatically synchronized as you type.
- **Export Options** - The **DITA** tab includes a contextual menu action to export (convert) the current Markdown document to a DITA topic. Similarly, the **HTML** tab includes a contextual menu action to export (convert) it to an XHTML document.
- **Automatic Validation** - As you edit Markdown documents, they are validated automatically. The conversion engine constantly tries to parse your changes and if a change results in an error that prevents the parser from converting the syntax, an error message will be displayed in the *Preview* pane or **Results** view at the bottom of the editor.
- **Print Feature** - The Markdown editor includes a **Print** action that is available in the contextual menu and it allows you to configure options for printing the current document as you see it in the *Preview* pane.
- **Preview Markup** - The Markdown editor includes a **Tags Display Mode** drop-down menu that is available on the toolbar and it allows you to control the amount of markup that is displayed in the *Preview* pane.
- **Specialized DITA Features** - The Markdown editor includes some unique, specialized features to integrate it with the powerful DITA support in Oxygen XML Editor plugin.

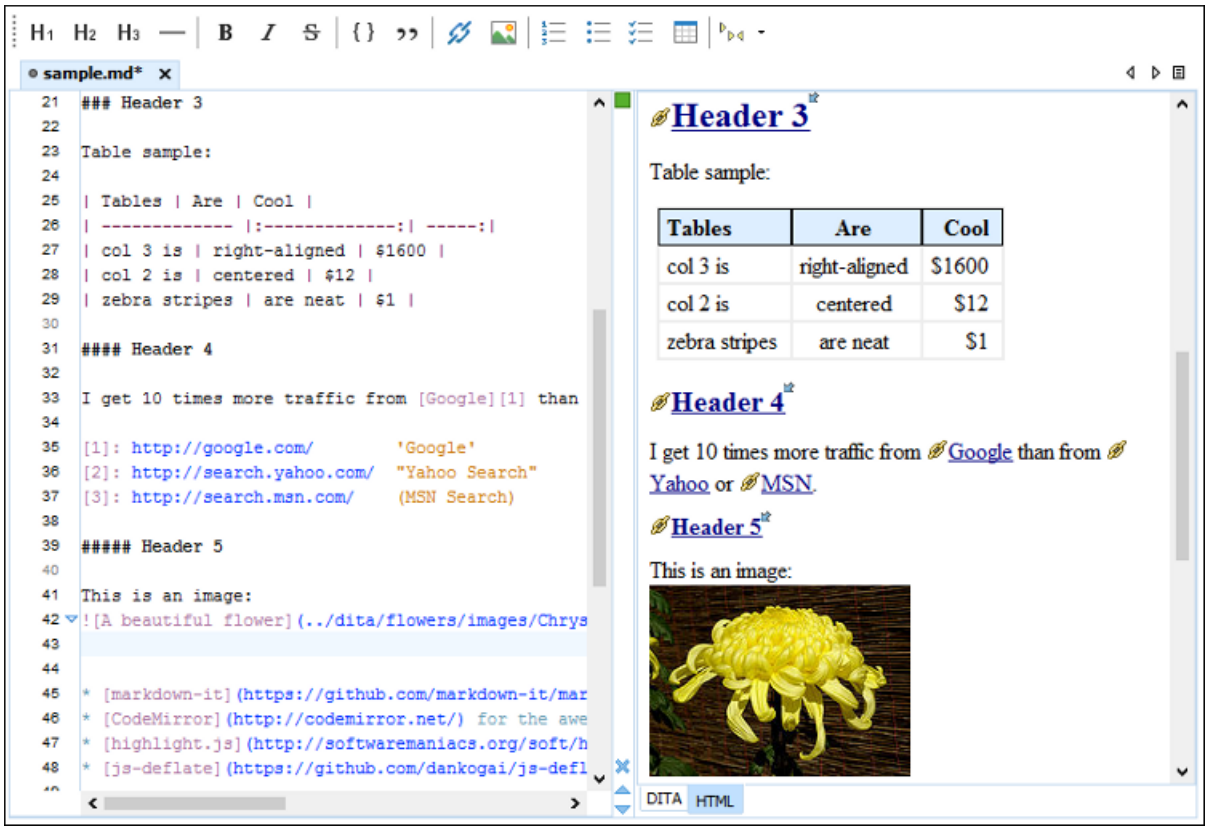


Figure 536: Markdown Editor in Oxygen XML Editor plugin

Related Information:

Markdown Editor Syntax Rules and Specifications on page 817
Actions Available in the Markdown Editor on page 812
Working with Markdown Documents in DITA on page 815
Creating New Markdown Documents on page 812

Creating New Markdown Documents

To create a new Markdown document in Oxygen XML Editor plugin, follow these steps:

1. Click the **New** button on the toolbar or select **File** > **New**.
2. Select the **Markdown** document template.
3. Click **Next**.
4. Choose the storage path and a file name for the new document.
5. Click the **Finish** button.

   Result: A new Markdown document is created and it is opened in the specialized Markdown Editor.

Related Information:

Markdown Editor on page 810

Actions Available in the Markdown Editor

Aside from the actions that are available in Oxygen XML Editor plugin for any type of document (such as the actions in the various menus and the common sections of the toolbar), a variety of unique actions are also available in the Markdown editor, from the toolbar and contextual menu.

Toolbar Actions

The following default actions are readily available on the toolbar when editing Markdown documents:

Header (1st Level)

Inserts an *atx-style* first level header at the cursor position.

Header (2st Level)

Inserts an *atx-style* second level header at the cursor position.

Header (3rd Level)

Inserts an *atx-style* third level header at the cursor position.

Horizontal Rule

Inserts a horizontal rule at the cursor position.

Bold (Strong)

Marks the selected text with bold.

Italic (Emphasis)

Marks the selected text with italics.

Strikethrough

Marks the selected text with a strikethrough.

Code Block

Inserts (or surrounds selected text in) a codeblock.

Blockquote

Inserts a blockquote at the cursor position.

Insert Link

Opens the **Insert Link** dialog box that allows you to define a link to insert at the cursor position.

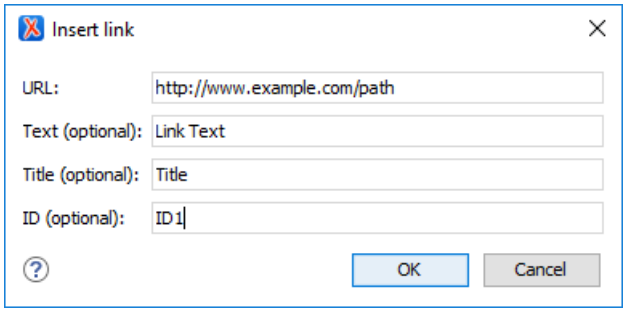


Figure 537: Insert Link Dialog Box

Insert Image

Opens the **Insert Image** dialog box that allows you to define an image to insert at the cursor position. You can type the URL of the image you want to insert or use browsing tools in the **Browse** drop-down menu.

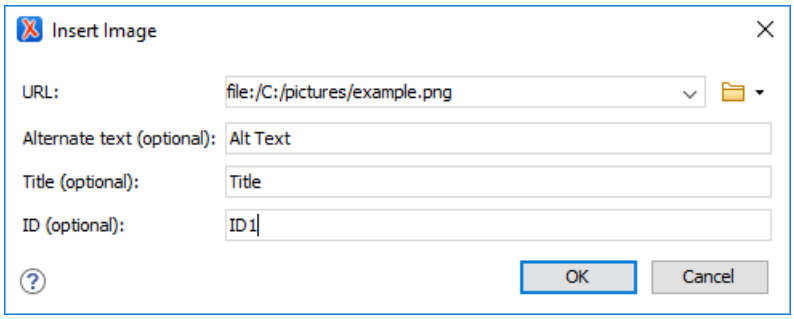


Figure 538: Insert Link Dialog Box

Insert Ordered List

Inserts an ordered list at the cursor position. Three child list items are also automatically inserted by default. You can also use this action to convert selected content to an ordered list.

Insert Unordered List

Inserts an unordered list at the cursor position. Three child list items are also automatically inserted by default. You can also use this action to convert selected content to an unordered list.

Insert Task List

Inserts a task list at the cursor position. Three child list items are also automatically inserted by default. You can also use this action to convert selected content to a task list.

Insert Table

Inserts a table at the cursor position.

Tags Display Mode drop-down menu

Allows you to control the amount of markup that is displayed in the *Preview* pane and offers the following choices:

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline* elements.

Full Tags

Displays full tag names without attributes for both *block* and *inline* elements.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Opens the **Author** preferences page where you can configure options in regards to *tags*, such as the default **Tags Display Mode**, **Tags Background Color**, **Tags Foreground Color**, and **Tags Font**.

Contextual Menu Actions

The following default actions are available in the contextual menu when editing Markdown documents:

Cut, Copy, Paste

Use these actions to execute the typical editing actions on the currently selected content.

Show/Hide Preview

A toggle action that shows or hides the *Preview* pane.

Export as DITA Topic

Converts the current Markdown document into a DITA topic.

Export as HTML

Converts the current Markdown document into an XHTML document.

Print (Available in the *Preview* pane)

Opens a page setup dialog box that allows you to configure printing options for the current document.

Related Information:

Markdown Editor on page 810

Working with Markdown Documents in DITA on page 815
Markdown Editor Syntax Rules and Specifications on page 817

Syntax Highlighting in the Markdown Editor

Oxygen XML Editor plugin supports syntax highlighting in the Markdown editor to improve the readability of the content and make it easier to internalize the semantics of the content.

To customize the colors or styles used for the syntax highlighting colors for Markdown documents, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Editor** > **Syntax Highlight**.
3. Select and expand the **Markdown** section in the top pane.
4. Select the component you want to change and customize the colors or styles using the selectors to the right of the pane.

You can see the effects of your changes in the **Preview** pane.

Related Information:

Syntax Highlight Preferences on page 92
Markdown Editor on page 810

Automatic Validation in Markdown Documents

Markdown documents are validated automatically as you type. The conversion engine constantly tries to parse your changes to display the results in the *Preview* pane. If a change results in an error that prevents the parser from converting the syntax, an error message will be displayed in the **DITA** tab or in the **Results** view at the bottom of the editor.

The types of errors that will be reported include the following:

- Improper order of headers.
- The syntax in a documents begins with something other than a 1st level header.
- Tags are not closed properly if XHTML markup is used in the document.
- Invalid tag names if XHTML markup is used in the document.
- Markup is not well formed if XHTML markup is used in the document.

Related Information:

Markdown Editor on page 810

Working with Markdown Documents in DITA

Oxygen XML Editor plugin includes some unique features that allow you to easily integrate Markdown documents in a DITA project. This is especially helpful for teams that have contributors who are familiar with the Markdown syntax, but they want their output to be generated from DITA projects. The integration between the Markdown editor and DITA includes actions to export or convert Markdown documents to DITA topics and the **DITA** tab in the *Preview* pane provides a visualization of how the topic will look after conversion.

Export Markdown as a DITA Topic

The Markdown editor includes an option to quickly convert the current Markdown document into a DITA topic. The **Export as DITA Topic** action is available in the contextual menu of the left-side text editor and the right-side *Preview* pane when the **DITA** tab selected.

The conversion creates a new XML file that is defined as a DITA topic and opens it in the **Text** editing mode. You can then work with the document as you would with any other DITA topic, although you may need to manually correct some issues where the parser could not properly map Markdown syntax to DITA markup.

Working with Markdown Documents in the DITA Maps Manager

Oxygen XML Editor plugin has some specialized features that allow you to integrate Markdown documents directly into your DITA project using the **DITA Maps Manager**. The following features are available for Markdown documents in the **DITA Maps Manager** view:

- **Insert Reference to Markdown Document** - You can use the **New**, **Reference**, and **Reference to the currently edited file** actions from the **Append Child**, **Insert Before**, or **Insert After** submenu when invoking the contextual menu in the **DITA Maps Manager** to insert a reference to a Markdown document at the selected location in the map. Markdown documents will be inserted as a topic reference (`topicref` element) with the `format` attribute set to `markdown`.
- **Validate Markdown Documents in DITA Maps** - When you use the **Validate and Check for Completeness** action from the **DITA Maps Manager** toolbar to check the integrity of the structure of a *DITA map*, Markdown documents that are referenced in the *DITA map* will be converted to DITA topics in the background and validated the same as any other DITA topic.
- **Transforming DITA Maps with Markdown Documents** - When transforming *DITA maps* that have Markdown documents referenced, the transformation will convert the Markdown documents to normal DITA output without you needing to manually convert the Markdown documents to DITA topics.
- **Manually Convert Markdown Documents to DITA Topics** - If you need to use DITA semantics that are not possible in Markdown syntax (such as content references, related links, and other DITA-specific syntax), you can manually convert the Markdown document into a DITA topic. To do so, right-click the Markdown document in the **DITA Maps Manager** and select **Refactoring** > **Convert Markdown to DITA Topic**. This will open a dialog box that allows you to configure options for converting the document to an XML file that is defined as a DITA topic.

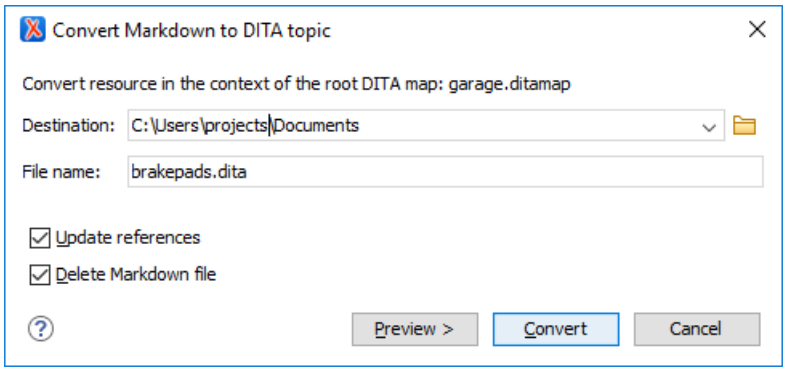


Figure 539: Convert Markdown to DITA Topic Dialog Box

This dialog box includes the following options:

Destination

The destination path for the new DITA topic.

File Name

Presents the current name and allows you to change it.

Update references

Select this option to update all references of the file in the *DITA map* and in the files referenced from the *DITA map*.

Delete Markdown file

If selected, the Markdown version of the file is deleted when the document is converted into a DITA file. If deselected (default value), when the document is converted into a DITA file, the original Markdown file is also preserved in its current location.

Preview

Select this button to display a preview of the changes Oxygen XML Editor plugin is about to make.

Convert

Select this button to perform the conversion.

Tip: Oxygen XML Editor plugin comes with a sample ditamap project for converting Markdown to DITA. Go to the **Navigator** view, open the `sample.xpr` project, and navigate to the `dita/markdown-dita` folder.

Related Information:

Markdown Editor on page 810
Actions Available in the Markdown Editor on page 812
Markdown Editor Syntax Rules and Specifications on page 817
Automatic Validation in Markdown Documents on page 815

Markdown Editor Syntax Rules and Specifications

The Markdown editor in Oxygen XML Editor plugin uses rules that were integrated from the most common set of default Markdown syntax rules along with many of the GitHub Flavored Markdown rules.

The Oxygen XML Editor plugin implementation of the most commonly used syntax rules are as follows:

Headers

The Markdown editor supports two styles of headers, *Setext* and *Atx*.

- **Setext Style**

  Setext-style headers are underlined using equal signs (for first-level headers) and dashes (for second-level headers). Any number of equal signs or dashes will result in the same output.

  Example: Setext Style Headers

```
First-Level Header (H1)
========

Second-Level Header (H2)
------------
```

- **Atx Style**

  Atx-style headers use 1-6 hash characters at the start of the line, corresponding to header levels 1-6. Optionally, you may close atx-style headers. This is purely cosmetic and the closing hashes do not need to match the number of hashes used to open the header. It is the number of opening hashes that determines the header level.

  Example: Atx Style Headers

```
# H1 text #
## H2 text
### H3 text ######
#### H4 text
##### H5 text ###
###### H6 text
```

Horizontal Rules (for HMTL output only)

You can produce a horizontal rule tag (`<hr />`) by placing three or more hyphens, asterisks, or underscores on a line by themselves (they also need to be preceded and followed by a blank line). Optionally, they can be separated by spaces.

- **Example: Horizontal Rules**

```
* * *

*****

---------------------------------------

- - - -
```

Paragraphs and Line Breaks

A paragraph is simply one or more consecutive lines of text, separated by one or more blank lines. The text at the beginning of a paragraph should not be indented with spaces or tabs. To create a new paragraph, simply insert a blank line in between them.

Important: When converting to HTML, if you break a paragraph on multiple lines (without a blank line in between them), it will create a break tag (`<br />`). When converting to DITA, the text is kept in a single paragraph in this case and a blank line is required to break a paragraph. This behavior differs slightly from the default Markdown rules.

- **Example: Paragraphs**

```
This is a paragraph that contains
two lines of text. (In HTML, a break tag is created in between the two lines)

This is a new paragraph.
```

Styling Text

The Markdown editor supports some syntax rules for styling text (such as bold, italic, or strikethrough).

- **Italic (Emphasis)** - Text wrapped with one asterisk or underscore produces an italic (emphasis) tag.

```
*italic*
_italic_
```

- **Bold (Strong)** - Text wrapped with two asterisks or underscores produces a bold (strong) tag.

```
**bold**
__bold__
```

- **Strikethrough** - In HTML only, text wrapped with two tildes (~~) produces a strikethrough tag.

```
~~strikethrough~~
```

Tip: You can also combine these styling rules. For example, `**BoldText _ItalicText_ BoldText**` would produce italicized text within bold text. Also, if you surround an asterisk or underscore with spaces, it will be treated as a literal asterisk or underscore. To produce a literal asterisk or underscore at a position where it would otherwise be used as an styling delimiter, you can escape it with a backslash (for example, `\*literal asterisks\*`.

Links

The Markdown editor supports two types of links, *inline* and *reference*. In both cases, it begins with link text that is delimited by [square brackets].

- **Inline Links**

  To create an inline link, use a set of regular parentheses immediately after the closing square bracket for the link text. Inside the parentheses, put the URL where you want the link to point, and optionally a title surrounded in quotes. Also, if you referencing a local resource on the same server, you can use relative paths.

  Examples: Inline Link

  With a title:

```
Text with [example link text](http://www.example.com/path "Title") inline link and title.
```

  Without a title:

```
Text with [example link text](http://www.example.com/path) inline link without a title.
```

  Relative path:

```
Text with [example link text](/relative_path/) inline link with relative path.
```

- **Reference Links**

Reference-type links use a second set of square brackets that include a label (link identifier) to identify the link (it may consist of letters, numbers, spaces, and punctuation and it is not case sensitive). You can optionally use a space to separate the sets of brackets. The labels (link identifiers) are only used for creating the links and do not appear in the output.

```
Text with [link text1][id 1] a reference-type link and [link text2][id_2] another one.
```

Then, somewhere in the document, you need to define your link label on a line by itself. The link identifier must be within square brackets followed by a colon, then after one or more spaces the URL for the link. Optionally this can be followed by a title enclosed in single quotes, double quotes, or parentheses. Also, the link may optionally be enclosed in angle brackets (< >).

```
[id 1]: http://example1.com/ "Optional Title"
[id_2]: <http://example2.com/> "Optional Title2"
```

Other notes about Reference Links:

- You can put the title on a second line and use extra spaces or tabs for padding. This is useful for aesthetics when the URL is long.

  ```
  [id]: http://example.com/long/path/to/resource/here
      "Optional Title Here"
  ```

- The label (link identifier) can be missing, in which case the link text (in square brackets) is used as the name.

  ```
  [My Link][]
  ```

  and then defined as:

  ```
  [My Link]: http://example.com/
  ```

Automatic Links

The Markdown editor supports a shortcut style for creating automatic links for URLs and email addresses. You simply surround the URL or email address with angle brackets.

Note: These automatic links only work properly in HTML conversions. The *Preview* pane may display them properly in the DITA tab, but the DITA output will not properly recognize the format.

- **URLs**

  By surrounding a URL with angle brackets, you can show the actual text of the URL while also making it clickable in the output.

  ```
  <http://example.com/>
  ```

  For example, in HTML it is converted to:

  ```
  <a href="http://example.com/">http://example.com/</a>
  ```

- **Email Addresses**

  Automatic links for email addresses work similarly, except that Markdown will also perform a bit of randomized decimal and hex entity-encoding to help obscure your address from address-harvesting *spambots*.

  ```
  <address@example.com>
  ```

  In HTML, it is converted to something like:

  ```
  <a href="&#x6D;&#x61;i&#x6C;&#x74;&#x6F;:&#x61;&#x64;&#x64;&#x72;&#x65;
  &#115;&#115;&#64;&#101;&#120;&#x61;&#109;&#x70;&#x6C;e&#x2E;&#99;&#111;
  &#109;">&#x61;&#x64;&#x64;&#x72;&#x65;&#115;&#115;&#64;&#101;&#120;&#x61;
  &#109;&#x70;&#x6C;e&#x2E;&#99;&#111;&#109;</a>
  ```

Images

The Markdown editor uses an image syntax that is intended to resemble the syntax for links, allowing for the same two types: *inline* and *reference*. In both cases, the syntax for images begin with an exclamation mark, followed by `alt` attribute text surrounded by square brackets., and then followed by a set of parentheses that contain the URL or path to the image.

- **Inline Images**

  For inline images, use a set of regular parentheses immediately after the closing square bracket for the `alt` attribute text. Inside the parentheses, put the URL or path of the image, and optionally a title surrounded in quotes.

  Examples: Inline Images

  With a title:

  ```
  Text with ![Alt text](/path/to/img.jpg "Optional title") inline image and a title.
  ```

  Without a title:

  ```
  Text with ![Alt text](/path/to/img.jpg) inline link without a title.
  ```

- **Reference Images**

  For reference-type images, use a second set of square brackets that include a label (image identifier) to identify the image (it may consist of letters, numbers, spaces, and punctuation and it is not case sensitive). You can optionally use a space to separate the sets of brackets. The labels (image identifiers) do not appear in the output.

  ```
  Text with ![Alt text1][id] a reference-type image.
  ```

  Then, somewhere in the document, you need to define your image label on a line by itself. The image identifier must be within square brackets followed by a colon, then after one or more spaces the URL or path of the image. Optionally this can be followed by a title enclosed in single quotes, double quotes, or parentheses.

  ```
  [id]: url/to/image "Optional Title"
  ```

Blockquotes

The Markdown editor uses email-style greater than characters (>) for *blockquotes*. You only need to put the > before the first line of a hard-wrapped paragraph, but it looks better (and is more clear) if you put a > before every line.

- **Example: Blockquotes**

  ```
  > This is a blockquote with two paragraphs. Lorem ipsum dolor sit amet,
  > consectetuer adipiscing elit. Aliquam hendrerit mi posuere lectus.
  > Vestibulum enim wisi, viverra nec, fringilla in, laoreet vitae, risus.
  >
  > Donec sit amet nisl. Aliquam semper ipsum sit amet velit. Suspendisse
  > id sem consectetuer libero luctus adipiscing.
  ```

- *Blockquotes* can be nested by adding additional levels of > characters.

  Example: Nested Blockquotes

  ```
  > This is the first level of quoting.
  >
  > > This is nested blockquote.
  >
  > Back to the first level.
  ```

- *Blockquotes* can also contain other Markdown elements (such as headers, lists, and code blocks).

  Example: Blockquotes with Other Markdown Elements

  ```
  > ## This is a header.
  >
  > 1.   This is the first list item.
  > 2.   This is the second list item.
  >
  > Here's some example code:
  ```

```
>
>     return shell_exec("echo $input | $markdown_script")
```

Quoting Code (Inline and Code Blocks)

The Markdown editor supports quoting code or commands inline within a sentence or in distinct blocks.

- **Inline**

  You can quote or emphasize code within a sentence (inline) with single backticks (`). The text within the backticks will not be formatted.

  Example: Inline Code Emphasis

  ```
  This is a normal sentence with a `code` in the middle.
  ```

- **Code Blocks**

  You can format code or text into its own distinct block by inserting a blank line before and after the content and using at least 4 spaces (or 1 tab), or by using opening and closing triple backticks (```) on separate lines.

  Example: Code Block

  ```
  This is a normal paragraph:

      This is a code block

  This is a normal paragraph:

  ```
  This is a code block
  ```
  ```

  One level of indentation is removed from each line of a codeblock and it continues until it reaches a line that is not indented (or until the closing backticks).

  Example: Code Block with Indentation

  ```
      tell application "something"
          beep
      end tell
  ```

  For example, in HTML the result would look like this:

  ```
  <pre><code>tell application "Foo"
      beep
  end tell
  </code></pre>
  ```

  You can also add an optional language identifier to enable syntax highlighting in your code blocks. The Oxygen XML Editor plugin Markdown editor supports the following languages: *Java*, *JavaScript*, *CSS*, and *Python*.

  Example: Syntax Highlighting in Code Block

  ```
  ```css
  input[type="submit"] {
      color: white;
      font-weight: bold;
  ```
  ```

Inline XHTML (for HMTL output only)

The Markdown editor supports writing inline XHTML. Since Markdown is just a writing format, it requires a conversion for publishing purposes. If you are using the HTML conversion, for any markup that is not covered by Markdown syntax, you can simply use XHTML syntax.

- **Example: Inline XHTML**

  ```
  This is a regular paragraph.

  <table>
      <tr>
          <td>Col 1</td>
          <td>Col 2</td>
      </tr>
  ```

```
</table>

This is another regular paragraph.
```

Lists

The Markdown editor supports ordered and unordered lists. You can also insert *blockquotes* and *code blocks* inside list items. List markers typically start at the left margin, but may be indented by up to three spaces.

- **Unordered Lists**

  For unordered lists, you can use asterisks (*), plus signs (+), and hyphens (-) interchangeably.

```
* List item 1
+ List item 2
- List item 3
```

- **Ordered Lists**

  For ordered lists, use numbers followed by periods. The actual numbers you use have no effect on the output. It simply converts them to list items within an ordered list an the actual number of list items will determine the numbers in the output.

```
1. List item 1
8. List item 2
5. List item 3
```

- **Nested Lists**

  You can create nested lists by indenting lines by two spaces.

```
1. Ordered list item 1
  1. Nested ordered list item 1
  2. Nested ordered list item 2
    * 2nd level nested unordered list item 1
    * 2nd level nested unordered list item 2
      * 3rd level nested unordered list item 1
2. Ordered list item 2
```

- **Paragraphs Inside Lists**

  If list items are separated by blank lines, Markdown will wrap the items in a paragraph in the output.

```
* List item 1

* List item 2
```

  For both DITA and HTML output, this would result in:

```
<ul>
<li><p>List item 1</p></li>
<li><p>List item 2</p></li>
</ul>
```

- **Multiple Paragraphs Inside Lists**

  List items may consist of multiple paragraphs. Each subsequent paragraph in a list item must be indented by either 4 spaces or one tab. Optionally, you can also indent each line of a paragraph to make it look nicer.

```
1.  This is a list item with two paragraphs. Lorem ipsum dolor
    sit amet, consectetuer adipiscing elit. Aliquam hendrerit
    mi posuere lectus.

    Vestibulum enim wisi, viverra nec, fringilla in, laoreet
    vitae, risus. Donec sit amet nisl. Aliquam semper ipsum
    sit amet velit.

2.  Suspendisse id sem consectetuer libero luctus adipiscing.
```

- **Blockquotes Inside Lists**

  To put a *blockquote* within a list item, the blockquote delimiters (>) need to be indented so that it is under the first letter of the text after the list item marker.

```
*   A list item with a blockquote:
    > This is a blockquote
    > inside a list item.
```

- **Code Blocks Inside Lists**

  To put a code block within a list item, insert an empty line in between the list item and the code block, and the code block needs to be indented twice (with 8 spaces or 2 tabs), or if you are using the triple backticks method, the opening triple backtick needs to be indented with 4 spaces or 1 tab.

```
*   A list item with a code block:

        This is a code block inside a list item

    ```
    This is a code block inside a list item using the backticks method
    ```
```

Task Lists

You can create task lists by prefacing list items with a hyphen followed by a space followed by square brackets (`- [ ]`). To mark a task as complete, use `- [x]`.

- **Example: Task Lists**

```
- [ ] Unfinished task 1
- [x] Finished task 2
```

Definition Lists

You can create definition lists by using a colon plus a space for each list item.

- **Example: Definition Lists**

```
Term 1
: Definition A
: Definition B
```

Tables

You can create tables in the Markdown editor by using pipes (`|`) and hyphens (`-`).

- **Creating a Table**

  Pipes are used to separate each column, while hyphens are used to create column headers. The pipes on either end of the table are optional. Cells can vary in width and do not need to be perfectly aligned within columns, but there must be at least three hyphens in each column of the header row.

```
| First Header  | Second Header |
| ------------- | ------------- |
| Column 1 Row 1 Cell  | Column 2 Row 1 Cell  |
| Column 1 Row 2 Cell  | Column 2 Row 2 Cell  |
```

- **Formatting Rules in Table Cells**

  You can use formatting rules inside the cells of the table (such as links, inline code blocks, and text styling).

```
| First Header  | Second Header |
| --- | --- |
| `inline code`  | Content with **bold text** inside cell  |
```

- **Aligning Text in Tables**

  You can align text to the left, right, or center of a column by including colons (`:`) to the left, right, or on both sides of the hyphens within the header row.

```
| Left-aligned | Center-aligned | Right-aligned |
| :---         |     :---:      |          ---: |
| Content Cell | Content Cell   | Content Cell  |
```

- **Joining Cells (Span a Cell Over Multiple Columns)**

You can join cells horizontally (span a cell over multiple columns) by using multiple consecutive pipe characters (`|`) to the right of the particular cell. The number of consecutive pipes indicate the number of columns the cell will span (`||` for two, `|||` for three, and so on).

```
| First Header | Second Header | Third Header | Fourth Header |
| ------------ | ------------- | ------------ | ------------- |
| Content Cell | *Cell Span Over 3 Columns* |||
```

Emoji

You can add *emoji* in the Markdown editor by surrounding the EMOJICODE with colons (`:EMOJICODE:`).

- **Example: Emoji**

```
:smile:
:laughing:
```

The resulting emoticons will appear in the output, but they are not displayed in the *Preview* pane.

For a full list of available emoji codes, see Emoji Cheat Sheet.

Backslash Escapes

You can ignore Markdown formatting by using backslash escapes (`\`) to generate literal characters that would otherwise have special meaning in the Markdown syntax. For example, if you want to surround a word with literal asterisks (instead of an italic or emphasis tag), you can use backslashes to escape the asterisks.

```
\*literal asterisks\*
```

The Markdown editor provides backslash escapes for the following characters:

```
\   backslash
`   backtick
*   asterisk
_   underscore
{}  curly braces
[]  square brackets
()  parentheses
#   hash mark
+   plus sign
-   minus sign (hyphen)
.   dot
!   exclamation mark
```

Automatic Escaping for Special Characters

The Markdown editor includes support for automatically escaping special characters such as angle brackets (< >) and ampersands (&). If you want to use them as literal characters, you must escape them as entities, as in the table below. The exception to this is in HTML output, if the special characters for a valid tag (for example, <b>), they are treated as literal characters and escaping is not necessary.

Literal Character	Escaping Code
<	<
>	>
&	&

Footnotes

The Markdown editor in Oxygen XML Editor plugin supports normal and inline footnotes. The following examples show the required syntax.

- **Example: Normal Footnote**

```
Here is a footnote reference,[^1]

[^1]: Here is the footnote.
```

- **Example: Normal Footnote with Multiple Blocks**

```
Here is a footnote reference,[^longnote]

[^longnote]: Here is the footnote with multiple blocks.

    Subsequent paragraphs are indented with 4 spaces or 1 tab to show that they
belong to the previous footnote.
```

- **Example: Inline Footnote**

```
Here is an inline note.^[Inlines notes are easier to write, since
you don't have to pick an identifier and move down to type the
note.]
```

Related Information:

Default Markdown Syntax

GitHub Flavored Markdown Rules

Markdown Editor on page 810

Actions Available in the Markdown Editor on page 812

Built-in XML Frameworks

9

Topics:

- Predefined Document Types (Frameworks)
- Other Supported Document Types

A *framework* is associated to an XML document type according to a set of rules. It also includes a variety of settings that improve editing capabilities in the **Author** mode for its particular file type. These settings include:

- A default grammar used for validation and content completion in both **Author** mode and **Text** mode.
- CSS stylesheets for rendering XML documents in **Author** mode.
- User actions invoked from toolbars or menus in **Author** mode.
- Predefined scenarios used for transformations for the class of XML documents defined by the document type.
- *XML Catalogs*.
- Directories with document templates.
- User-defined extensions for customizing the interaction with the content author in **Author** mode.

Oxygen XML Editor plugin includes built-in support for many common document types. Each document type is defined in a *framework*. You can create new *frameworks* or make changes to existing *frameworks* to suit your individual requirements.

For more information about configuring a *framework* in Oxygen XML Editor plugin, watch our video:

https://www.youtube.com/embed/Q91lU4qqzpk

Related Information:

Advanced Framework Customization on page 1230
Document Type Configuration Dialog Box on page 48

Predefined Document Types (Frameworks)

Oxygen XML Editor plugin includes a variety of specialized editors, views, and features that are dynamic according to the type of document that you open or create. The type of documents that are supported include the most popular predefined XML *frameworks* that include a full set of features as well as other document types that include more generic or common features.

Predefined Frameworks

The following predefined document types (*frameworks*) are fully supported in Oxygen XML Editor plugin and each of these document types include built-in transformation scenarios, validation, content completion, document templates , default CSS files for rendering content in **Author** mode, and default actions for editing in **Author** mode:

- DocBook 4 - A document type standard for books, articles, and other prose documents (particularly technical documentation).
- DocBook 5 - An enhanced (version 5) document type standard designed for a variety of documents (particularly technical documentation).
- DITA - An XML-based architecture designed for authoring, producing, and delivering technical information.
- DITA Map - A document type that collects and organizes references to DITA topics or other maps.
- XHTML - Extensible HyperText Markup Language includes the same depth of expression as HTML, but also conforms to XML syntax.

- TEI ODD - Text Encoding Initiative One Document Does it all is an XML-conformant specification that allows you to create TEI P5 schema in a literate programming style.
- TEI P5 - The Text Encoding Initiative guidelines is a standard for the academic community that collectively define an XML format for text that is primarily semantic rather than presentational.
- JATS - The NISO Journal Article Tag Suite is a technical standard that defines an XML format for scientific literature.

Related Information:

Advanced Framework Customization on page 1230
Document Type Association Preferences on page 46

DocBook 4 Document Type (Framework)

DocBook is a very popular set of tags for describing books, articles, and other prose documents, particularly technical documentation. DocBook provides a vast number of semantic element tags, divided into three broad categories: structural, *block-level*, and *inline*. DocBook content can then be published in a variety of formats, including HTML, PDF, WebHelp, and EPUB.

File Definition

A file is considered to be a *DocBook 4* document when one of the following conditions are true:

- The root element name is book or `article`.
- The PUBLIC ID of the document contains the string `-//OASIS//DTD DocBook XML`.

Default Document Templates

There are a variety of default *DocBook 4* templates available when creating new documents from templates and they can be found in: **Framework Templates** > **DocBook 4**.

The default templates for DocBook 4 documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Docbook 4` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected in the DocBook 4 file is `docbookxi.dtd` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/4.5/dtd/`.

Default CSS

The default CSS files used for rendering DocBook content in **Author** mode are stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalog

The default *XML Catalog*, `catalog.xml`, is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/`.

Transformation Scenarios

Oxygen XML Editor plugin includes numerous built-in DocBook transformation scenarios that allow you to transform DocBook 4 documents to a variety of outputs, such as WebHelp, PDF, HTML, HTML Chunk, XHTML, XHTML Chunk, and EPUB. All of them are listed in the **DocBook 4** section in the **Configure Transformation Scenario(s)** dialog box.

For more information, see the DocBook Transformation Scenarios on page 885 section.

Resources

- Oxygen Video Tutorial: Editing DocBook Documents in Author Mode

- DocBook Specifications

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403
Adding Tables in DocBook on page 501

DocBook 4 Author Mode Actions

A variety of actions are available in the DocBook 4 *framework* that can be added to the **DocBook4** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DocBook 4 Toolbar Actions

The following default actions are readily available on the **DocBook (Author Custom Actions)** toolbar when editing in **Author** mode (by default, most of them are also available in the **DocBook4** menu and in various submenus of the contextual menu):

Bold

Emphasizes the selected text by surrounding it with `<emphasis role="bold">` tag. You can use this action on multiple non-contiguous selections.

Italic

Emphasizes the selected text by surrounding it with `<emphasis role="italic">` tag. You can use this action on multiple non-contiguous selections.

Underline

Emphasizes the selected text by surrounding it with `<emphasis role="underline">` tag. You can use this action on multiple non-contiguous selections.

Link Actions Drop-Down Menu

The following link actions are available from this menu:

Cross reference (link)

Opens a dialog box that allows you to select a target to insert as a hypertext link.

Cross reference (xref)

Inserts a cross reference to other parts of the document.

Web Link (ulink)

Inserts a link that addresses its target with a URL (Universal Resource Locator).

Insert OLink

Opens an **OLink** dialog box that allows you to insert a link that addresses its target indirectly, using the `targetdoc` and `targetptr` values that are present in a **Targetset** file.

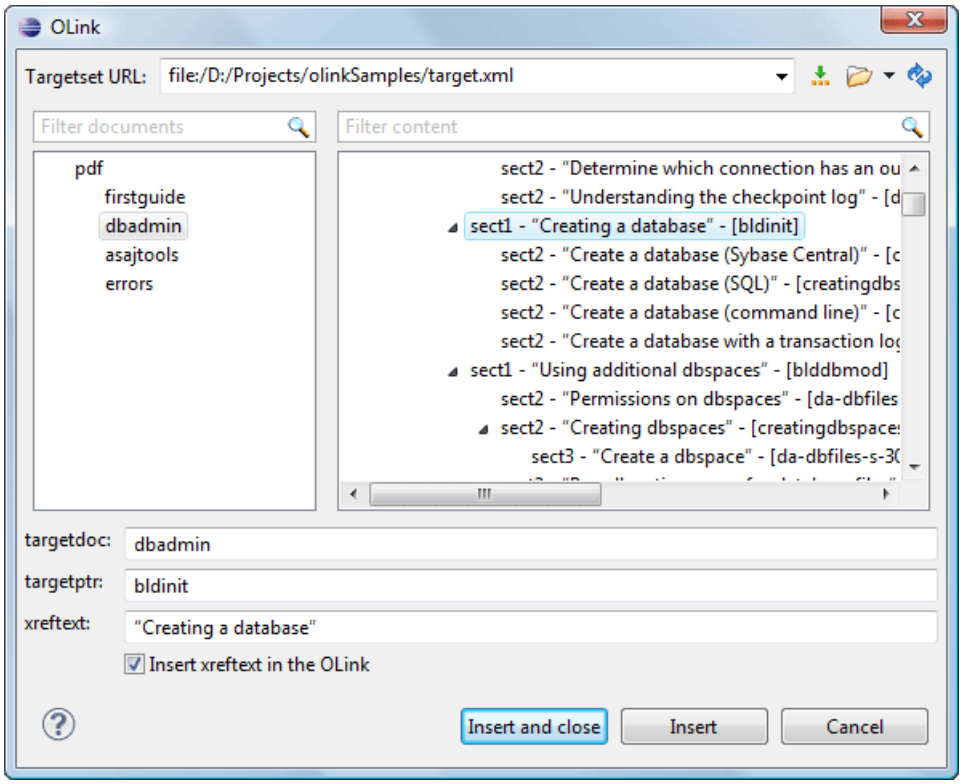


Figure 540: Insert OLink Dialog Box

After you choose the **Targetset URL**, the structure of the target documents is presented. For each target document (`targetdoc`), its content is displayed allowing you to easily identify the `targetptr` for the `olink` element that will be inserted. You can also use the search fields to quickly identify a target. If you already know the values for **targetdoc** and **targetptr**, you can insert them directly in the corresponding fields. You can also edit an `olink` using the **Edit OLink** action that is available on the contextual menu. The last used **Targetset** URL will be used to identify the edited target.

To insert XREF text into the `olink`, enter the text in the **xreftext** field and make sure the **Insert xreftext in the OLink** option is selected.

Insert URI

Inserts a URI element. The URI identifies a Uniform Resource Identifier (URI) in content.

Insert Image

Opens a dialog box that allows you to select the path of an image to insert at the cursor position. Depending on the current location, an image-type element is inserted. If the action is invoked between two block elements (such as paragraphs), the dialog box also allows you to provide a title.

Insert Media Resource

Opens a **Choose Media** dialog box that allows you to select the URL of a media object to be inserted into a document at the cursor position. The result will be that a reference to the specified video, audio, or embedded HTML frame is inserted and rendered in **Author** mode so that it can be played directly from there.

Insert XInclude

Opens a dialog box that allows you to browse and select content to be included and automatically generates the corresponding XInclude instruction.

Section Drop-Down Menu

The following actions are available from this menu:

Insert Section

Inserts a new section or subsection in the document, depending on the current context. For example, if the current context is `sect1`, then a `sect2` is inserted. By default, this action also inserts a `para` element as a child node. The `para` element can be deleted if it is not needed.

Promote Section (Ctrl + Alt + LeftArrow (Command + Alt + LeftArrow on OS X))

Promotes the current node as a sibling of the parent node.

Demote Section (Ctrl + Alt + RightArrow (Command + Alt + RightArrow on OS X))

Demotes the current node a child of the previous node.

Insert Paragraph

Insert a new paragraph element at current cursor position.

Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Insert List Item

Inserts a list item in the current list type.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Insert Itemized List

Inserts an itemized list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an itemized list.

Insert Variable List

Inserts a DocBook variable list. A child list item is also inserted automatically by default. You can also use this action to convert selected paragraphs or other types of lists to a variable list.

Insert Procedure List

Inserts a DocBook `procedure` element. A step `child` item is also inserted automatically. You can also use this action to convert selected paragraphs or other types of lists to a procedure list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

DocBook4 Menu Actions

The following additional actions can be found in the **DocBook4** menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DocBook 4 *framework*:

Paste As XInclude

Allows you to create an `xi:include` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as link

Allows you to create a `link` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as xref

Allows you to create an `xref` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Subscript

Surrounds the selected text with a *subscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly below the baseline and slightly smaller than the rest of the text.

Superscript

Surrounds the selected text with a *superscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly above the baseline and slightly smaller than the rest of the text.

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content

This option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. If this option is not selected, IDs are always retained when you copy or cut content and paste it in the same document or other documents. If this option is selected, IDs are never retained for copied content, but if you cut the content, they are preserved for the first paste action (and not retained for any subsequent paste actions).

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

DocBook 4 Contextual Menu Actions

In addition to many of the DocBook 4 toolbar actions and the *general* **Author** mode contextual menu actions, the following DocBook 4 *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DocBook 4 *framework*:

Paste As XInclude

Allows you to create an `xi:include` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as link

Allows you to create a `link` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as xref

Allows you to create an `xref` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

Link > Edit OLink

Opens a dialog box that allows you edit an existing OLink. See the **Insert OLink** action for more information.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

DocBook 4 Drag/Drop (or Copy/Paste) Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a DocBook 4 document that is edited in **Author** mode, creates a link to the dragged file (the `ulink` DocBook element) at the drop location. Copy and paste actions work the same.

You can also drag images or media files from your system explorer or the **Navigator** view and drop them into a DocBook 4 document (or copy and paste). This will insert the appropriate element at the drop or paste location (for example, dropping/pasting an image will insert the `inlinegraphic` DocBook element with a `fileref` attribute).

Inserting an `olink` in DocBook Documents

The `olink` element is used for linking to resources outside the current DocBook document. The `targetdoc` attribute is used for the document ID that contains the target element and the `targetptr` attribute for the ID of the target element (the value of an `id` or `xml:id` attribute). The combination of those two attributes provides a unique identifier to locate cross references.

For example, a *Mail Administrator Guide* with the document ID `MailAdminGuide` might contain a chapter about user accounts, like this:

```
<chapter id="user_accounts">
<title>Administering User Accounts</title>
<para>blah blah</para>
```

You can form a cross reference to that chapter by adding an `olink`, as in the following example:

```
You may need to update your
<olink targetdoc="MailAdminGuide" targetptr="user_accounts">user accounts
</olink>
when you get a new machine.
```

To use an `olink` to create links between documents, follow these steps:

1. Decide which documents are to be included in the domain for cross referencing.

   A unique ID must be assigned to each document that will be referenced with an `olink`. It is usually added as an `id` (or `xml:id` for DocBook5) attribute to the root element of the document.
2. Decide on your output hierarchy.

   For creating links between documents, the relative locations of the output documents must be known. Before going further you must decide the names and locations of the output directories for all the documents from the domain. Each directory will be represented by an element: `<dir name="directory_name">`, in the target database document.
3. Create the target database document.

   Each collection of documents has a master target database document that is used to resolve all `olinks` from that collection. The target database document is an XML file that is created once. It provides a means for pulling in the target data for each document. The database document is static and all the document data is pulled in dynamically.

   Example: The following is an example of a target database document. It structures a collection of documents in a `sitemap` element that provides the relative locations of the outputs (HTML in this example). Then it pulls in the individual target data using system entity references to target data files that will be created in the next step.

   ```
   <?xml version="1.0" encoding="utf-8"?>
   <!DOCTYPE targetset [
   <!ENTITY ugtargets SYSTEM "file:///doc/userguide/target.db">
   <!ENTITY agtargets SYSTEM "file:///doc/adminguide/target.db">
   <!ENTITY reftargets SYSTEM "file:///doc/man/target.db">
   ]>
   <targetset>
     <targetsetinfo>
       Description of this target database document,
       which is for the examples in olink doc.
     </targetsetinfo>

     <!-- Site map for generating relative paths between documents -->
     <sitemap>
       <dir name="documentation">
         <dir name="guides">
           <dir name="mailuser">
             <document targetdoc="MailUserGuide"
                       baseuri="userguide.html">
               &ugtargets;
             </document>
           </dir>
           <dir name="mailadmin">
             <document targetdoc="MailAdminGuide">
               &agtargets;
             </document>
           </dir>
         </dir>
         <dir name="reference">
           <dir name="mailref">
             <document targetdoc="MailReference">
               &reftargets;
             </document>
           </dir>
         </dir>
       </dir>
     </sitemap>
   </targetset>
   ```
4. Generate the target data files by executing a DocBook transformation scenario.

   Before applying the transformation, you need to edit the transformation scenario, go to the **Parameters** tab, and make sure the value of the `collect.xref.targets` parameter is set to `yes`. The default name of a target data file is `target.db`, but it can be changed by setting an absolute file path in the `targets.filename` parameter.

Example: An example of a `target.db` file:

```
<div element="book" href="#MailAdminGuide" number="1" targetptr="user_accounts">
 <ttl>Administering User Accounts</ttl>
 <xreftext>How to administer user accounts</xreftext>
 <div element="part" href="#d5e4" number="I">
  <ttl>First Part</ttl>
  <xreftext>Part I, “First Part”</xreftext>
  <div element="chapter" href="#d5e6" number="1">
    <ttl>Chapter Title</ttl>
    <xreftext>Chapter 1, Chapter Title</xreftext>
    <div element="sect1" href="#src_chapter" number="1" targetptr="src_chapter">
      <ttl>Section1 Title</ttl>
      <xreftext>xreflabel_here</xreftext>
    </div>
  </div>
 </div>
</div>
```

5. Insert `olink` elements in the DocBook documents.

   When editing a DocBook XML document in **Author** mode, the **Insert OLink** action is available in the **Link** drop-down menu from the toolbar. This action opens the **Insert OLink** dialog box that allows you to select the target of an `olink` from the list of all possible targets from a specified target database document (specified in the **Targetset URL** field). Once a **Targetset URL** is selected, the structure of the target documents is presented. For each target document (`targetdoc`), its content is displayed, allowing you to easily identify the appropriate `targetptr`. You can also use the search fields to quickly identify a target. If you already know the values for the `targetdoc` and `targetptr` attributes, you can insert them directly in the corresponding fields.

   Example: In the following image, the target database document is called `target.xml`, *dbadmin* is selected for the target document (`targetdoc`), and *bldinit* is selected as the value for the `targetptr` attribute. Notice that you can also add XREF text into the `olink` by using the `xreftext` field.

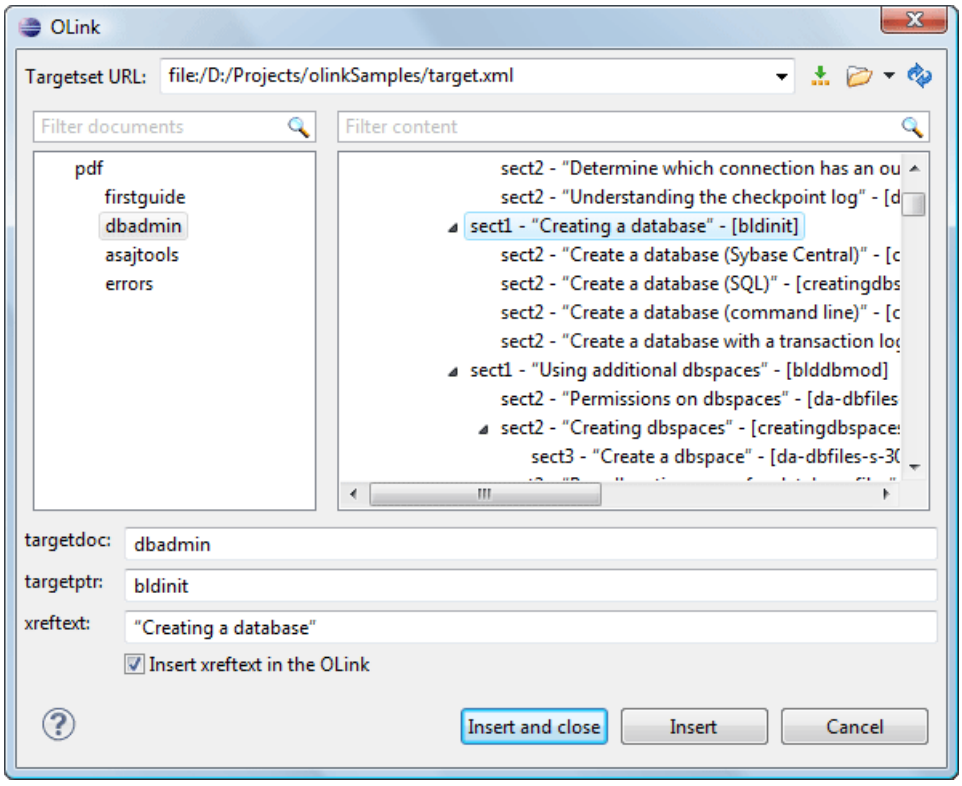


Figure 541: Insert OLink Dialog Box

6. Process a DocBook transformation for each document to generate the output.
   a) Edit the transformation scenario and set the value of the `target.database.document` parameter to be the URL of the target database document.
   b) Apply the transformation scenario.

DocBook 5 Document Type (Framework)

DocBook is a very popular set of tags for describing books, articles, and other prose documents, particularly technical documentation. DocBook provides a vast number of semantic element tags, divided into three broad categories: structural, *block-level*, and *inline*. DocBook content can then be published in a variety of formats, including HTML, PDF, WebHelp, and EPUB.

File Definition

A file is considered to be a DocBook 5 document when the namespace is *http://docbook.org/ns/docbook*.

Default Document Templates

There are a variety of default *DocBook 5* templates available when creating new documents from templates and they can be found in: **Framework Templates** > **DocBook 5** > **DocBook 5.0** and **Framework Templates** > **DocBook 5** > **DocBook 5.1**.

New document templates for both DocBook 5 documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Docbook5.0` folder.

New document templates for both DocBook 5.1 documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Docbook5.1` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected is `docbookxi.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/5.0/rng/` (or for DocBook 5.1 in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/5.1/rng/`). Other types of schemas for various DocBook versions are also located in various folders inside the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/` directory.

Default CSS

The default CSS files used for rendering DocBook content in **Author** mode is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Transformation Scenarios

Oxygen XML Editor plugin includes numerous built-in DocBook transformation scenarios that allow you to transform DocBook 5 documents to a variety of outputs, such as WebHelp, PDF, HTML, HTML Chunk, XHTML, XHTML Chunk, and EPUB. Oxygen XML Editor plugin also includes a DocBook 5.1 transformation scenario for *Assembly* documents. All of them are listed in the **DocBook 5** section in the **Configure Transformation Scenario(s)** dialog box.

For more information, see the DocBook Transformation Scenarios on page 885 section.

Resources

- Oxygen Video Tutorial: Editing DocBook Documents in Author Mode
- DocBook 5.0 (and older) Specifications
- Docbook 5.1 Specifications
- DocBook 5.1: The Definitive Guide

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403
Adding Tables in DocBook on page 501
DocBook 5.1 Assembly on page 847
DocBook 5.1 Topic on page 847

DocBook 5 Author Mode Actions

A variety of actions are available in the DocBook 5 *framework* that can be added to the **DocBook5** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DocBook 5 Toolbar Actions

The following default actions are readily available on the **DocBook (Author Custom Actions)** toolbar when editing in **Author** mode (by default, most of them are also available in the **DocBook5** menu and in various submenus of the contextual menu):

Bold

Emphasizes the selected text by surrounding it with `<emphasis role="bold">` tag. You can use this action on multiple non-contiguous selections.

Italic

Emphasizes the selected text by surrounding it with `<emphasis role="italic">` tag. You can use this action on multiple non-contiguous selections.

Underline

Emphasizes the selected text by surrounding it with `<emphasis role="underline">` tag. You can use this action on multiple non-contiguous selections.

Link Actions Drop-Down Menu

The following link actions are available from this menu:

Cross reference (link)

Opens a dialog box that allows you to select a target to insert as a hypertext link.

Cross reference (xref)

Inserts a cross reference to other parts of the document.

Web Link (ulink)

Inserts a link that addresses its target with a URL (Universal Resource Locator).

Insert OLink

Opens an **OLink** dialog box that allows you to insert a link that addresses its target indirectly, using the `targetdoc` and `targetptr` values that are present in a **Targetset** file.

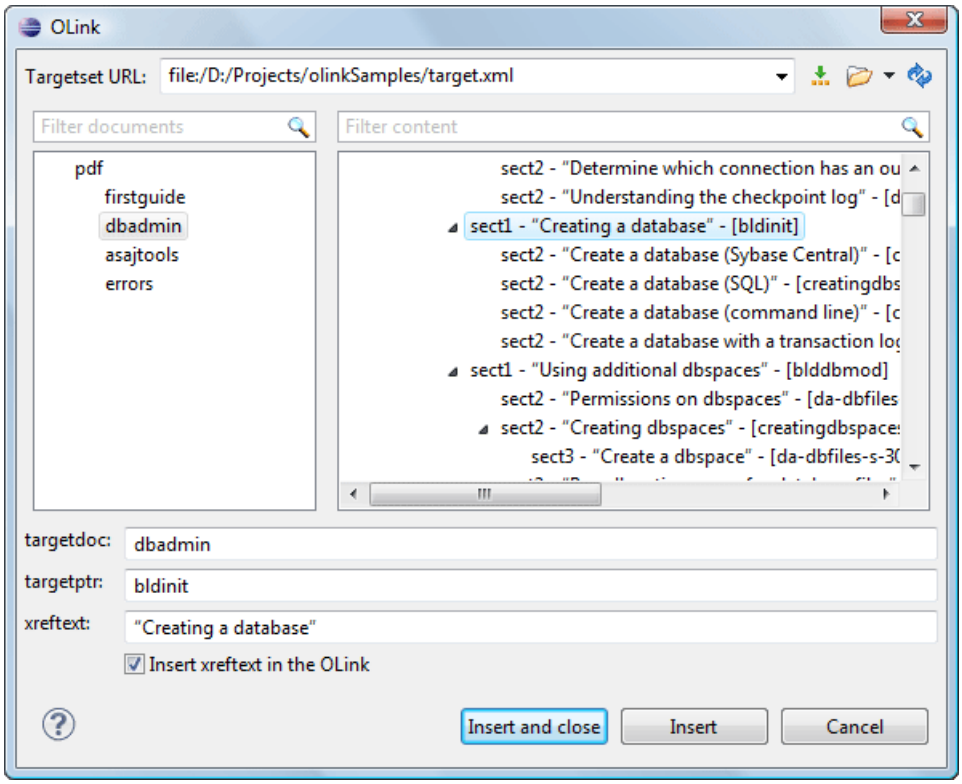


Figure 542: Insert OLink Dialog Box

After you choose the **Targetset URL**, the structure of the target documents is presented. For each target document (`targetdoc`), its content is displayed allowing you to easily identify the `targetptr` for the `olink` element that will be inserted. You can also use the search fields to quickly identify a target. If you already know the values for **targetdoc** and **targetptr**, you can insert them directly in the corresponding fields. You can also edit an `olink` using the **Edit OLink** action that is available on the contextual menu. The last used **Targetset** URL will be used to identify the edited target.

To insert XREF text into the `olink`, enter the text in the **xreftext** field and make sure the **Insert xreftext in the OLink** option is selected.

Insert URI

Inserts a URI element. The URI identifies a Uniform Resource Identifier (URI) in content.

Insert Image

Opens a dialog box that allows you to select the path of an image to insert at the cursor position. Depending on the current location, an image-type element is inserted. If the action is invoked between two block elements (such as paragraphs), the dialog box also allows you to provide a title.

Insert Media Resource

Opens a **Choose Media** dialog box that allows you to select the URL of a media object to be inserted into a document at the cursor position. The result will be that a reference to the specified video, audio, or embedded HTML frame is inserted and rendered in **Author** mode so that it can be played directly from there.

Insert XInclude

Opens a dialog box that allows you to browse and select content to be included and automatically generates the corresponding XInclude instruction.

Section Drop-Down Menu

The following actions are available from this menu:

Insert Section

Inserts a new section or subsection in the document, depending on the current context. For example, if the current context is `sect1`, then a `sect2` is inserted. By default, this action also inserts a `para` element as a child node. The `para` element can be deleted if it is not needed.

Promote Section (Ctrl + Alt + LeftArrow (Command + Alt + LeftArrow on OS X))

Promotes the current node as a sibling of the parent node.

Demote Section (Ctrl + Alt + RightArrow (Command + Alt + RightArrow on OS X))

Demotes the current node a child of the previous node.

Insert Paragraph

Insert a new paragraph element at current cursor position.

Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Insert List Item

Inserts a list item in the current list type.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Insert Itemized List

Inserts an itemized list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an itemized list.

Insert Variable List

Inserts a DocBook variable list. A child list item is also inserted automatically by default. You can also use this action to convert selected paragraphs or other types of lists to a variable list.

Insert Procedure List

Inserts a DocBook `procedure` element. A step `child` item is also inserted automatically. You can also use this action to convert selected paragraphs or other types of lists to a procedure list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

DocBook5 Menu Actions

The following additional actions can be found in the **DocBook5** menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DocBook 5 *framework*:

Paste As XInclude

Allows you to create an `xi:include` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as link

Allows you to create a `link` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as xref

Allows you to create an `xref` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Subscript

Surrounds the selected text with a *subscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly below the baseline and slightly smaller than the rest of the text.

Superscript

Surrounds the selected text with a *superscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly above the baseline and slightly smaller than the rest of the text.

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content

This option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. If this option is not selected, IDs are always retained when you copy or cut content and paste it in the same document or other documents. If this option is selected, IDs are never retained for copied content, but if you cut the content, they are preserved for the first paste action (and not retained for any subsequent paste actions).

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

DocBook 5 Contextual Menu Actions

In addition to many of the DocBook 5 toolbar actions and the *general* **Author** mode contextual menu actions, the following DocBook 5 *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DocBook 5 *framework*:

Paste As XInclude

Allows you to create an `xi:include` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as link

Allows you to create a `link` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Paste as xref

Allows you to create an `xref` element that references a DocBook element copied from **Author** mode. The operation fails if the copied element does not have a declared ID.

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

Link > Edit OLink

Opens a dialog box that allows you edit an existing OLink. See the **Insert OLink** action for more information.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

DocBook 5 Drag/Drop (or Copy/Paste) Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a DocBook 5 document that is edited in **Author** mode, creates a link to the dragged file (the `link` DocBook element) at the drop location. Copy and paste actions work the same.

You can also drag images or media files from your system explorer or the **Navigator** view and drop them into a DocBook 5 document (or copy and paste). This will insert the appropriate element at the drop or paste location (for example, dropping/pasting an image will insert the `imageobject` DocBook element with an `imagedata` child element and a `fileref` attribute).

Inserting an `olink` in DocBook Documents

The `olink` element is used for linking to resources outside the current DocBook document. The `targetdoc` attribute is used for the document ID that contains the target element and the `targetptr` attribute for the ID of the target element (the value of an `id` or `xml:id` attribute). The combination of those two attributes provides a unique identifier to locate cross references.

For example, a *Mail Administrator Guide* with the document ID `MailAdminGuide` might contain a chapter about user accounts, like this:

```
<chapter id="user_accounts">
<title>Administering User Accounts</title>
<para>blah blah</para>
```

You can form a cross reference to that chapter by adding an `olink`, as in the following example:

```
You may need to update your
<olink targetdoc="MailAdminGuide" targetptr="user_accounts">user accounts
</olink>
when you get a new machine.
```

To use an `olink` to create links between documents, follow these steps:

1. Decide which documents are to be included in the domain for cross referencing.

   A unique ID must be assigned to each document that will be referenced with an `olink`. It is usually added as an `id` (or `xml:id` for DocBook5) attribute to the root element of the document.
2. Decide on your output hierarchy.

   For creating links between documents, the relative locations of the output documents must be known. Before going further you must decide the names and locations of the output directories for all the documents from the domain. Each directory will be represented by an element: `<dir name="directory_name">`, in the target database document.
3. Create the target database document.

   Each collection of documents has a master target database document that is used to resolve all `olinks` from that collection. The target database document is an XML file that is created once. It provides a means for pulling in the target data for each document. The database document is static and all the document data is pulled in dynamically.

   Example: The following is an example of a target database document. It structures a collection of documents in a `sitemap` element that provides the relative locations of the outputs (HTML in this example). Then it pulls in the individual target data using system entity references to target data files that will be created in the next step.

   ```
   <?xml version="1.0" encoding="utf-8"?>
   <!DOCTYPE targetset [
   <!ENTITY ugtargets SYSTEM "file:///doc/userguide/target.db">
   <!ENTITY agtargets SYSTEM "file:///doc/adminguide/target.db">
   <!ENTITY reftargets SYSTEM "file:///doc/man/target.db">
   ]>
   <targetset>
     <targetsetinfo>
       Description of this target database document,
       which is for the examples in olink doc.
     </targetsetinfo>

     <!-- Site map for generating relative paths between documents -->
     <sitemap>
       <dir name="documentation">
         <dir name="guides">
           <dir name="mailuser">
             <document targetdoc="MailUserGuide"
                       baseuri="userguide.html">
               &ugtargets;
             </document>
           </dir>
           <dir name="mailadmin">
             <document targetdoc="MailAdminGuide">
               &agtargets;
             </document>
           </dir>
         </dir>
         <dir name="reference">
           <dir name="mailref">
             <document targetdoc="MailReference">
               &reftargets;
             </document>
           </dir>
         </dir>
       </dir>
     </sitemap>
   </targetset>
   ```
4. Generate the target data files by executing a DocBook transformation scenario.

   Before applying the transformation, you need to edit the transformation scenario, go to the **Parameters** tab, and make sure the value of the `collect.xref.targets` parameter is set to `yes`. The default name of a target data file is `target.db`, but it can be changed by setting an absolute file path in the `targets.filename` parameter.

Example: An example of a `target.db` file:

```
<div element="book" href="#MailAdminGuide" number="1" targetptr="user_accounts">
 <ttl>Administering User Accounts</ttl>
 <xreftext>How to administer user accounts</xreftext>
 <div element="part" href="#d5e4" number="I">
  <ttl>First Part</ttl>
  <xreftext>Part I, “First Part”</xreftext>
  <div element="chapter" href="#d5e6" number="1">
    <ttl>Chapter Title</ttl>
    <xreftext>Chapter 1, Chapter Title</xreftext>
    <div element="sect1" href="#src_chapter" number="1" targetptr="src_chapter">
      <ttl>Section1 Title</ttl>
      <xreftext>xreflabel_here</xreftext>
    </div>
  </div>
 </div>
</div>
```

5. Insert `olink` elements in the DocBook documents.

   When editing a DocBook XML document in **Author** mode, the **Insert OLink** action is available in the **Link** drop-down menu from the toolbar. This action opens the **Insert OLink** dialog box that allows you to select the target of an `olink` from the list of all possible targets from a specified target database document (specified in the **Targetset URL** field). Once a **Targetset URL** is selected, the structure of the target documents is presented. For each target document (`targetdoc`), its content is displayed, allowing you to easily identify the appropriate `targetptr`. You can also use the search fields to quickly identify a target. If you already know the values for the `targetdoc` and `targetptr` attributes, you can insert them directly in the corresponding fields.

   Example: In the following image, the target database document is called `target.xml`, *dbadmin* is selected for the target document (`targetdoc`), and *bldinit* is selected as the value for the `targetptr` attribute. Notice that you can also add XREF text into the `olink` by using the `xreftext` field.

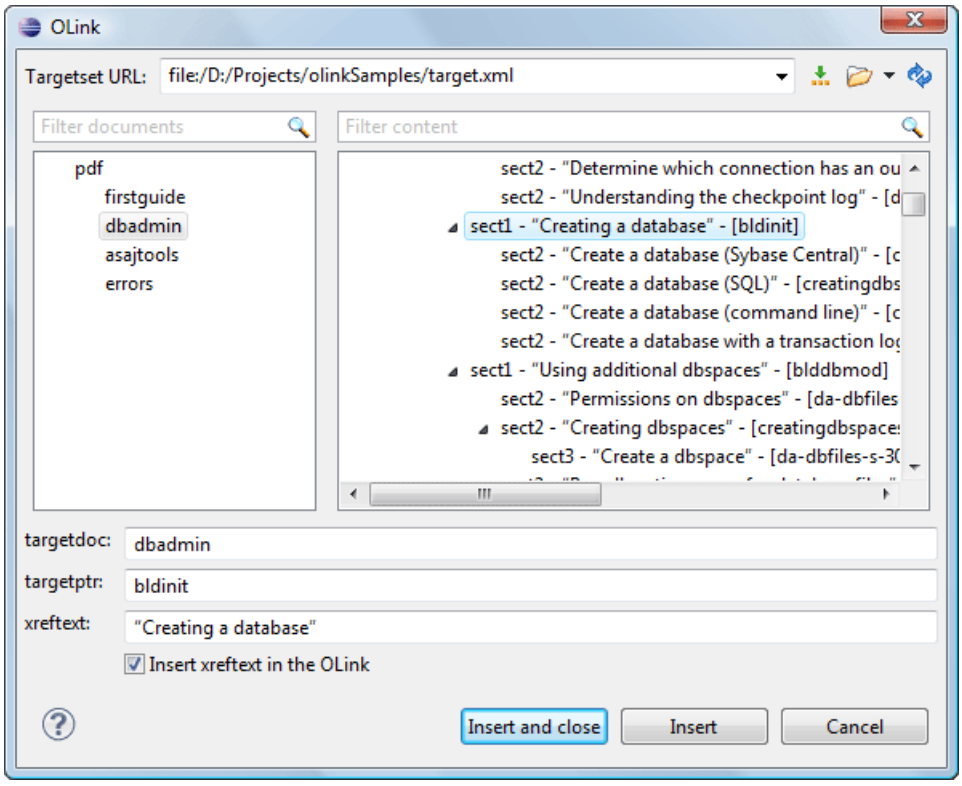


Figure 543: Insert OLink Dialog Box

6. Process a DocBook transformation for each document to generate the output.
   a) Edit the transformation scenario and set the value of the `target.database.document` parameter to be the URL of the target database document.
   b) Apply the transformation scenario.

DocBook 5.1 Assembly

The DocBook *Assembly* document type was introduced with DocBook 5.1 and it is used to define the hierarchy and relationships for a collection of resources. It is especially helpful for topic-oriented authoring scenarios since it assembles a set of resources (such as DocBook 5.1 *topics*) to form a hierarchical structure for a larger publication.

An *Assembly* document usually has four major parts:

- **Resources** - Identifies a collection of resources (such as topics). An *Assembly* may identify one or more collections.
- **Structure** - Identifies an artifact to be assembled. A document in this case is the particular collection of resources (such as topics) that forms the documentation. Within the `structure` element, an `output` element can be used to identify the type of output to be generated and `module` elements can be used to identify the resources to be included. An *Assembly* may identify one or more *structures*.
- **Relationships** - Identifies relationships between resources. These relationships may be manifested in any number of *structures* during assembly. An *Assembly* may identify any number of relationships.
- **Transformations** - Identifies transformations that can be applied during assembly. An *Assembly* may identify any number of transformations.

For detailed information about the DocBook *Assembly* document type, see DocBook 5.1: The Definitive Guide - DocBook Assemblies.

File Definition

A file is considered to be an *Assembly* when the root name is `assembly`.

Default Document Templates

A default **Assembly** document template is available when creating new documents from templates and it can be found in: **Framework Templates** > **DocBook 5** > **DocBook 5.1**.

The default template for DocBook Assembly documents is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Docbook5.1` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected is `docbookxi.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/5.1/rng/`.

Transformation Scenarios

Oxygen XML Editor plugin includes a built-in transformation scenario that can be applied on an *Assembly* file to generate an *assembled* (merged) DocBook file. The scenarios is called **DocBook Assembly** and is found in the **DocBook 5** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- DocBook 5.1: The Definitive Guide - DocBook Assemblies
- Docbook 5.1 Specifications
- Sample files: *[OXYGEN_INSTALL_DIR]*`/samples/docbook/v5/assembly/`

DocBook 5.1 Topic

The DocBook *Topic* document type was introduced with DocBook 5.1 and it is used as a modular unit of documentation. It is similar to the concept of the DITA *Topic* and can be used as modular resources in conjunction with DocBook 5.1 *Assembly* documents.

For detailed information about the DocBook *Topic* document type, see DocBook 5.1: The Definitive Guide - Topic.

File Definition

A DocBook file is considered to be a *Topic* when the root name is `topic`.

Default Document Templates

A default **Topic** document template is available when creating new documents from templates and it can be found in: **Framework Templates** > **DocBook 5** > **DocBook 5.1**.

The default template for DocBook Assembly documents is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Docbook5.1` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected is `docbookxi.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/5.1/rng/`.

Transformation Scenarios

Since DocBook *Topics* are modular resources, they are *assembled* and transformed in the **DocBook Assembly** transformation process. You can also use any of the built-in DocBook transformation scenarios to transform individual DocBook Topics to a variety of outputs, such as PDF, HTML, EPUB, and more. They are found in the **DocBook 5** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- DocBook 5.1: The Definitive Guide - Topic
- Docbook 5.1 Specifications
- Sample files: *[OXYGEN_INSTALL_DIR]*`/samples/docbook/v5/assembly/`

Related Information:

DocBook 5.1 Assembly on page 847

DocBook Targetset Document Type (Framework)

DocBook *Targetset* documents are used to resolve cross references with the DocBook `olink`.

File Definition

A file is considered to be a *Targetset* when the root name is `targetset`.

Default Document Templates

A default **Map** document template is available when creating new documents from templates and it can be found in: **Framework Templates** > **DocBook Targetset**.

The default template for DocBook Targetset documents is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/templates/Targetset` folder.

Default Schema for Validation and Content Completion

The default schema, `targetdatabase.dtd`, for this type of document is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/xsl/common/`.

Resources

- DocBook Specifications

DITA Topics Document Type (Framework)

The Darwin Information Typing Architecture (DITA) is an XML-based architecture for authoring, producing, and delivering technical information. It divides content into small, self-contained topics that you can reuse in various deliverables. The extensibility of DITA permits organizations to define specific information structures while still

using standard tools to work with them. DITA content is created as topics, each an individual XML file. Typically, each topic has a defined primary objective and structure, and DITA also includes several specialized topic types (*task*, *concept*, *reference*, *glossary entry*).

For much more detailed information, resources, and instructions, see the DITA Authoring on page 1458 chapter.

File Definition

A file is considered to be a DITA topic document when one of the following conditions are true:

- The root element name is one of the following: `concept`, `task`, `reference`, `dita`, or `topic`.
- The PUBLIC ID of the document is a PUBLIC ID for the elements listed above.
- The root element of the file has an attribute named `DITAArchVersion` for the "http://dita.oasis-open.org/architecture/2005/" namespace. This enhanced case of matching is only applied when the **Enable DTD/XML Schema processing in document type detection** option is selected from the **Document Type Association** preferences page.

Default Document Templates

There are a variety of default *DITA topic* templates available when creating new documents from templates and they can be found in various folders inside: **Framework Templates** > **DITA**.

The default templates for DITA topic documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/templates/topic` folder.

Default Schema for Validation and Content Completion

Default schemas that are used if one is not detected in the DITA documents are stored in the various folders inside *DITA-OT-DIR*`/dtd/` or *DITA-OT-DIR*`/schema/`.

Default CSS

The default CSS files used for rendering DITA content in **Author** mode are stored in the various folders inside: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for the DITA topic document type are as follows:

- *DITA-OT-DIR*`/catalog-dita.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/plugin/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/styleguide/catalog.xml`

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform individual DITA Topics to a XHTML or PDF output. They can be found in the **DITA** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- DITA Specifications
- DITA Style Guide Best Practices for Authors
- Oxygen Video Tutorial: DITA Editing

Related Information:

DITA Authoring on page 1458

Getting Started with DITA on page 8

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403

DITA Author Mode Actions

A variety of actions are available in the DITA *framework* that can be added to the **DITA** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DITA Toolbar Actions

The following default actions are readily available on the **DITA (Author Custom Actions)** toolbar when editing in **Author** mode (by default, most of them are also available in the **DITA** menu and in various submenus of the contextual menu):

Bold

Surrounds the selected text with a b tag. You can use this action on multiple non-contiguous selections.

Italic

Surrounds the selected text with an `i` tag. You can use this action on multiple non-contiguous selections.

Underline

Surrounds the selected text with a u tag. You can use this action on multiple non-contiguous selections.

Link Actions Drop-Down Menu

The following link actions are available from this menu:

Cross Reference

Opens the **Cross Reference (xref)** dialog box that allows you to insert a link to a target DITA resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource. For more information, see Linking in DITA Topics on page 1563.

File Reference

Opens the **File Reference** dialog box that allows you to insert a link to a target non-DITA file resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. For more information, see Linking in DITA Topics on page 1563.

Web Link

Opens the **Web Link** dialog box that allows you to insert a link to a target web-related resource at the current location within a document. The target resource can be a URL or a key that is already defined in your *DITA map* structure. For more information, see Linking in DITA Topics on page 1563.

Related Link to Topic

Opens the **Cross Reference (xref)** dialog box that allows you to insert a link to a target DITA resource in a related links section at the bottom of the current document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Related Link to File

Opens the **File Reference** dialog box that allows you to insert a link to a target non-DITA file resource in a related links section at the bottom of the current document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Related Link to Web Page

Opens the **Web Link** dialog box that allows you to insert a link to a target web-related resource in a related links section at the bottom of the current document. The target resource can be a URL or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Insert Image

Opens the **Insert Image** dialog box that allows you to configure the properties of an image to be inserted into a DITA document at the cursor position.

Insert Media Resource

Opens the **Insert Media** dialog box that allows you to select and configure the properties of a media object to be inserted into a DITA document at the cursor position. The result will be that a reference to the specified video, audio, or embedded HTML frame is inserted in an `object` element and it is rendered in **Author** mode so that it can be played directly from there.

Insert Section Drop-Down Menu

The following insert actions are available from this menu:

Insert Section

Inserts a new `section` element in the document, depending on the current context.

Insert Concept

Inserts a new `concept` element, depending on the current context. Concepts provide background information that users must know before they can successfully work with a product or interface.

Insert Task

Inserts a new `task` element, depending on the current context. Tasks are the main building blocks for task-oriented user assistance. They generally provide step-by-step instructions that will help a user to perform a task.

Insert Topic

Inserts a new `topic` element, depending on the current context. Topics are the basic units of DITA content and are usually organized around a single subject.

Insert Reference

Inserts a new `reference` element, depending on the current context. A reference is a top-level container for a reference topic.

Insert Paragraph

Inserts a new paragraph at current cursor position.

Reuse Content

This action provides a mechanism for reusing content fragments. It opens the **Reuse Content** dialog box that allows you to insert several types of references to reusable content at the cursor position. The types of references that you can insert using this dialog box include content references (*conref*), content key references (*conkeyref*), or key references to metadata (*keyref*).

Insert step or list item

Inserts a new list or step item in the current list type.

Insert Unordered List

Inserts an unordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an unordered list.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is

rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

DITA Menu Actions

The following additional actions can be found in the **DITA** menu when editing in **Author** mode:

Reuse Content

This action provides a mechanism for reusing content fragments. It opens the **Reuse Content** dialog box that allows you to insert several types of references to reusable content at the cursor position. The types of references that you can insert using this dialog box include content references (*conref*), content key references (*conkeyref*), or key references to metadata (*keyref*).

Push Current Element

Opens the **Push current element** dialog box that allows content from a source topic to be inserted into another topic without any special coding in the topic where the content will be re-used.

Edit Content Reference

This action is available for elements with a `conref` or `conkeyref` attribute. it opens the **Edit Content Reference** dialog box that allows you to edit the source location (or key) and source element of a content reference (or content key reference), and the reference details (`conref`/`conkeyref` and `conrefend` attributes). For more information, see Reuse Content Dialog Box on page 1545.

Replace Reference with content

Replaces the referenced fragment (`conref` or `conkeyref`) at the cursor position with its content. This action is useful if you want to make changes to the content in the currently edited document without changing the referenced fragment in its source location.

Remove Content Reference

Removes the content reference (`conref` or `conkeyref`) inside the element at the cursor position.

Create Reusable Component

Creates a reusable component from the selected fragment of text. For more information, see Creating a Reusable Content Component on page 1554.

Insert Reusable Component

Inserts a reusable component at cursor location. For more information, see Inserting a Reusable Content Component on page 1555.

Paste special submenu

This submenu includes the following special paste actions that are specific to the DITA *framework*:

Paste as content reference

Inserts a content reference (a DITA element with a `conref` attribute) to the DITA XML element from the clipboard. An entire DITA XML element with an ID attribute must be present in the clipboard when the action is invoked. The `conref` attribute will point to this ID value.

Paste as content key reference

Allows you to indirectly reference content using the `conkeyref` attribute. When the DITA content is processed, the key references are resolved using key definitions from *DITA maps*. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Paste as link

Looks for the first element with an ID value in the clipboard and inserts an `xref` that points to that element. If no elements with an ID value are found, a message will appear that informs you that to use this action, the clipboard contents must include at least one element with a declared ID.

Paste as link (keyref)

Inserts a link to the element that you want to reference. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Subscript

Surrounds the selected text with a *subscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly below the baseline and slightly smaller than the rest of the text.

Superscript

Surrounds the selected text with a *superscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly above the baseline and slightly smaller than the rest of the text.

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

Insert > Σ Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Browse DITA Style Guide

Opens the **DITA Style Guide Best Practices for Authors** in your browser and displays a topic that is relevant to the element at the cursor position. When editing DITA documents, this action is available in the contextual menu of the editing area (under the **About Element** sub-menu), in the **DITA** menu, and in some of the documentation tips that are displayed by the *Content Completion Assistant*.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

DITA Contextual Menu Actions

In addition to many of the DITA toolbar actions and the *general* **Author** mode contextual menu actions, the following DITA *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DITA *framework*:

Paste as content reference

Inserts a content reference (a DITA element with a `conref` attribute) to the DITA XML element from the clipboard. An entire DITA XML element with an ID attribute must be present in the clipboard when the action is invoked. The `conref` attribute will point to this ID value.

Paste as content key reference

Allows you to indirectly reference content using the `conkeyref` attribute. When the DITA content is processed, the key references are resolved using key definitions from *DITA maps*. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.

2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Paste as link

Looks for the first element with an ID value in the clipboard and inserts an `xref` that points to that element. If no elements with an ID value are found, a message will appear that informs you that to use this action, the clipboard contents must include at least one element with a declared ID.

Paste as link (keyref)

Inserts a link to the element that you want to reference. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

Insert > Σ Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Reuse submenu

This submenu includes the following actions in regards to reusing content in DITA:

Push Current Element

Opens the **Push current element** dialog box that allows content from a source topic to be inserted into another topic without any special coding in the topic where the content will be re-used.

Edit Content Reference

This action is available for elements with a `conref` or `conkeyref` attribute. it opens the **Edit Content Reference** dialog box that allows you to edit the source location (or key) and source element of a content reference (or content key reference), and the reference details (`conref`/`conkeyref` and `conrefend` attributes). For more information, see Reuse Content Dialog Box on page 1545.

Replace Reference with content

Replaces the referenced fragment (`conref` or `conkeyref`) at the cursor position with its content. This action is useful if you want to make changes to the content in the currently edited document without changing the referenced fragment in its source location.

Remove Content Reference

Removes the content reference (`conref` or `conkeyref`) inside the element at the cursor position.

Create Reusable Component

Creates a reusable component from the selected fragment of text. For more information, see Creating a Reusable Content Component on page 1554.

Insert Reusable Component

Inserts a reusable component at cursor location. For more information, see Inserting a Reusable Content Component on page 1555.

Search References (Ctrl + Shift + G)

Finds the references to the `id` attribute value for the element at the current cursor position, in all the topics contained in the current *DITA map* (opened in the **DITA Maps Manager** view). If no references are found for the current element, a dialog box will be displayed that offers you the option of searching for references to its ancestor elements.

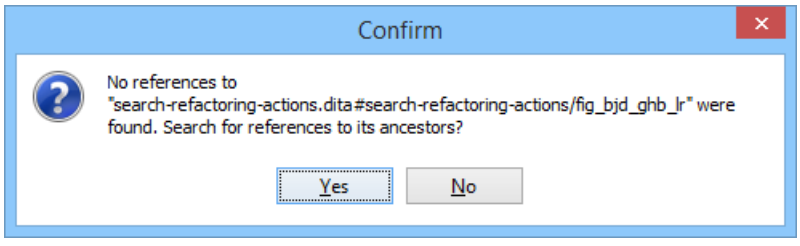


Figure 544: Search References to Ancestors Dialog Box

Show Key Definition

Available for elements that have a `conkeyref` or `keyref` attribute set (or elements with an ancestor element that has a `conkeyref` or `keyref` attribute). It computes the key name and opens the *DITA map* that contains the definition of the key with the element that defines that key selected.

About Element submenu

This submenu includes the following actions:

Style Guide

Opens the **DITA Style Guide Best Practices for Authors** in your browser and displays a topic that is relevant to the element at the cursor position. When editing DITA documents, this action is available in the contextual menu of the editing area (under the **About Element** sub-menu), in the **DITA** menu, and in some of the documentation tips that are displayed by the *Content Completion Assistant*.

Browse reference manual

Opens a reference to the documentation of the XML element closest to the cursor position in a web browser.

Go to Definition

Moves the cursor to the definition of the current element.

DITA Drag/Drop (or Copy/Paste) Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a DITA document that is edited in **Author** mode, creates a link to the dragged file (the `xref` DITA element with the `href` attribute) at the drop location. Copy and paste actions work the same.

You can also drag images or media files from your system explorer or the **Navigator** view and drop them into a DITA document (or copy and paste). This will insert the appropriate element at the drop or paste location (for example, dropping/pasting an image will insert the DITA `image` element with an `href` attribute).

DITA Map Document Type (Framework)

DITA maps are documents that collect and organize references to DITA topics to indicate the relationships between the topics. They can be used as a container for topics used to transform a collection of content into a publication and they offer a sequence and structure to the topics. They can also serve as outlines or tables of contents for DITA deliverables and as build manifests for DITA projects. *DITA maps* allow scalable reuse of content across multiple contexts. Maps can reference topics or other maps, and can contain a variety of content types and metadata.

For much more detailed information, resources, and instructions, see the DITA Authoring on page 1458 chapter.

File Definition

A file is considered to be a *DITA map* document when one of the following conditions are true:

- The root element name is one of the following: `map`, `bookmap`.
- The public ID of the document is `-//OASIS//DTD DITA Map` or `-//OASIS//DTD DITA BookMap`.
- The root element of the file has an attribute named `class` that contains the value `map/map` and a `DITAArchVersion` attribute from the *http://dita.oasis-open.org/architecture/2005/* namespace. This enhanced case of matching is only applied when the **Enable DTD/XML Schema processing in document type detection** option from the **Document Type Association** preferences page is selected.

Default Document Templates

There are a variety of default *DITA map* templates available when creating new documents from templates and they can be found in various folders inside: **Framework Templates** > **DITA Map**.

The default templates for *DITA map* documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/sita/templates/map` folder.

Default Schema for Validation and Content Completion

Default schemas that are used if one is not detected in the *DITA map* document are stored in the various folders inside *DITA-OT-DIR*`/dtd/` or *DITA-OT-DIR*`/schema/`.

Default CSS

The default CSS files used for rendering DITA content in **Author** mode are stored in the various folders inside: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for the *DITA map* document type are as follows:

- *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/catalog.xml`
- *DITA-OT-DIR*`/catalog-dita.xml`

Transformation Scenarios

Oxygen XML Editor plugin includes numerous built-in transformation scenarios that allow you to transform *DITA maps* to a variety of outputs, such as WebHelp, PDF, ODF, XHTML, EPUB, and CHM. All of them are listed in the **DITA Map** section in the **Configure Transformation Scenario(s)** dialog box.

For more information, see the DITA Map Transformation Scenarios on page 889 section.

Resources

- DITA Specifications
- DITA Style Guide Best Practices for Authors
- Oxygen Video Tutorial: DITA Maps Manager

Related Information:

Selecting a Root Map on page 1474
DITA Authoring on page 1458
Getting Started with DITA on page 8
Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403

DITA Map Author Mode Actions

A variety of actions are available in the *DITA map framework* that can be added to the **DITA** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DITA Map Toolbar and Menu Actions

When a *DITA map* is opened in **Author** mode, the following default actions are available on the **DITA Map Author Custom Actions** toolbar (by default, they are also available in the **DITA** menu and in various submenus of the contextual menu):

Insert New Topic

Opens a **New** DITA topic dialog box that allows you to create a new topic and inserts a reference to it at the cursor position.

Insert Topic Reference

Opens the **Insert Reference** dialog box that allows you to insert and configure a reference to a topic at the cursor position.

Reuse Content

Opens the **Reuse Content** dialog box that allows you to insert and configure a content reference (`conref`), or a content key reference (`conkeyref`) at the cursor position.

Insert Topic Heading

Opens the **Insert Reference** dialog box that allows you to insert a topic heading at the cursor position.

Insert Topic Group

Opens the **Insert Reference** dialog box that allows you to insert a topic group at the cursor position.

Insert Relationship Table

Opens a dialog box that allows you to configure the relationship table to be inserted. The dialog box allows you to configure the number of rows and columns of the relationship table, if the header will be generated and if the title will be added.

Relationship Table Properties

Allows you to change the properties of rows in relationship tables.

Insert Relationship Row

Inserts a new table row with empty cells. The action is available when the cursor position is inside a table.

Insert Relationship Column

Inserts a new table column with empty cells after the current column. The action is available when the cursor position is inside a table.

Delete Relationship Column

Deletes the table column where the cursor is located.

Delete Relationship Row

Deletes the table row where the cursor is located.

Move Up

Moves the selected node up one position on its same level.

Move Down

Moves the selected node down one position on its same level.

Promote

Moves the selected node up one level to the level of its parent node.

Demote

Moves the selected node down one level to the level of its child nodes.

DITA Menu Actions

The following additional actions can be found in the **DITA** menu when editing a *DITA map* in **Author** mode:

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

DITA Map Contextual Menu Actions

In addition to many of the **DITA Map** toolbar actions and the *general* **Author** mode contextual menu actions, the following *DITA map framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Edit Properties

Opens the **Edit Properties** dialog box that allows you to configure the properties of a selected node. For more details about this dialog box, see Edit Properties Dialog Box on page 1487.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Search References

Finds the references to the `href` or `keys` attribute value of the topic/map reference element at the current cursor position, in all the topics from the current *DITA map* (opened in the **DITA Maps Manager** view). The current topic/map reference element must have an `href` or `keys` attribute defined to complete the search.

Show Key Definition

Available for elements that have a `conkeyref` or `keyref` attribute set (or elements with an ancestor element that has a `conkeyref` or `keyref` attribute). It computes the key name and opens the *DITA map* that contains the definition of the key with the element that defines that key selected.

DITA Map Drag/Drop Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a *DITA map* document that is edited in **Author** mode creates a link to the dragged file (a `topicref` element, `chapter`, `part`, etc.) at the drop location.

Open Topic from DITA Map in Author Mode

When a *DITA map* is opened in **Author** mode, you can click the icon to the left of a topic to open that particular topic in the editor.

XHTML Document Type (Framework)

The Extensible HyperText Markup Language (XHTML), is a markup language that has the same depth of expression as HTML, but also conforms to XML syntax.

File Definition

A file is considered to be an XHTML document when the root element name is `html`.

Default Document Templates

There are a variety of default *XHTML* templates available when creating new documents from templates and they can be found in: **Framework Templates** > **XHTML**.

The default templates for XHTML documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/templates/` folder.

Default Schema for Validation and Content Completion

Default schemas that are used if one is not detected in the XHTML file are stored in the following locations:

- XHTML 1.0 - *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/dtd/` or *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/nvdl/`.
- XHTML 1.1 - *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml11/dtd/` or *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml11/schema/`.
- XHTML 5 - *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/xhtml5 (epub3)/`.

Default CSS

The default CSS files used for rendering XHTML content in **Author** mode are stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for the XHTML document type are as follows:

- *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml/dtd/xhtmlcatalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/relaxng/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/nvdl/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml11/dtd/xhtmlcatalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/xhtml11/schema/xhtmlcatalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/xhtml5 (epub3)/catalog-compat.xml`

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform XHTML documents to several types of DITA document types (topic, task, concept, reference). They can be found in the **XHTML** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- XHTML Specifications

Related Information:

Editing XHTML Documents on page 809
Editing XML Documents in Text Mode on page 403
Editing XML Documents in Author Mode on page 441
Adding Tables in XHTML Documents on page 519

XHTML Author Mode Actions

A variety of actions are available in the XHTML *framework* that can be added to the **XHTML** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

XHTML Toolbar Actions

The following default actions are readily available on the **XHTML (Author Custom Actions)** toolbar when editing in **Author** mode (by default, they are also available in the **XHTML** menu and some of them are in various submenus of the contextual menu):

Bold

Changes the style of the selected text to `bold` by surrounding it with b tag. You can use this action on multiple non-contiguous selections.

Italic

Changes the style of the selected text to `italic` by surrounding it with `i` tag. You can use this action on multiple non-contiguous selections.

Underline

Changes the style of the selected text to `underline` by surrounding it with u tag. You can use this action on multiple non-contiguous selections.

Link

Inserts an a element with an `href` attribute at the cursor position. You can type the URL of the reference you want to insert or use the browsing tools in the **Browse** drop-down menu.

Insert Image

Inserts a graphic object at the cursor position. This is done by inserting an `img` element regardless of the current context. The following graphical formats are supported: GIF, JPG, JPEG, BMP, PNG, SVG.

Insert Media Resource

Opens a **Choose Media** dialog box that allows you to select the URL of a media object to be inserted into a document at the cursor position. The result will be that a reference to the specified video, audio, or embedded HTML frame is inserted and rendered in **Author** mode so that it can be played directly from there.

Headings Drop-down Menu

A drop-down menu that includes actions for inserting h1, h2, h3, h4, h5, h6 elements.

Insert Paragraph

Insert a new paragraph element at current cursor position.

Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Insert List Item

Inserts a list item in the current list type.

Insert Unordered List

Inserts an unordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an unordered list.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Insert a definition list at the cursor position

Inserts a definition list (`dl` element) with one list item (a `dt` child element and a `dd` child element). You can also use this action to convert selected paragraphs or other types of lists to a definition list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

XHTML Menu Actions

The following additional actions can be found in the **XHTML** menu when editing in **Author** mode (some of them are also available in the contextual menu):

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

XHTML Contextual Menu Actions

In addition to many of the XHTML toolbar actions and the *general* **Author** mode contextual menu actions, the following XHTML *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

XHTML Drag/Drop (or Copy/Paste) Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into an XHTML document that is edited in **Author** mode, creates a link to the dragged file (the a element with the `href` attribute) at the drop location. Copy and paste actions work the same.

You can also drag images or media files from your system explorer or the **Navigator** view and drop them into an XHTML document (or copy and paste). This will insert the appropriate element at the drop or paste location (for example, dropping/pasting an image will insert the `img` element with the `src` attribute).

TEI P5 Document Type (Framework)

The *TEI (Text Encoding Initiative)* document type is an international and interdisciplinary standard that enables libraries, museums, publishers, and individual scholars to represent a variety of literary and linguistic texts for online research, teaching, and preservation.

File Definition

A file is considered to be a TEI P5 document when one of the following conditions are true:

- The document namespace is *http://www.tei-c.org/ns/1.0*.
- The public ID of the document is *-//TEI P5*.

Default Document Templates

There are a variety of default *TEI P5* templates available when creating new documents from templates and they can be found in: **Framework Templates** > **TEI P5**.

The default templates for TEI P5 documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/templates/TEI P5` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected in the TEI P5 document is `tei_all.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/custom/schema/relaxng/`.

Default CSS

The default CSS files used for rendering TEI content in **Author** mode are stored in *[OXYGEN_INSTALL_DIR]*/frameworks/tei/xml/tei/css/.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for the TEI P5 document type are as follows:

- *[OXYGEN_INSTALL_DIR]*/frameworks/tei/xml/tei/schema/dtd/catalog.xml
- *[OXYGEN_INSTALL_DIR]*/frameworks/tei/xml/tei/custom/schema/dtd/catalog.xml
- *[OXYGEN_INSTALL_DIR]*/frameworks/tei/xml/tei/stylesheet/catalog.xml

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform TEI P5 documents to a variety of outputs, such as PDF, XHTML, EPUB, DOCX, and ODT. They can be found in the **TEI P5** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- Oxygen Video Tutorial: Editing TEI Documents in Author Mode
- TEI: P5 Guidelines

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403
Adding Tables in TEI Documents on page 521

TEI P5 Author Mode Actions

A variety of actions are available in the TEI P5 *framework* that can be added to the **TEI P5** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

TEI P5 Toolbar Actions

The following default actions are readily available on the **TEI P5 (Author Custom Actions)** toolbar when editing in **Author** mode (by default, they are also available in the **TEI P5** menu and some of them are in various submenus of the contextual menu):

Bold

Changes the style of the selected text to `bold` by surrounding it with `hi` tag and setting the `rend` attribute to `bold`. You can use this action on multiple non-contiguous selections.

Italic

Changes the style of the selected text to `italic` by surrounding it with `hi` tag and setting the `rend` attribute to `italic`. You can use this action on multiple non-contiguous selections.

Underline

Changes the style of the selected text to `underline` by surrounding it with `hi` tag and setting the `rend` attribute to `ul`. You can use this action on multiple non-contiguous selections.

Insert Section

Inserts a new section or subsection, depending on the current context. For example, if the current context is `div1`, then a `div2` is inserted. By default, this action also inserts a paragraph element as a child node.

Insert Paragraph

Insert a new paragraph element at current cursor position.

Insert Image

Inserts an image reference at the cursor position. Depending on the current location, an image-type element is inserted.

Insert List Item

Inserts a list item in the current list type.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Insert Itemized List

Inserts an itemized list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an itemized list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

TEI P5 Menu Actions

The following additional actions can be found in the **TEI P5** menu when editing in **Author** mode (some of them are also available in the contextual menu):

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

TEI Contextual Menu Actions

In addition to many of the TEI toolbar actions and the *general* **Author** mode contextual menu actions, the following TEI *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

TEI P5 Drag/Drop Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a TEI P5 document that is edited in **Author** mode, creates a link to the dragged file (the `ptr` element with the `target` attribute) at the drop location. Dragging an image file from the default file system application (Windows Explorer on Windows or Finder on Mac OS X, for example) and dropping it into a TEI P5 document inserts a graphic element (the `graphic` element with the `url` attribute) at the drop location, similar to the **Insert Image** toolbar action.

Customization of TEI Frameworks Using the Latest Sources

The TEI P5 *framework* is available as a public project at the following SVN repository: https://github.com/TEIC/oxygen-tei. This project is the base for customizing a TEI *framework*.

To customize a TEI *framework*, follow this procedure:

1. Check out the project on a local computer from the SVN repository.

   This action is done with an SVN client application that creates a working copy of the SVN repository on a local computer.
2. Customize the TEI *framework* in Oxygen XML Editor plugin.
   a) Set the Oxygen XML Editor plugin `frameworks` folder to the `oxygen/frameworks` subfolder of the folder of the SVN working copy.

      Open the **Preferences** dialog box , go to **Global**, and set the path of the SVN working copy in the **Use custom frameworks** option.
   b) Open the **Preferences** dialog box , go to **Document Type Association** > **Locations**, and select **Custom**.
3. Build a *JAR* file with the TEI *framework*.

   The SVN project includes a `build.xml` file that can be used for building a *JAR* file using the Ant tool. The command that should be used:

   ```
   ant -f build.xml
   ```
4. Distribute the *JAR* file to the users that need the customized TEI *framework*.

   The command from the above step creates a file `tei.zip` in the `dist` subfolder of the SVN project. Each user that needs the customized TEI *framework* will receive the `tei.zip` file and will unzip it in the `frameworks` folder of the Oxygen XML Editor plugin install folder.

Customization of TEI Frameworks Using the Compiled Sources

The following procedure describes how to update to the latest stable version of TEI Schema and TEI XSL, already integrated in the TEI *framework* for Oxygen XML Editor plugin.

1. Go to https://code.google.com/p/oxygen-tei/;
2. Go to **Downloads**;
3. Download the latest uploaded `.zip` file;
4. Unpack the `.zip` file and copy its content in the Oxygen XML Editor plugin `frameworks` folder.

TEI ODD Document Type (Framework)

The *TEI ODD (Text Encoding Initiative - One Document Does it all)* document type is a TEI XML-conformant specification format that allows you to create a custom TEI P5 schema in a literate programming fashion. A system of XSLT stylesheets called Roma was created by the TEI Consortium for manipulating the ODD files.

File Definition

A file is considered to be a TEI ODD document when the following conditions are true:

- The file extension is `.odd`.
- The document namespace is *http://www.tei-c.org/ns/1.0*.

Default Document Templates

There is a default *TEI ODD* document template available when creating new documents from templates and they can be found in: **Framework Templates** > **TEI ODD**.

The default template is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/templates/TEI ODD` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected in the TEI ODD document is `tei_odds.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/custom/schema/relaxng/`.

Default CSS

The default CSS files used for rendering TEI ODD content in **Author** mode are stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for the TEI ODD document type are as follows:

- *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/custom/schema/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/schema/catalog.xml`

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform TEI ODD documents to a variety of outputs, such as PDF, XHTML, EPUB, DOCX, ODT, RNG, DTD, and XML Schema. They can be found in the **TEI ODD** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- Oxygen Video Tutorial: Editing TEI Documents in Author Mode
- TEI: Getting Started with ODD

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403

TEI ODD Author Mode Actions

A variety of actions are available in the TEI ODD *framework* that can be added to the **TEI ODD** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

TEI ODD Toolbar Actions

The following default actions are readily available on the **TEI ODD (Author Custom Actions)** toolbar when editing in **Author** mode (by default, they are also available in the **TEI ODD** menu and some of them are in various submenus of the contextual menu):

Bold

Changes the style of the selected text to `bold` by surrounding it with `hi` tag and setting the `rend` attribute to `bold`. You can use this action on multiple non-contiguous selections.

Italic

Changes the style of the selected text to `italic` by surrounding it with `hi` tag and setting the `rend` attribute to `italic`. You can use this action on multiple non-contiguous selections.

Underline

Changes the style of the selected text to `underline` by surrounding it with `hi` tag and setting the `rend` attribute to `ul`. You can use this action on multiple non-contiguous selections.

Insert Section

Inserts a new section or subsection, depending on the current context. For example, if the current context is `div1`, then a `div2` is inserted. By default, this action also inserts a paragraph element as a child node.

Insert Paragraph

Insert a new paragraph element at current cursor position.

Insert Image

Inserts an image reference at the cursor position. Depending on the current location, an image-type element is inserted.

Insert List Item

Inserts a list item in the current list type.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Insert Itemized List

Inserts an itemized list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an itemized list.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

TEI ODD Menu Actions

The following additional actions can be found in the **TEI ODD** menu when editing in **Author** mode (some of them are also available in the contextual menu):

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

TEI Contextual Menu Actions

In addition to many of the TEI toolbar actions and the *general* **Author** mode contextual menu actions, the following TEI *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

TEI ODD Drag/Drop Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a TEI ODD document that is edited in **Author** mode, creates a link to the dragged file (the `ptr` element with the `target` attribute) at the drop location.

jTEI Document Type (Framework)

The *jTEI (Journal of the Text Encoding Initiative)* document type is a highly restrictive customization (only about 80 elements are included) of the TEI P5 *framework*.

File Definition

A file is considered to be a *jTEI* document when the root element is named *TEI*, it is in the namespace *http://www.tei-c.org/ns/1.0*, and the `@rend` attribute is set to *"jTEI"*.

Default Document Templates

There is a default **jTEI Article** template available when creating new documents from templates and they can be found in: **Framework Templates** > **TEI JTEI**.

The default template is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/templates/TEI jTEI` folder.

Default Schema for Validation and Content Completion

The default schema that is used if one is not detected is `tei_jtei.rng` and it is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/custom/schema/relaxng/`.

Default CSS

The default CSS file (`jtei.css`) that is used for rendering jTEI in **Author** mode is stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/css/`.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalogs

The default *XML Catalogs* for jTEI are as follows:

- *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/schema/dtd/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/custom/schema/dtd/catalog.xml`
- *[OXYGEN_INSTALL_DIR]*`/frameworks/tei/xml/tei/stylesheet/catalog.xml`

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform jTEI documents to PDF and ODT. They can be found in the **TEI JTEI** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- Oxygen Video Tutorial: Editing TEI Documents in Author Mode
- jTEI Article Guidelines

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403
Adding Tables in TEI Documents on page 521

JATS Document Type (Framework)

The *JATS (NISO Journal Article Tag Suite)* document type is a technical standard that defines an XML format for scientific literature.

File Definition

A file is considered to be a JATS document when the PUBLIC ID of the document contains the string `-//NLM//DTD`.

Default Document Templates

There are some default *JATS* templates available when creating new documents from templates and they can be found in: **Framework Templates** > **JATSKit - NISO JATS and NLM BITS**

The default templates for JATS documents are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/jats/templates/` folder.

Default Schema for Validation and Content Completion

Default schemas that are used if one is not detected in the JATS document are stored in *[OXYGEN_INSTALL_DIR]*`/frameworks/jats/lib/schemas/`.

Default CSS

The default CSS files used for rendering JATS content in **Author** mode are stored in *[OXYGEN_INSTALL_DIR]*/frameworks/jats/lib/author-css/.

By default, these default CSS files are merged with any that are specified in the document. For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Default XML Catalog

The default *XML Catalog*, jatskit-catalog.xml, is stored in *[OXYGEN_INSTALL_DIR]*/frameworks/jats/lib/schemas/.

Transformation Scenarios

Oxygen XML Editor plugin includes built-in transformation scenarios that allow you to transform JATS documents to a variety of outputs, such as PDF, HTML, and EPUB. They can be found in the **JATSKit** section in the **Configure Transformation Scenario(s)** dialog box.

Resources

- Oxygen Video Tutorial: Configuring a JATS *Framework*
- NLM Journal Archiving and Interchange Tag Suite

Related Information:

Editing XML Documents in Author Mode on page 441
Editing XML Documents in Text Mode on page 403

JATS Author Mode Actions

A variety of actions are available in the JATS *framework* that can be added to the **JATS** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

JATS Toolbar Actions

The following default actions are readily available on the **JATS (Author Custom Actions)** toolbar when editing in **Author** mode (by default, they are also available in the **JATS** menu and in various submenus of the contextual menu):

Paragraph Level Drop-Down Menu

Insert Paragraph
Insert a new paragraph element at current cursor position.

Insert Unordered List
Inserts an unordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an unordered list.

Insert Ordered List
Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Boxed Text
Inserts or wraps content in a box with a shaded background.

Code
Inserts or wraps content in a code element.

Display Quote
Inserts or wraps content in a disp-quote element.

Figure

Inserts a `fig` element with a `title` (inside a `caption` element). This action opens a dialog box that allows you to enter the text for the title for the figure.

Graphic Figure

Inserts a `fig` element with a `title` (inside a `caption` element), and a `graphic` element. A dialog box is displayed that allows you to enter the title for the figure, followed by a dialog box that allows you to select the URL of the graphic to be inserted.

Bold

Surrounds the selected text with a `bold` tag. You can use this action on multiple non-contiguous selections.

Italic

Surrounds the selected text with an `italic` tag. You can use this action on multiple non-contiguous selections.

Underline

Surrounds the selected text with an `underline` tag. You can use this action on multiple non-contiguous selections.

Monospace

Inserts or wraps content with a `monospace` element.

Insert Image

Inserts an image reference at the cursor position. Depending on the current location, an image-type element is inserted.

Insert List Item

Inserts a list item in the current list type.

Insert MathML

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Subscript

Surrounds the selected text with a *subscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly below the baseline and slightly smaller than the rest of the text.

Superscript

Surrounds the selected text with a *superscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly above the baseline and slightly smaller than the rest of the text.

JATS Menu Actions

The following additional actions can be found in the **JATS** menu when editing in **Author** mode:

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

JATS Drag/Drop Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a JATS document that is edited in **Author** mode, creates a link to the dragged file (the `ext-link` element with the `xlink:href` attribute) at the drop location. Dragging an image file from the default file system application (Windows Explorer on Windows or Finder on Mac OS X, for example) and dropping it into a JATS document inserts an image element (the `inline-graphic` element with the `xlink:href` attribute) at the drop location, similar to the **Insert Image** toolbar action.

EPUB Document Type (Framework)

EPUB is an e-book file format that is a ZIP archive and can be downloaded and read on devices such as phones, tablets, computers, or e-readers. You can view the contents and structure of this type of file in the **Navigator** view or main editing pane.

Three distinct *frameworks* are supported for the EPUB document type:

- **NCX** - A declarative global navigation definition.
- **OCF** - The Open Container Format (OCF) defines a mechanism by which all components of an Open Publication Structure (OPS) can be combined into a single file system entity.
- **OPF** - The Open Packaging Format (OPF) defines the mechanism by which all components of a published work that conforms to the Open Publication Structure (OPS) standard (including metadata, reading order, and navigational information) are packaged in an OPS Publication.

  Note: Oxygen XML Editor plugin supports OPF 2.0, OPF 3.0, and OPF 3.1.

File Definition

A file is considered to be an *EPUB* document if it has a file extension of `.epub`.

Default Document Templates

There are a variety of default *EPUB* templates available when creating new documents from templates and they can be found the following folders in **Framework Templates**: **NCX**, **OCF**, **OPF 2.0**, **OPF 3.0**, and **OPF 3.1**.

- The default templates for the **NCX** document types are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/ncx/templates` folder.
- The default templates for the **OCF** document types are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/ocf/templates` folder.
- The default template for the **OPF 2.0** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/templates/2.0` folder.
- The default template for the **OPF 3.0** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/templates/3.0` folder.
- The default template for the **OPF 3.1** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/templates/3.1` folder.

Default Schema

The default schema files for the various types of EPUB document types are located in the following directories:

- The default schema files for the **NCX** document types are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/ncx/schemas` folder.
- The default schema files for the **OCF** document types are located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/ocf/schemas` folder.
- The default schema files for the **OPF 2.0** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/schemas/2.0` folder.
- The default schema files for the **OPF 3.0** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/schemas/3.0` folder.
- The default schema files for the **OPF 3.1** document type is located in the *[OXYGEN_INSTALL_DIR]*`/frameworks/opf/schemas/3.1` folder.

Related Information:

Working with Archive Files on page 1136

Other Supported Document Types

Along with the fully supported predefined *frameworks* (document types), Oxygen XML Editor plugin also provides limited support (including document templates) for editing a variety of other document types. All the specialized views, editors, actions, and options are dynamic according to the type of file that is opened or created. Other document types that are supported in Oxygen XML Editor plugin include:

- EPUB (NCX, OCF, OPF 2.0, 3.0, & 3.1) - A standard for e-book files.
- OOXML - An XML-based file format for representing spreadsheets, charts, presentations, and word processing documents.
- ODF - An free and open-source XML-based file format for electronic office documents, such as spreadsheets, charts, presentations, and word processing documents.
- DocBook Targetset - For resolving cross-references when using *olinks*.
- XSLT Stylesheets - A document type that provides a visual mode for editing XSLT stylesheets.
- WSDL - Web Services Description Language is an XML language for describing the functionality offered by a web service.
- Schematron - For making assertions about the presence or absence of patterns in XML documents. This document type applies to the ISO Schematron version.
- Schematron Quick Fixes (SQF) - An extension of the ISO standard Schematron, allows developers to define *Quick Fixes* for Schematron errors.

- StratML (Part 1 & 2) - Part 1 and 2 of the Strategy Markup Language specification.
- XProc - A document type for processing XProc script files.
- XML Schema - Documents that provide support for editing annotations.
- MathML - Mathematical Markup Language (2.0 and 3.0) is an application of XML for describing mathematical notations.
- XLIFF (1.2 & 2.0) - XML Localization Interchange File Format is a standard for passing data between tools during a localization process.
- XQuery - The common query language for XML.
- CSS - Cascading Style Sheets is a language used for describing the look and formatting of a document.
- Relax NG Schema - A schema language that specifies a pattern for the structure and content of an XML document.
- NVDL Schema - Namespace Validation Dispatching Language allows you to specify sections of XML documents to be validated against various schemas.
- JSON - JavaScript Object Notation is a lightweight data-interchange format.
- Markdown - A lightweight markup language with plain text formatting syntax that can be converted to HTML or DITA.
- JavaScript - Programming language of HTML and the Web.
- XMLSpec - A markup language for W3C specifications and other technical reports.
- DITAVAL - DITA conditional processing profile to identify the values you want to conditionally process for a particular output, build, or other purpose.
- Daisy - A technical standard for digital audio books, periodicals, and computerized text. It is designed to be an audio substitute for print material.
- EAD - Encoded Archival Description is an XML standard for encoding archival finding aids.
- KML - Keyhole Markup Language is an XML notation for expressing geographic visualization in maps and browsers.
- Maven Project & Settings - Project or settings file for Maven build automation tool that is primarily used for Java projects.
- Oasis *XML Catalog* - An *XML Catalog* document that describes a mapping between external entity references and locally-cached equivalents.
- Other Non-XML Files- Oxygen XML Editor plugin also includes a simple text editor and a variety of helpful features for creating and editing non-XML files.

Transforming Documents

10

Topics:

- Transformation Scenarios
- WebHelp Output
- PDF Output

XML documents can be transformed into a variety of user-friendly output formats that can be viewed by end users. This process is known as a *transformation*.

Oxygen XML Editor plugin includes numerous built-in transformation possibilities to publish XML content in various output formats (such as WebHelp, PDF, CHM, EPUB, JavaHelp, Eclipse Help, XHTML, etc.)

For transformations that are not included in your installed version of Oxygen XML Editor plugin, simply install the tool chain required to perform the specific transformation and process the files in accordance with the processor instructions. A multitude of target formats are possible. The basic condition for a transformation to any format is that your source document is well-formed.

Transformation Scenarios

A transformation scenario is a set of complex operations and settings that gives you the possibility to obtain outputs of multiple types (XML, HTML, PDF, EPUB, etc.) from the same source of XML files and stylesheets.

Note: You need to use the appropriate stylesheet according to the source definition and the desired output. For example, if you want to transform into an HTML format using a DocBook stylesheet, your source XML document should conform with the DocBook DTD.

Executing a transformation scenario implies multiple actions, such as:

- Validating the input file.
- Obtaining intermediate output files (for example, formatting objects for the XML to PDF transformation).
- Using transformation engines to produce the output.

Before transforming an XML document in Oxygen XML Editor plugin, you need to define a transformation scenario to apply to that document. A scenario is a set of values for various parameters that define a transformation. It is not related to a particular document, but rather to a document type. Oxygen XML Editor plugin included preconfigured built-in transformation scenarios, but you can also create new transformation scenarios.

When creating new transformation scenarios, the types that are available include:

- **Scenarios that Apply to XML Files** - This type of scenario contains the location of an XSLT stylesheet that is applied on the edited XML document, as well as other transformation parameters. For more information, see XML Transformation with XSLT on page 936 and XML Transformation with XQuery on page 946.
- **Scenarios that Apply to XSLT Files** - This type of scenario contains the location of an XML document that the edited XSLT stylesheet is applied to, as well as other transform parameters. For more information, see XSLT Transformation on page 963.
- **Scenarios that Apply to XQuery Files** - This type of scenario contains the location of an XML source, that the edited XQuery file is applied to, as well as other transform parameters. When the XML source is a native XML database, the XML source field of the scenario is empty because the XML data is read with XQuery-specific functions, such as `document()`. When the XML source is a local XML file, the URL of the file is specified in the XML input field of the scenario. For more information, see XQuery Transformation on page 974.

- **Scenarios that Apply to SQL Files** - This type of scenario specifies a database connection for the database server that runs the SQL file that is associated with the scenario. The data processed by the SQL script is located in the database.
- **Scenarios that Apply to XProc Files** - This type of scenario contains the location of an XProc script, as well as other transform parameters. For more information, see SQL Transformation on page 979.
- **DITA-OT Scenarios** - This type of scenario provides the parameters for an Ant transformation that executes a DITA-OT build script. Oxygen XML Editor plugin includes a built-in version of Ant and a built-in version of DITA-OT, although you can also set other versions in the scenario. For more information, see DITA OT Transformation on page 950.
- **ANT Scenarios** - This type of scenario contains the location of an Ant build script, as well as other transform parameters. For more information, see Ant Transformation on page 961.

Note:

Status messages generated during the transformation process are displayed in the **Console** view (the **Enable Oxygen consoles** option must be selected in the **View** preferences page).

Built-in Transformation Scenarios

Oxygen XML Editor plugin includes preconfigured built-in transformation scenarios that are used for common transformations. They can be found in the various sections in the **Configure Transformation Scenario(s)** dialog box or **Transformation Scenarios** view. All the predefined *document types (frameworks)* that are included in Oxygen XML Editor plugin have various transformation scenarios in their specific sections, including the most popular *frameworks*, such as DITA, DocBook, TEI, XHTML, JATS, OOXML, and more.

To obtain the desired output, use one of the following actions from the toolbar or **Transform** submenu in the contextual menu of the **Navigator** view:

- **Apply Transformation Scenario(s) (Alt + Shift + T, T (Command + Alt + T, T on OS X))** - If you have associated transformation scenarios for the current document, this action will simply apply the association and begin the transformation process. If an association is not detected, this action will open the **Configure Transformation Scenario(s)** dialog box where you can choose the scenarios you want to apply.
- **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** - This action will open the **Configure Transformation Scenario(s)** dialog box where you can choose the scenarios you want to apply.

Note:

- You can apply a transformation even if the current document is not associated with a transformation scenario.
- If the document contains an `xml-stylesheet` processing instruction that references an XSLT stylesheet (commonly used to display the document in web browsers), Oxygen XML Editor plugin prompts you to associate the document with a built-in transformation scenario.
- The default transformation scenario is suggested based on the processing instruction from the edited document.

Related Information:

Creating New Transformation Scenarios on page 936
Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Applying Associated Transformation Scenarios on page 982
Transformation Scenarios View on page 986

DocBook Transformation Scenarios

Built-in transformation scenarios allow you to transform DocBook documents to a variety of outputs, such as WebHelp, PDF, HTML, HTML Chunk, XHTML, XHTML Chunk, and EPUB. Oxygen XML Editor plugin also includes a DocBook 5.1 transformation scenario for *Assembly* documents. All of them are listed in the **DocBook 4** and **DocBook 5** sections in the **Configure Transformation Scenario(s)** dialog box.

Related Information:

Editing a Transformation Scenario on page 980

Configure Transformation Scenario(s) Dialog Box on page 982
Applying Associated Transformation Scenarios on page 982

DocBook to WebHelp Classic Transformation

DocBook documents can be transformed into several types of WebHelp systems.

WebHelp Classic Output

To publish a DocBook document as a **WebHelp Classic** system, follow these steps:

1. Click the **Configure Transformation Scenario(s)** action from the toolbar.
2. Select the **DocBook WebHelp Classic** scenario from the **DocBook 4** or **DocBook 5** section.
3. Click **Apply associated**.

   When the **DocBook WebHelp Classic** transformation is complete, the output is automatically opened in your default browser.

WebHelp Classic with Feedback Output

To publish a DocBook document as a **WebHelp Classic with Feedback** system, follow these steps:

1. Click **Configure Transformation Scenarios**.
2. Select the **DocBook WebHelp Classic with Feedback** scenario from the **DocBook 4** or **DocBook 5** section.
3. Click **Apply associated**.
4. Enter the documentation product ID and the documentation version.

   When the **DocBook WebHelp Classic with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment. For more information, see Deploying a Feedback-Enabled System on page 1050.

For more information about the feedback-enabled WebHelp system, watch our video demonstration:

https://www.youtube.com/embed/eoQ2uxHvppE

Customizing DocBook WebHelp Transformation Scenarios

To customize a DocBook WebHelp transformation scenario, you can edit various parameters, including the following most commonly used ones:

args.default.language

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

clean.output

Deletes all files from the output folder before the transformation is performed (only `no` and `yes` values are valid and the default value is `no`).

l10n.gentext.default.language

This parameter is used to identify the correct stemmer that differs from language to language. For example, for English the value of this parameter is `en` or for French it is `fr`, and so on.

use.stemming

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

webhelp.copyright

Adds a small copyright text that appears at the end of the **Table of Contents** pane.

webhelp.custom.resources

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

webhelp.favicon

The file path that points to an image to be used as a *favicon* in the WebHelp output.

webhelp.footer.file

Path to an XML file that includes the footer content for your WebHelp output pages. You can use this parameter to integrate social media features (such as widgets for Facebook™, Twitter™, Google Analytics, or Google+™). The file must be well-formed, each widget must be in separate `div` or `span` element, and the code for each `script` element is included in an XML comment (also, the start and end tags for the XML comment must be on a separate line). The following code exert is an example for adding a Facebook™ widget:

```
<div id="facebook">
  <div id="fb-root"/>
  <script>
    <!-- (function(d, s, id) { var js, fjs = d.getElementsByTagName(s)[0];
      if (d.getElementById(id)) return;
      js = d.createElement(s); js.id = id;
      js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
      fjs.parentNode.insertBefore(js, fjs); }
       (document, 'script', 'facebook-jssdk')); -->
  </script>
  <div data-share="true" data-show-faces="true" data-action="like"
     data-layout="standard" class="fb-like"/>
</div>
```

webhelp.footer.include

Specifies whether or not to include footer in each WebHelp page. Possible values: `yes`, `no`. If set to `no`, no footer is added to the WebHelp pages. If set to `yes` and the `webhelp.footer.file` parameter has a value, then the content of that file is used as footer. If the `webhelp.footer.file` has no value then a default **Oxygen** footer is inserted in each WebHelp page.

webhelp.logo.image.target.url

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

webhelp.logo.image

Specifies a path to an image displayed as a logo in the left side of the output header.

webhelp.product.id (available only for Feedback-enabled systems)

This parameter specifies a short name for the documentation target, or product (for example, `mobile-phone-user-guide`, `hvac-installation-guide`).

Note: You can deploy documentation for multiple products on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

webhelp.product.version (available only for Feedback-enabled systems)

Specifies the documentation version number (for example, 1.0, 2.5, etc.). New user comments are bound to this version.

Note: Multiple documentation versions can be deployed on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.skin.css

Path to a CSS file that sets the style theme in the WebHelp Classic output. It can be one of the predefined skin CSS from the `OXYGEN_INSTALL_DIR\frameworks\docbook\xsl\com.oxygenxml.webhelp.classic\predefined-skins` directory, or it can be a custom skin CSS generated with the Oxygen Skin Builder web application.

For more information about all the DocBook transformation parameters, go to http://docbook.sourceforge.net/release/xsl/current/doc/fo/index.html.

Related Information:

DITA Map to WebHelp Classic Transformation on page 894

Customizing WebHelp Classic Output on page 1009

DocBook to DITA Transformation

Oxygen XML Editor plugin includes a built-in transformation scenario that is designed to convert DocBook content to DITA. This transformation scenario is based upon a DITA Open Toolkit plugin that is available at sourceforge.net.

To convert a DocBook document to DITA, follow these steps:

1. Use one of the following two methods to begin the transformation process:
   - To apply the transformation scenario to a newly opened file, use the **Apply Transformation Scenario(s) (Alt + Shift + T, T (Command + Alt + T, T on OS X))** action from the toolbar or the **XML** menu.
   - To customize the transformation or change the scenario that is associated with the document, use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.
2. Select the **DocBook to DITA** transformation scenario in the **DocBook 4** or **DocBook 5** section.
3. Click the **Apply associated** button to run the transformation.

   Step Result: The transformation will convert as many of the DocBook elements into equivalent DITA elements as it can recognize in its mapping process. For elements that cannot be mapped, the transformation will insert XML comments so that you can see which elements could not be converted.
4. Adjust the resulting DITA composite to suit your needs. You may have to remove comments, fix validation errors, adjust certain attributes, or split the content into individual topics.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982

DocBook to PDF Transformation

Oxygen XML Editor plugin includes a built-in transformation scenario that is designed to convert DocBook content to PDF.

To convert a DocBook document to PDF, follow these steps:

1. Use one of the following two methods to begin the transformation process:
   - To apply the transformation scenario to a newly opened file, use the **Apply Transformation Scenario(s) (Alt + Shift + T, T (Command + Alt + T, T on OS X))** action from the toolbar or the **XML** menu.
   - To customize the transformation or change the scenario that is associated with the document, use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.
2. Select the **DocBook PDF** transformation scenario in the **DocBook 4** or **DocBook 5** section.
3. Click the **Apply associated** button to run the transformation.

For information about customizing the PDF output for DocBook content, see DocBook to PDF Output Customization on page 1122.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
DocBook to PDF Output Customization on page 1122

DocBook to EPUB Transformation

Oxygen XML Editor plugin includes a built-in transformation scenario that is designed to convert DocBook content to EPUB. The EPUB specification recommends the use of *OpenType* fonts (recognized by their `.otf` file extension) whenever possible. To use a specific font, follow these steps:

1. Declare it in your CSS file, as in the following example:

```
@font-face {
font-family: "MyFont";
font-weight: bold;
font-style: normal;
src: url(fonts/MyFont.otf);
}
```

2. In the CSS, specify where this font is used. To set it as default for h1 elements, use the `font-family` rule, as in the following example:

```
h1 {
font-size:20pt;
margin-bottom:20px;
font-weight: bold;
font-family: "MyFont";
text-align: center;
}
```

3. Open the **Configure Transformation Scenario(s)** dialog box, select the **DocBook EPUB** transformation scenario in the **DocBook 4** or **DocBook 5** section, and click **Edit**.
4. In the **Parameters** tab, set the `epub.embedded.fonts` parameter to `fonts/MyFont.otf`. If you need to provide more files, use commas to separate their file paths.

   Note: The `html.stylesheet` parameter allows you to include a custom CSS in the output EPUB.
5. Run the transformation scenario.

DITA Map Transformation Scenarios

Built-in transformation scenarios allow you to transform *DITA maps* to a variety of outputs, such as WebHelp, PDF, ODF, XHTML, EPUB, CHM, Kindle, and MS Word. Oxygen XML Editor plugin also includes a special **Run DITA-OT Integrator** that can be used to integrate a DITA-OT plugin and a **DITA Map Metrics Report** transformation that generates a statistics report for your DITA map. All of them are listed in the **DITA Map** section in the **Configure Transformation Scenario(s)** dialog box.

A variety of transformations scenarios are available for *DITA maps*:

- Predefined transformation scenarios allow you to transform a *DITA map* to a variety of outputs, such as WebHelp, PDF, ODF, XHTML, EPUB, CHM, Kindle, and MS Word.
- **Run DITA-OT Integrator** - Use this transformation scenario if you want to integrate a DITA-OT plugin. This scenario runs an Ant task that integrates all the plugins from the DITA-OT/plugins directory.
- **DITA Map Metrics Report** - Use this type of transformation scenario if you want to generate a *DITA map* statistics report. They contain information such as the number of processed maps and topics, content reuse percentage, number of elements, attributes, words, and characters used in the entire *DITA map* structure, DITA conditional processing attributes used in the *DITA maps*, and more.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Applying Associated Transformation Scenarios on page 982

DITA Map to WebHelp Responsive Transformation

DITA content can be transformed into several types of WebHelp Responsive systems.

WebHelp Responsive Output

To publish a *DITA map* as **WebHelp Responsive** output, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

- Templates Tab - This tab contains a set of predefined publishing templates that you can use for the layout of your WebHelp system output. You can also create your own publishing templates or edit existing ones.
- Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
- Filters Tab - This tab allows you to filter certain content elements from the generated output.
- Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
- Output Tab - This tab allows you to configure options that are related to the location where the output is generated.

4. Click **Apply associated** to process the transformation.

   When the **DITA Map WebHelp Responsive** transformation is complete, the output is automatically opened in your default browser.

WebHelp Responsive with Feedback Output

To publish a *DITA map* as a **WebHelp Responsive with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Templates Tab - This tab contains a set of predefined publishing templates that you can use for the layout of your WebHelp system output. You can also create your own publishing templates or edit existing ones.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.

4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Responsive with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

Parameters for Customizing WebHelp Responsive Output

To customize a transformation scenario, you can edit various parameters, including the following most commonly used ones:

args.default.language

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

clean.output

Deletes all files from the output folder before the transformation is performed (only `no` and `yes` values are valid and the default value is `no`).

editlink.remote.ditamap.url

Use this parameter in conjunction with `editlink.web.author.url` to add an *Edit* link next to the topic title in the WebHelp output. When a user clicks the link, the topic is opened in Oxygen XML Web Author where they can make changes that can be saved to a file server. The value should be set as the custom URL of

the *main DITA map*. For example, a GitHub custom URL might look like this: `https://getFileContent/oxyengxml/userguide/master/UserGuide.ditamap`.

editlink.web.author.url

This parameter needs to be used in conjunction with `editlink.remote.ditamap.url` to add an *Edit* link next to the topic title in the WebHelp output. When a user clicks the link, the topic is opened in Oxygen XML Web Author where they can make changes that can be saved to a file server. The value should be set as the URL of the Web Author installation. For example: `https://www.oxygenxml.com/oxygen-xml-web-author/`.

editlink.present.only.path.to.topic

When this parameter is set to "true", the DITA topic path is displayed to the right of each topic title in the WebHelp Responsive output. Also, when this parameter is used, the **editlink.remote.ditamap.url** and **editlink.web.author.url** parameters are ignored.

fix.external.refs.com.oxygenxml (Only supported when the DITA OT transformation process is started from Oxygen XML Editor plugin)

The DITA Open Toolkit usually has problems processing references that point to locations outside of the directory of the processed *DITA map*. This parameter is used to specify whether or not the application should try to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references. The fix has no impact on your edited DITA content. Allowed values: `true` or `false` (default).

force.unique

When set to `true` (default value), the transformation will be forced to create unique output files for each instance of a resource when a map contains multiple references to a single topic.

use.stemming

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

webhelp.custom.resources

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

webhelp.favicon

The file path that points to an image to be used as a *favicon* in the WebHelp output.

webhelp.reload.stylesheet

Set this parameter to `true` if you have out of memory problems when generating WebHelp. It will increase processing time but decrease the memory footprint. The default value is `false`.

webhelp.search.custom.excludes.file

The path of the file that contains name patterns for HTML files that should not be indexed by the WebHelp search engine. Each exclude pattern must be on a new line. The patterns are considered to be relative to the output directory, and they accept wildcards such as `'*'` (matches zero or more characters) or `'?'` (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

webhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

webhelp.search.enable.pagination

Specifies whether or not search results will be displayed on multiple pages. Allowed values are `yes` or `no`.

webhelp.search.page.numberOfItems

Specifies the number of search results items displayed on each page. This parameter is only used when the **webhelp.search.enable.pagination** parameter is enabled.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.show.changes.and.comments

When set to `yes`, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

webhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

webhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq` element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

webhelp.sitemap.priority

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

Parameters Specific to WebHelp Responsive Output

webhelp.default.collection.type.sequence

Specifies if the **sequence** value will be used by default when the `collection-type` attribute is not specified. This option is helpful if you want to have *Next* and *Previous* navigational buttons generated for all HTML pages. Allowed values are **no** (default) and **yes**.

webhelp.enable.search.autocomplete

Specifies if the *Autocomplete* feature is enabled in the WebHelp search text field. The default value is `yes`.

webhelp.fragment.after.body

In the generated output it displays a given XHTML fragment after the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.logo_and_title

In the generated output it displays a given XHTML fragment after the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.main.page.search

In the generated output it displays a given XHTML fragment after the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.toc_or_tiles

In the generated output it displays a given XHTML fragment after the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.top_menu

In the generated output it displays a given XHTML fragment after the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.body

In the generated output it displays a given XHTML fragment before the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.logo_and_title

In the generated output it displays a given XHTML fragment before the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.main.page.search

In the generated output it displays a given XHTML fragment before the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.toc_or_tiles

In the generated output it displays a given XHTML fragment before the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.top_menu

In the generated output it displays a given XHTML fragment before the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.footer

In the generated output it displays a given XHTML fragment as the page footer. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.head

In the generated output it inserts a given XHTML fragment in the `<head>` element. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.welcome

In the generated output it displays a given XHTML fragment as a welcome message (or title). The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.merge.nested.topics.related.links

Specifies if the related links from nested topics will be merged with the links in the parent topic. Thus the links will be moved from the topic content to the related links component and all of the links from the same group (for example, *Related Tasks*, *Related References*, *Related Information*) are merged into a single group. The default value is `yes`.

webhelp.show.breadcrumb

Specifies if the breadcrumb component will be presented in the output. The default value is `yes`.

webhelp.show.child.links

Specifies if child links will be generated in the output for all topics that have subtopics. The default value is `no`.

webhelp.show.indexterms.link

Specifies if an icon that links to the index will be presented in the output. The default value is `yes`.

webhelp.show.main.page.tiles

Specifies if the tiles component will be presented in the main page of the output. For a *tree* style layout, this parameter should be set to `no`.

webhelp.show.main.page.toc

Specifies if the table of contents will be presented in the main page of the output. The default value is `yes`.

webhelp.show.navigation.links

Specifies if navigation links will be presented in the output. The default value is `yes`.

webhelp.show.print.link

Specifies if a print link or icon will be presented within each topic in the output. The default value is `yes`.

webhelp.show.related.links

Specifies if the related links component will be presented in the WebHelp Responsive output. The default value is `yes`. The `webhelp.merge.nested.topics.related.links` parameter can used in conjunction with this one to merge the related links from nested topics into the links in the parent topic.

webhelp.show.publication.toc

Specifies if a table of contents will be presented on the left side of each topic in the output. The default value is `yes`.

webhelp.show.topic.toc

Specifies if a topic table of contents will be presented on the right side of each topic in the output. This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted. The default value is `yes`.

webhelp.show.top.menu

Specifies if a menu will be presented at the topic of the main page in the output. The default value is `yes`.

webhelp.publication.toc.hide.chunked.topics

Specifies if the table of contents will contain links for *chunked* topics. The default value is `yes`.

webhelp.publication.toc.links

Specifies which links will be included in the table of contents. The possible values are:

- **chapter** (default) - The TOC will include links for the current topic, its children, its siblings, and its direct ancestor (including the direct ancestor's siblings), and the parent chapter.
- **topic** - The TOC will only include links for the current topic and its direct children.
- **all** - The TOC will include all links.

webhelp.publication.toc.tooltip.position

By default, if a topic contains a `shortdesc` element, its content is displayed in a tooltip when the user hovers over its link in the table of contents. This parameter controls whether or not this tooltip is displayed and its position relative to the link. The possible values are:

- **left** (default)
- **right**
- **top**
- **bottom**
- **hidden** - The tooltip will not be displayed.

webhelp.top.menu.depth

Specifies the maximum depth level of the topics that will be included in the top menu. The default value is `3`. A value of `0` means that the menu has unlimited depth.

webhelp.topic.collapsible.elements.initial.state

Specifies the initial state of collapsible elements (tables with titles, nested topics with titles, sections with titles, index term groups). The possible values are `collapsed` or `expanded` (default value).

Related Information:

Customizing the WebHelp Responsive Output on page 1083
WebHelp Responsive Output Layout and Features on page 1040

DITA Map to WebHelp Classic Transformation

DITA content can be transformed into several types of WebHelp Classic systems.

WebHelp Classic Output

To publish a *DITA map* as a **WebHelp Classic** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Skins Tab - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to process the transformation.

When the **DITA Map WebHelp Classic** transformation is complete, the output is automatically opened in your default browser.

WebHelp Classic with Feedback Output

To publish a *DITA map* as a **WebHelp Classic with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Skins Tab - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Classic with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

For more information about the feedback-enabled WebHelp system, watch our video demonstration:

https://www.youtube.com/embed/eoQ2uxHvppE

Parameters for Customizing WebHelp Classic Output

To customize a transformation scenario, you can edit various parameters, including the following most commonly used ones:

args.default.language

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

clean.output

Deletes all files from the output folder before the transformation is performed (only `no` and `yes` values are valid and the default value is `no`).

fix.external.refs.com.oxygenxml (Only supported when the DITA OT transformation process is started from Oxygen XML Editor plugin)

The DITA Open Toolkit usually has problems processing references that point to locations outside of the directory of the processed *DITA map*. This parameter is used to specify whether or not the application should try to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references. The fix has no impact on your edited DITA content. Allowed values: `true` or `false` (default).

force.unique

When set to `true` (default value), the transformation will be forced to create unique output files for each instance of a resource when a map contains multiple references to a single topic.

use.stemming

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

webhelp.body.script

URL value that specifies the location of a well-formed XHTML file containing the custom script that will be copied in the `<body>` section of every WebHelp page.

webhelp.copyright

Adds a small copyright text that appears at the end of the **Table of Contents** pane.

webhelp.custom.resources

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

webhelp.favicon

The file path that points to an image to be used as a *favicon* in the WebHelp output.

webhelp.footer.file

Path to an XML file that includes the footer content for your WebHelp output pages. You can use this parameter to integrate social media features (such as widgets for Facebook™, Twitter™, Google Analytics, or Google+™). The file must be well-formed, each widget must be in separate `div` or `span` element, and the code for each `script` element is included in an XML comment (also, the start and end tags for the XML comment must be on a separate line). The following code exert is an example for adding a Facebook™ widget:

```
<div id="facebook">
  <div id="fb-root"/>
  <script>
    <!-- (function(d, s, id) { var js, fjs = d.getElementsByTagName(s)[0];
      if (d.getElementById(id)) return;
      js = d.createElement(s); js.id = id;
      js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
      fjs.parentNode.insertBefore(js, fjs); }
       (document, 'script', 'facebook-jssdk')); -->
    </script>
    <div data-share="true" data-show-faces="true" data-action="like"
       data-layout="standard" class="fb-like"/>
</div>
```

webhelp.footer.include

Specifies whether or not to include footer in each WebHelp page. Possible values: `yes`, no. If set to no, no footer is added to the WebHelp pages. If set to `yes` and the `webhelp.footer.file` parameter has a value, then the content of that file is used as footer. If the `webhelp.footer.file` has no value then a default **Oxygen** footer is inserted in each WebHelp page.

webhelp.google.search.results

A file path that specifies the location of a well-formed XHTML file containing the Google Custom Search Engine element `gcse:searchresults-only`. You can use all supported attributes for this element. It is recommend to set the `linkTarget` attribute to `frm` for frameless (*iframe*) version of WebHelp or to `contentWin` for the frameset version of WebHelp. The default value for this attribute is `_blank` and the search results will be loaded in a new window. If this parameter is not specified, the following code will be used `<gcse:searchresults-only linkTarget="frm"></gcse:searchresults-only>`

webhelp.google.search.script

A file path that specifies the location of a well-formed XHTML file containing the Custom Search Engine script from Google.

webhelp.head.script

URL value that specifies the location of a well-formed XHTML file containing the custom script that will be copied in the `<head>` section of every WebHelp page.

webhelp.logo.image.target.url

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

webhelp.logo.image

Specifies a path to an image displayed as a logo in the left side of the output header.

webhelp.reload.stylesheet

Set this parameter to `true` if you have out of memory problems when generating WebHelp. It will increase processing time but decrease the memory footprint. The default value is `false`.

webhelp.search.custom.excludes.file

The path of the file that contains name patterns for HTML files that should not be indexed by the WebHelp search engine. Each exclude pattern must be on a new line. The patterns are considered to be relative to the output directory, and they accept wildcards such as `'*'` (matches zero or more characters) or `'?'` (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

webhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.show.changes.and.comments

When set to `yes`, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

webhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

webhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq` element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

webhelp.sitemap.priority

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

Related Information:

Customizing WebHelp Classic Output on page 1009

WebHelp Classic Output Layout and Features on page 989

DITA Map to PDF Transformation

Oxygen XML Editor plugin comes bundled with the DITA Open Toolkit that provides a mechanism for converting *DITA maps* to PDF output.

Creating a DITA Map to PDF Transformation Scenario

To create a *DITA Map to PDF* transformation scenario, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF** and click the **Edit** button (or use the **Duplicate** button if your *framework* is read-only).
3. Use the various tabs to configure the transformation scenario. In the **Parameters** tab, you can use a variety of parameters to customize the output. For example, the following parameters are just a few of the most commonly used ones:
   - `show.changes.and.comments` - If set to `yes`, user comments, replies to comments, and *tracked changes* are published in the PDF output.
   - `customization.dir` - Specifies the path to a customization directory.
4. Click **OK** and then the **Apply Associated** button to run the transformation scenario.

Related Information:
DITA Map to PDF Output Customization on page 1117

DITA Map to PDF WYSIWYG Transformation

Oxygen XML Editor plugin comes bundled with a **DITA-OT CSS Publishing to PDF plugin** that allows you to convert *DITA maps* to PDF using a CSS layout processor. Oxygen XML Editor plugin also comes bundled with a built-in CSS-based PDF processing engine called **Oxygen PDF Chemistry**. For those who are familiar with CSS, this makes it very easy to style and customize the PDF output of your DITA projects without having to work with *xsl:fo* customizations. Oxygen XML Editor plugin also supports a few third-party processors.

The following processors are supported:

- **Oxygen PDF Chemistry** - A built-in processor that is bundled with Oxygen XML Editor plugin. For more information, see the Oxygen PDF Chemistry User Guide.
- **Prince Print with CSS** (not included in the Oxygen XML Editor plugin installation kit) - A third-party component that needs to be purchased from http://www.princexml.com.
- **Antenna House Formatter** (not included in the Oxygen XML Editor plugin installation kit) - A third-party component that needs to be purchased from http://www.antennahouse.com/antenna1/formatter/.

The **DITA-OT CSS Publishing to PDF plugin** is located in the following directory: *`DITA-OT-DIR`*`/plugins/com.oxygenxml.pdf.css`. Although it includes a set of CSS files in its `css` subfolder, when this plugin is used in Oxygen XML Editor plugin, the CSS files located in the `${frameworks}` directory take precedence.

Creating the Transformation Scenario

To create an **DITA Map to PDF WYSIWYG** transformation scenario, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF - WYSIWYG**.
3. In the **CSS Processor** tab, choose the processor type. You can select between **Oxygen PDF Chemistry**, **Prince XML**, or **Antenna House**.
4. In the **Parameters** tab, configure any of the following parameters (if applicable):
   - **css.processor.path.chemistry** (if you are using the **Oxygen PDF Chemistry** processor) - Specifies the path to the **Oxygen PDF Chemistry** executable file that will be run to generate the PDF. If this parameter is not set, your system's PATH environment variable will be used to find and start the **Oxygen PDF Chemistry** processor.
   - **css.processor.path.prince** (if you are using the **Prince Print with CSS** processor) - Specifies the path to the Prince executable file that will be run to produce the PDF. If you installed Prince using its default settings, you can leave this blank.
   - **css.processor.path.antenna-house** (if you are using the **Antenna House Formatter** processor) - Specifies the path to the Antenna House executable file that will be run to produce the PDF. If you installed Antenna House using its default settings, you can leave this blank.
   - **show.changes.and.comments** - When set to `yes`, user comments, replies to comments, and *tracked changes* are published in the PDF output. The default value is no.
   - **dita.css.list** - Allows you to specify a list of CSS URLs to be used by the PDF processor (instead of the default CSS files). The files must have URL syntax and be separated using semicolons. If the value is empty, the CSS associated with the current selection from the **Styles** drop-down menu is used.
   - **args.css** - Allows you to specify a path to a custom CSS to be used in addition to those specified in the `dita.css.list` parameter OR in addition to the CSS that is currently selected in the **Styles** drop-down menu. The files must have URL syntax and be separated using semicolons. Also, the `dita.css.list` parameter must be left empty to use these files in addition to the selection in the **Styles** drop-down menu.
5. Click **OK** and run the transformation scenario.

Customizing the Output

The **DITA-OT CSS Publishing to PDF plugin** makes it very easy to style and customize the PDF output of your DITA projects without having to work with *xsl:fo* customizations. You can style the PDF output by simply using a custom CSS to change the styling and then re-running the transformation scenario until you get the desired result.

For more information, see the Customization CSS section. It offers numerous tips and examples for customizing the CSS for the PDF output.

Changing the Style of an Element

To change the style of a particular element, you need to create an additional CSS file that will store the customization rules. Once you have created this file, you need to instruct the editor how to use this additional CSS. This can be done in two ways:

- Specify the path to your custom CSS using the `args.css` parameter:
  1. Edit a **DITA map to PDF WYSIWYG** transformation scenario.
  2. In the **Parameters** tab, specify the path to your custom CSS files in the `args.css` parameter.
  3. Click **OK** and run the transformation scenario.

  This method is appropriate if you just want to apply the styling customization to the output.
- Create an alternate CSS for the DITA document type:
  1. Follow the procedure for adding an alternate CSS file in Customizing the Main CSS of a Framework on page 1297.
  2. Once you have configured your CSS as an additional layer, you can select it from the **Styles** drop-down menu (on the toolbar).
  3. Run the **DITA Map PDF - WYSIWYG** transformation scenario and the customization rules from the additional CSS will be visible in the produced PDF.

  This method allows you to have many customization CSS files and simply select the one that you need at any time for both the output and the rendering in **Author** mode.

Using the CSS Inspector to See the Style Associated with an Element

To find the styles associated with an element, follow this procedure:

1. Open a document in the editor and select **Inspect Styles** from the contextual menu. This opens the **CSS Inspector** view that shows all the CSS rules that apply to the selected element.
2. Click the particular link for the CSS selector that you need to change and Oxygen XML Editor plugin will open the CSS file and position the cursor at that selector.
3. After you identify the source of the styles you want to modify, copy the CSS rule in your customization CSS file and modify it according to your needs.

   To see the changes in **Author** mode, press **F5** to reload the document.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Configuring and Managing Multiple CSS Styles on page 1315
CSS Inspector View on page 209
Oxygen PDF Chemistry User Guide
Customization CSS on page 899

Customization CSS

The publishing process of the **DITA Map PDF - WYSIWYG** transformation scenario is driven by a customization CSS.

To change the styling of the output:

1. Create a custom CSS file that will contain all your customizations. It is recommended to create this file in your project directory.

   Important: Always use CSS rules that match the DITA class attribute values. Avoid using CSS selectors containing element names, because they have a weaker specificity and will not override the styles defined in the built-in CSS files. For instance, to match the p element, use its class attribute:

   ```
   *[class ~= "topic/p"] {
   ```

```
  color: gray;
}
```

Instead of:

```
p {
  color: gray;
}
```

Tip: You can organize the CSS rules in separate files, but they all need to be imported from a single master CSS file. For simplicity, this manual provides instructions based upon a single CSS file.

Note: LESS files are supported (LESS is a CSS pre-processor with a CSS-like syntax, but has a lot of features designed to speed up development).

2. Add the custom CSS rules. See the topics in this section for assistance with specific types of customizations.
3. In the **DITA Map PDF - WYSIWYG** transformation scenario, set the full path to the custom CSS file as the value of the `args.css` parameter.

Debugging the CSS

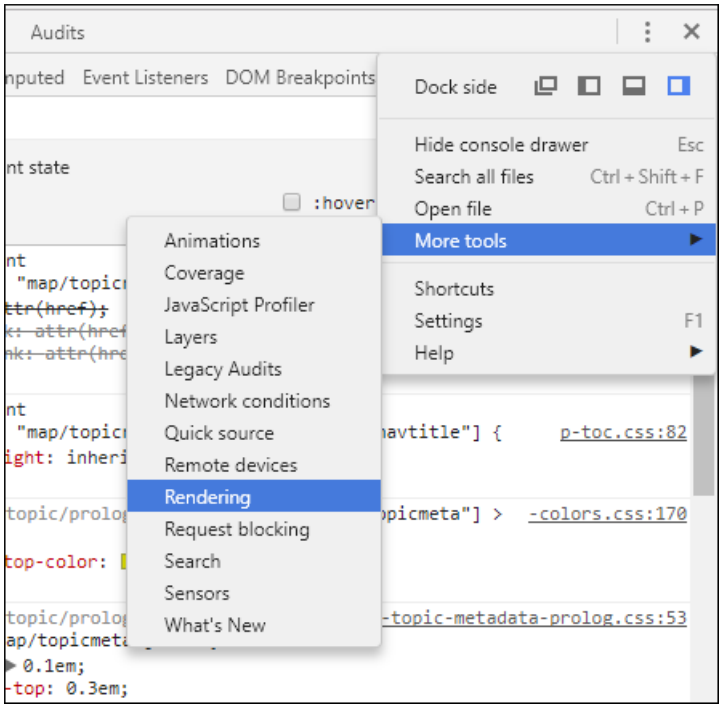
If you notice that some of the CSS properties were not applied, some typical debugging steps might include the following:

1. The first thing you should try is to check the file structure of the **merged map**. This can be found in the `out/pdf-css` directory and it has the `.merged.xml` file extension. You can open this file in **Oxygen XML Editor/Author** to examine the XML structure. Optionally, you can pretty print it (**Format and Indent**) to make the structure easier to read.
2. Then check that the CSS selector is written correctly.
3. If you still cannot identify the problem, then inspect how the styles are applied (you can try one of the methods listed below).

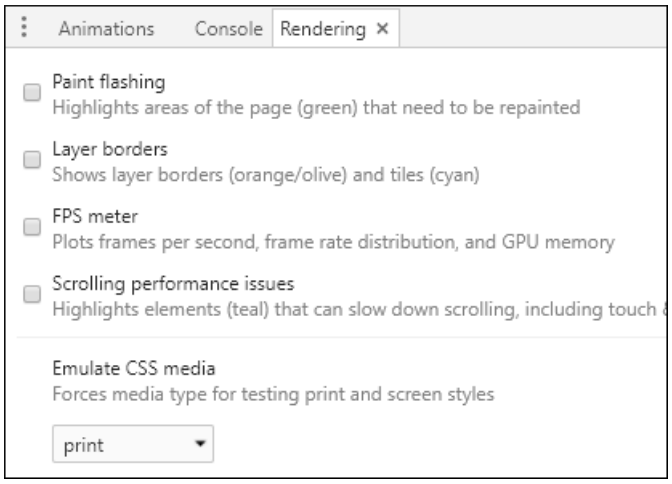
Inspecting the Applied Styles Using the Chrome Browser

To inspect the applied CSS styles using Chrome:

1. Open the `.merged.xml` file in Chrome.
2. Click on the element you want to inspect.
3. Activate the **Chrome Developer Tools** by using ⋮ > **More Tools** > **Developer Tools**, or press **CTRL+SHIFT+I**.
4. Activate the **Rendering** pane by using ⋮ > **More Tools** > **Rendering**:



5. In the **Rendering** pane, select **print** from the **Emulate CSS media** section. This will activate the CSS selectors enclosed in `@media print {..}`.



Note: This allows you to the debug styling of elements, table of contents, and index, but not the styles of the page margin boxes (headers, footers) or page breaks.

Tip: In the left pane of the **Developer Tools** interface, you can inspect elements and their styles in the **Elements** tab. You can click on any of the links to display the applied CSS files in the **Styles** tab in the right pane. Editing the styles in that pane results in a live preview of how the change will affect the output.

CAUTION: Do not modify the built-in rules directly in the CSS files from the **Oxygen XML Editor/Author** installation. Instead, copy the rules to your own customization CSS.

Inspecting the Applied Styles Using Oxygen XML Editor/Author

To inspect styles:

1. Open the file ending in `.merged.xml` file in **Oxygen XML Editor/Author**
2. From the **Styles** toolbar, choose the **+ Print Ready** entry. This will activate the CSS selectors enclosed in `@media print {..}`.
3. Click on the element you want to style. Use the **Inspect Styles** action from the Contextual Menu. A specialized view will show the built-in CSS rules.

Note: This allows you to debug styling of elements, but not of the page margin boxes (headers, footers) or page breaks.

CAUTION: Do not modify the built-in rules directly in the CSS files from the **Oxygen XML Editor/Author** installation. Instead, copy the rules to your own customization CSS.

Other techniques

These are some other techniques you may find useful:

- Add background and borders properties to the specific CSS rule. If they do not appear in the output then there is a problem with the rule selector.
- Try to use the `!important` notation to the property that is not applied, or make the selector more specific (you can add more parent selectors).
- To figure out how the elements are mapped into PDF, you can use this fragment in the customization CSS:

```
* {
   border: 1pt solid blue !important;
}

*:before(1000) {
   content:  oxy_name() !important;
   color: orange;
}

*:before(999) {
   content: "[ class= '" attr(class) "'] " !important;
   color: orange;
}
```

This will show the element name, its class attribute, and will paint a blue border around each of the elements in the output. It will not show the page margin boxes or some content elements that were hidden.

Page Size

This is where you can find information on how the page sizes are defined.

Page Size - Built-in CSS rules

The `[PLUGIN_DIR]/css/p-page-size.css` file contains the default page rules. It uses the US-LETTER size (8.5in by 11in). The content of this file is:

```
@page {
    padding-top:0.2em;
    padding-bottom:0.2em;
    size: us-letter;
    margin: 1in;
}
```

Note: This is listed solely for illustration purposes, as the plugin might use something different.

How to Change the Page Size

Suppose you want to publish using the standard A4 page size, with a margin of 2cm.

In your customization css, use:

```
@page {
    size: A4;
    margin: 2cm;
}
```

If you need different margins depending on the page side:

```
@page {
    size: A4;
    margin: 2cm;
}
@page :left{
    margin-right:4cm;
}
@page :right{
    margin-left:4cm;
}
```

This would only increase the gutter margins or the inside margins needed for binding of the final book. The other margins would remain 2cm.

How to Change the Page Orientation

Suppose you want to publish on a landscape page. The default is portrait, so you need to change it by using the size property. This will contain both the physical measurements and the orientation. In your customization css, use:

```
@page {
    size: us-letter landscape;
}
```

How to Change the Page Settings for a Specific Element

Suppose your publication is mainly using a portrait page orientation, but there are some topics that have wide images. To avoid having the images bleeding outside of the page, you could use a wider page setting (landscape).

1. Mark the topic with an `@outputclass` attribute and give it a distinct value (for example, **wide**).
2. In your customization css, match the topic from the CSS and associate it with a named page. This page has landscape orientation and small margins.

```
*[class ~= "topic/topic"][outputclass = 'wide'] {
    page: wide-page;
}

@page wide-page {
    size: letter landscape;
    margin: 0.5in;
```

```
}
```

Note: You can extend the example on any DITA element that should be displayed on wider page. Change the CSS selector to:

```
*[outputclass = 'wide'] {
    page: wide-page;
}
```

Metadata

DITA has a solid vocabulary for specifying metadata. There are `<prolog>` elements in the topics, and `<topicmeta>`, `<bookmeta>` elements in the bookmaps. They can be used to define authors, dates, audiences, organizations, etc. See: https://www.oxygenxml.com/dita/1.3/specs/archSpec/base/metadata-in-maps-and-topics.html

It is up to you to decide where this information should be presented, in the PDF content or in the PDF document properties.

Metadata - Input XML fragment

In the merged map, the metadata section is placed inside the `<oxy:front-page>` element. This is different from the original placement in the map or bookmap - after the title, but allows usage of information from it in the title page.

Bookmaps

This is an example of a section taken from a merged bookmap where the CSS processor is applied to obtain the PDF. It only contains some of the possible metadata elements. The `bookmeta` metadata section is inherited from `topicmeta`:

```
<bookmap xmlns:ditaarch="http://dita.oasis-open.org/architecture/2005/"
    xmlns:opentopic-index="http://www.idiominc.com/opentopic/index" cascade="merge" class="- map/map bookmap/bookmap
 "
    ditaarch:DITAArchVersion="1.3" >

      <oxy:front-page xmlns:oxy="http://www.oxygenxml.com/extensions/author">

        <bookmeta xmlns:dita-ot="http://dita-ot.sourceforge.net/ns/201007/dita-ot"
            class="- map/topicmeta bookmap/bookmeta ">
            <author class="- topic/author ">Howe Tuduit</author>
            <bookid class="- topic/data bookmap/bookid ">
                <isbn class="- topic/data bookmap/isbn ">071271271X</isbn>
                <booknumber class="- topic/data bookmap/booknumber ">SG99-9999-00</booknumber>
                <maintainer class="- topic/data bookmap/maintainer ">
                    <organization class="- topic/data bookmap/organization ">Retro Tools</organization>
                    <person class="- topic/data bookmap/person "/>
                </maintainer>
            </bookid>
            <bookrights class="- topic/data bookmap/bookrights ">
                ...
                <bookowner class="- topic/data bookmap/bookowner ">
                    <organization class="- topic/data bookmap/organization ">Retro Tools, Inc.</organization>
                </bookowner>
            </bookrights>
        </bookmeta>

        <oxy:front-page-title>
            ...
...
```

Maps

The maps have a more simple structure, they use the `<topicmeta>` element for metadata sections. This is also a simplified example, as there may be many more elements in the metadata section:

```
<map xmlns:ditaarch="http://dita.oasis-open.org/architecture/2005/"
    xmlns:opentopic-index="http://www.idiominc.com/opentopic/index" cascade="merge" class="- map/map "
    ditaarch:DITAArchVersion="1.3">
    ...

      <oxy:front-page xmlns:oxy="http://www.oxygenxml.com/extensions/author">

        <topicmeta xmlns:dita-ot="http://dita-ot.sourceforge.net/ns/201007/dita-ot" is-chapter="true"
            class="- map/topicmeta ">
            <author class="- topic/author ">Dan Caprioara</author>
            <metadata class="- topic/metadata ">
                <prodinfo class="- topic/prodinfo ">
```

```
                    <prodname class="- topic/prodname ">oXygen PDF CSS DITA Plugin</prodname>
                </prodinfo>
            </metadata>
            <audience class="- topic/audience "/>
        </topicmeta>
...
```

Metadata - Built-in CSS rules

The `[PLUGIN_DIR]/css/p-meta.css` file contains the rules that extract metadata. The `<topicmeta>` can be used as a child of `map`, or a `topicref`. The map `<topicmeta>` is moved into the `<oxy:front-page>` element, so its local name is used to differentiate between the two cases and the CSS selectors will start with it.

```
/*
 * ================================================
 *
 * PDF metadata
 *
 * ================================================
 */
@media oxygen-chemistry {


/*
 * Titles (maps).
 */
*[class ~= "map/map"] > *[class ~= "topic/title"] {
    -oxy-pdf-meta-title: content();
}
*[class ~= "map/map"][title] {
    -oxy-pdf-meta-title: attr(title);
}

/*
 * Titles (bookmaps).
 */
front-page *[class ~= "bookmap/booktitle"] > *[class ~= "bookmap/mainbooktitle"] {
    -oxy-pdf-meta-title: content();
}

/*
 * Subject (bookmaps), using the alternate title.
 */
front-page *[class ~= "bookmap/booktitle"] > *[class ~= "bookmap/booktitlealt"] {
    -oxy-pdf-meta-description: content();
}


/*
 * Author (maps and bookmaps)
 *
 * Bookmeta is a specialization of topicmeta.
 */
front-page *[class ~= "map/topicmeta"] > *[class ~= "topic/author"] {
    -oxy-pdf-meta-author: content();
}

/*
 * Created (maps and bookmaps)
 */
front-page  *[class ~= "map/topicmeta"] > *[class ~= "topic/critdates"] > *[class ~= "topic/created"] {
    -oxy-pdf-meta-custom: "Created" attr(date);
}

/*
 * Revised (maps and bookmaps) - can have multiple occurences, so we aggregate them.
 */
front-page *[class ~= "map/topicmeta"] > *[class ~= "topic/critdates"]:has(*[class ~= "topic/revised"]) {
    -oxy-pdf-meta-custom: "Revised" oxy_xpath('string-join(*[contains(@class, " topic/revised ")]/@modified, ", " )');
}

/*
 * Keywords (maps and bookmaps).
 */
front-page *[class ~= "map/topicmeta"] > *[class ~= "topic/keywords"] > *[class ~= "topic/keyword"] {
    -oxy-pdf-meta-keyword: content();
}

/*
 * Organizaton holding the  book rights. (bookmaps)
 */
front-page *[class ~= "bookmap/bookmeta"] > *[class ~= "bookmap/bookrights"] > *[class ~= "bookmap/bookowner"] {
    -oxy-pdf-meta-custom: "Book rights owner" content();
}

/*
 * ISBN (bookmaps)
 */
front-page *[class ~= "bookmap/bookmeta"] > *[class ~= "bookmap/bookid"] > *[class ~= "bookmap/isbn"] {
    -oxy-pdf-meta-custom: "ISBN" content();
}
```

```
/*
 * Maintainer (bookmaps)
 */
front-page *[class ~= "bookmap/bookmeta"] > *[class ~= "bookmap/bookid"] > *[class ~= "bookmap/maintainer"] {
    -oxy-pdf-meta-custom: "Maintainer" content();
}

}


/*
 * Reset the topicmeta styles, in editor are used uses colors.
 * The topicmeta is used in the metadata section of the map, but
 * also in each topicref from the TOC.
 * The metadata section from the map is hidden.
 */
*[class~="map/topicmeta"] {
 border-color: transparent;
 color:inherit;
 background-color: inherit;
    border:none;
    margin:0;
    padding:0;
}
*[class~="map/topicmeta"]:before {
 content: none;
}
```

Note: This is listed solely for illustration purposes, as the plugin might use something different.

How to Add the Publication Audience to the Custom PDF Metadata

The audience element indicates the users the publication is addressing. This can be placed inside a `<topicmeta>` element in a `<map>` as in the following example:

```
<map>
    ...
    <topicmeta>
        ...
        <audience type="programmer" job="programming" experiencelevel="expert"/>
```

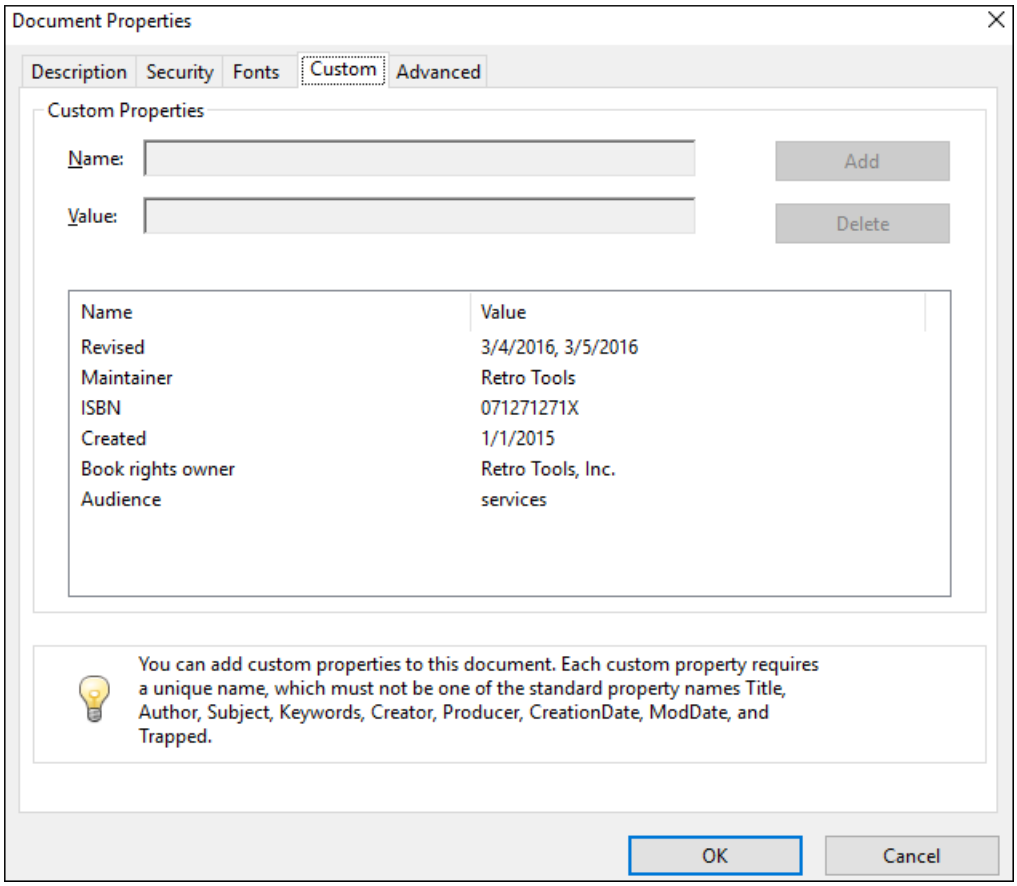
To collect the `@type` attribute, add the following in your customization css:

```
map > *[class ~= "map/topicmeta"] > *[class ~= "topic/audience"] {
    -oxy-pdf-meta-custom: "Audience" attr(type);
}
```

Note: It is best to use the class selector (such as `*[class ~= "map/topicmeta"]`) instead of `topicmeta` to cover cases where the elements are specialized (for instance, in a bookmap the `bookmeta` is a `topicmeta`, so your selector will also function for bookmaps, not only simple maps.

Note: The selector begins with `map >` to choose the `<topicmeta>` that is a direct child of the map, not other `<topicmeta>` elements from other `<topicref>` elements.

The metadata is displayed in the **Custom** tab of the **Document Properties** dialog box from Acrobat Reader:



How to Show Metadata in the Cover Page

Suppose you need to present the **author** and the **ISBN** just under the publication title. Your bookmap contains:

```
<bookmap id="taskbook">
    <booktitle>
        <booklibrary>Retro Tools</booklibrary>
        <mainbooktitle>Product tasks</mainbooktitle>
        <booktitlealt>Tasks and what they can do</booktitlealt>
    </booktitle>
    <bookmeta>
        <author>Howe Tuduit</author>
        <critdates>
            <created date="1/1/2015"/>
            <revised modified="3/4/2016"/>
            <revised modified="3/5/2016"/>
        </critdates>
        <bookid>
            <isbn>071271271X</isbn>
            <booknumber>SG99-9999-00</booknumber>
...
```

The entire <booktitle> element content is displayed on the first page of the PDF, so suppose you need to add the information after it.

In your customization css, add the following CSS rules:

```
*[class ~= "bookmap/booktitle"]:after {
    display:block;
    content: "by " oxy_xpath('//*[contains(@class, " bookmap/bookmeta ")]/*[contains(@class, " topic/author ")]/
text()');
    margin-top: 4em;
    text-align: center;
    color: gray;
}
*[class ~= "bookmap/booktitle"]:after(2) {
    display:block;
    content: "ISBN "oxy_xpath('//*[contains(@class, " bookmap/isbn ")]/text()');
    text-align: center;
    color: gray;
}
```

The following CSS extensions were used in this example:

- **oxy_xpath** - Executes an XPath expression and returns a string content.
- **`:after(N)`** - Creates more than one *after* pseudo element. The argument value represents how far the generated content is from the real content. In the example above, the content of the `:after` is closer to the title (upper) than the content of the `:after(2)`.

Generating Synthetic Pages for Metadata.

Suppose you need to show this information on a page that follows the title page, instead of on the title page. In this case, you need to prepare a named page and place the content on it. In your customization css, add the following CSS rules:

```
@page page-for-meta {
    background-color: yellow; /* Just to see it better*/
    @top-left-corner {
        content:""; /* Remove the default header */
    }
    @top-right-corner {
        content:""; /* Remove the default header */
    }
}

*[class ~= "bookmap/booktitle"]:after {
    page: page-for-meta;
}
*[class ~= "bookmap/booktitle"]:after(2) {
    page: page-for-meta;
}
```

How to Show Metadata in the Header or Footer

If you need to add some of the map metadata to the header of the front page (for example, the **creation date**), add the following CSS rules in your customization css:

```
front-page > *[class ~= "map/topicmeta"] > *[class ~= "topic/critdates"] > *[class ~= "topic/created"]{
    string-set: mapcreated attr(date);
}


@page front-page {
     @top-center {
          content: "Created: " string(mapcreated);
     }
}
```

Note: The *front-page* is the name of a page that used to present the `<oxygen:front-page>` element. The above page rule is combined with the default styles.

How to Show Arbitrary/Computed Data in the Header or Footer

The header and footer are compose of page margin boxes that can be populated with static text, by using *string-sets*.

You can extract and process data from any location in your document by executing XPath expressions. You can bind the evaluation result to a CSS *string-set* and then use it in the page margin boxes.

The following example counts the words from the publication and shows it in the front page footer.

In your customization css, add the following CSS rules:

```
*[class ~= "map/map"]{
    string-set: number-of-words oxy_xpath("string-length(normalize-space(.)) - string-length(translate(normalize-
space(.),' ',')) +1");
}

@page front-page {
     @bottom-center {
          content: "Number of words: " string(number-of-words);
     }
}
```

Note: This example counts all the words, including the ones from the TOC, but does not take into account the static labels.

Note: Preferably define the string set directly on the root element if you intend to use it in the front page.

Note: The context node for the XPath execution is(are) the one(s) matched by the CSS selector.

Related Information:

Cover (Title) Page

Customizing the cover page is one of the most requested customization requests.

Cover Page - Input XML fragment

The merged map contains a `<oxy:front-page>` element, child of the root element. This contains the metadata and an `<oxy:front-page-title>` element with the title structure.

```
<bookmap xmlns:ditaarch="http://dita.oasis-open.org/architecture/2005/" ...>
    <oxy:front-page xmlns:oxy="http://www.oxygenxml.com/extensions/author">
        <bookmeta xmlns:dita-ot="http://dita-ot.sourceforge.net/ns/201007/dita-ot"
            ...
        </bookmeta>
        <oxy:front-page-title>
            <booktitle xmlns:dita-ot="http://dita-ot.sourceforge.net/ns/201007/dita-ot"
                class="- topic/title bookmap/booktitle ">
                <booklibrary class="- topic/ph bookmap/booklibrary ">Retro Tools</booklibrary>
                <mainbooktitle class="- topic/ph bookmap/mainbooktitle ">Product tasks</mainbooktitle>
                <booktitlealt class="- topic/ph bookmap/booktitlealt ">Tasks and what they can do</booktitlealt>
            </booktitle>
        </oxy:front-page-title>
    </oxy:front-page>
```

Cover Page - Built-in CSS rules

The `<oxy:front-page>` element is associated with a page named *front-page* with no headers or footers. The `<oxy:front-page-title>` is styled with a bigger font. The built-in CSS rules are in `[PLUGIN_DIR]/css/p-front-page.css`.

```
@media print {

    front-page {
        page: front-page;
    }

    front-page-title {
        display:block;
        text-align:center;
        margin-top:3in;
        font-size:2em;
        font-family:arial, helvetica, sans-serif;
        font-weight:bold;
    }

    @page front-page {
        @top-left-corner    {          content:none }
        @top-left           {          content:none }
        @top-center         {          content:none }
        @top-right          {          content:none }
        @top-right-corner   {          content:none }
        @bottom-left-corner {          content:none }
        @bottom-left        {          content:none }
        @bottom-center      {          content:none }
        @bottom-right       {          content:none }
        @bottom-right-corner{          content:none }
    }
}
```

Note: This is listed solely for illustration purposes, as the plugin might use something different.

How to Add a Background Image for the Cover

The simplest way is to create an SVG image as large as the entire physical page and set it as the background for the *front-page*.

Consider the following SVG document (`cover.svg`).

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE svg PUBLIC "-//W3C//DTD SVG 1.1//EN" "http://www.w3.org/Graphics/SVG/1.1/DTD/svg11.dtd">
<svg xmlns="http://www.w3.org/2000/svg" width="8.5in" height="11in">
    <desc>A gradient as big as a page.</desc>
    <defs>
        <linearGradient id="lc"
            x1="0%" y1="0%"
            x2="0%" y2="100%"
            spreadMethod="pad">
            <stop offset="0%"   stop-color="#00DD00" stop-opacity="1"/>
            <stop offset="100%" stop-color="#00AA00" stop-opacity="1"/>
        </linearGradient>
    </defs>
```

```
    <rect x="0" y="0" width="100%" height="100%" rx="10" ry="10"
        style="fill:url(#lc);
        stroke: #005000;
        stroke-width: 3;"/>
    <text x="45%" y="95%"  color="#FFFFAA" font-size="0.7cm"> Sample </text>
</svg>
```

It shows a gradient (but it can be anything, created with any tool) and the "Sample" text. It is as large as a US-LETTER page and can be used in a publication using this page size.

Note: You can use raster image formats (such as PNG or JPEG), but it is best to use vector images (such as SVG or PDF). They can be scaled and produce better results when printed.

In your customization css, add the following:

```
@page front-page {
    background-image: url("us-letter.svg");
    background-position:center;
}
```

Note: For smaller artworks, you can use background-position with percentage values.

Note: The text from the SVG or PDF background images are searchable in the PDF reader.

Related Information:
Oxygen PDF Chemistry: Graphics

How to Change Styling of the Cover Page Title

Match the `<front-page-title>` in your customization css:

```
front-page-title {
  margin-top: 1in;
  font-size: 3em;
}
```

How to Add Text to the Cover Page

If you need to add arbitrary text to the cover page, you can use the `<oxy:front-page-title>` element as an anchor and add as many blocks of text as you need after it, and style them differently.

In your customization css, add the following:

```
front-page-title:after(1) {
    display:block;
    content: "DRAFT VERSION";
    font-size: large;
    color: red;
    text-align:center;
}

front-page-title:after(2) {
    display:block;
    content: "DO NOT DISTRIBUTE WITHOUT PERMISSION";
    font-size: large;
    color: red;
    text-align:center;
    font-style: italic;
}
```

The result is:

To use content from the document, you can use the `oxy_xpath` function in the `content` property. For a more complex example, including the generation of a new page for the synthetic `:after` elements, see: How to Show Metadata in the Cover Page on page 906.

Related Information:

How to Show Metadata in the Cover Page on page 906

How to Place Cover on the Right or Left Side

The merged map contains a `<oxy:front-page>` element that is displayed as the cover.

In your customization css, add the following CSS rules:

```
front-page{
    page-break-before:left;
}
```

Note: This will create an empty page at the beginning of the publication, moving the cover content on the needed side.

For more information, see: Oxygen PDF Chemistry: Controlling Page Breaks.

Related Information:

Double Side Pagination on page 917

How to Add a Specific Number of Empty Pages After the Cover Page

In your customization css, add the following CSS rules:

```
@page my-blank-page {
    /* Hide the page numbers */
    @top-left {content: none};
    @top-right {content: none};
}

front-page:after(1){
    page:my-blank-page;
    display:block;
    content: "\2002";
    color:transparent;
    page-break-after:always;
}

front-page:after(2){
    page:my-blank-page;
    display:block;
    content: "\2002";
    page-break-after:always;
}

front-page:after(3){
    page:my-blank-page;
    display:block;
    content: "\2002";
    page-break-after:always;
}
```

Note: The *"\2002"* character is a space that is not shown on the pages, but gives a value for the content property.

Related Information:

How to Force an Odd or Even Number of Pages in a Chapter on page 918

Front Matter and Back Matter

The *front matter* is a series of topics that are usually placed after the cover page and before the TOC or the content.

The *back matter* is a series of topics that are usually placed after the content of the book.

Front Matter and Back Matter - Input XML fragment

The frontmatter topics are wrapped in an `<oxy:front-matter>` element, that has the class `bookmap/frontmatter` (it is a clone of the original `<frontmatter>` element from the map):

Front Matter and Back Matter - Built-in CSS

The built-in CSS rules are in `[PLUGIN_DIR]/css/p-bookmap-frontmatter-backmatter.css`. By default, it associates the `<oxy:front-matter>` and `<oxy:back-matter>` elements with the *matter* page, that has no headers or other page margin boxes. Each of the child topics start on a new page.

The content of this file is:

```
@media print {

    front-matter,
    back-matter {
        page: matter-page;
    }

    /* Put the sections on a separate page. */
    front-matter > *[class ~= "topic/topic"],
    back-matter > *[class ~= "topic/topic"]{
      page-break-before: always;
    }
}
```

Note: This is listed solely for illustration purposes, as the plugin might use something different.

Related Information:

Page Headers and Footers on page 921

How to Remove Page Breaks Between Front Matter Child Topics

If you do not like the fact that all the topics that enter a bookmap `<frontmatter>` start on a new page, you can disable this by using the following rules in your customization css:

```
front-matter > *[class ~= "topic/topic"],
back-matter > *[class ~= "topic/topic"]{
      page-break-before: auto;
}
```

How to Style the Front Matter and Back Matter Topics

Suppose you want the topics from the *front matter* and *back matter* to start at the middle of the page and use a smaller fine print.

In your customization css, add the following:

```
front-matter > *[class ~= "topic/topic"] {
    margin-top: 50%;
    border-top: 5pt solid silver;
    font-size: 0.5em;
}
```

Numbering

The default numbering system is to only number the chapters in the TOC and in the content (shallow numbering).

Note: For a plain DITA map, the chapters are the `<topicref>` elements that are placed on the first level. For bookmaps, the chapters are the topics referenced by a `<chapter>` element.

Numbering - Input XML Fragments

The numbering affects three parts of your publication, the table of contents, headers/footers, and chapter titles:

The Table of Contents

The table of contents is a tree of `<topicref>` elements.

```
<map xmlns:ditaarch="http://dita.oasis-open.org/architecture/2005/" ...>
    <oxy:front-page xmlns:oxy="http://www.oxygenxml.com/extensions/author">
        ...
    </oxy:front-page>
    <opentopic:map xmlns:opentopic="http://www.idiominc.com/opentopic">
        <title class="- topic/title ">Publication Title</title>

        <topicref is-chapter="true" class="- map/topicref " ... >
            <topicmeta class="- map/topicmeta " ... >
                <navtitle href="#unique_1" class="- topic/navtitle ">Overview</navtitle>
                ...
            </topicmeta>
            <topicref class="- map/topicref " ...>
                <topicmeta class="- map/topicmeta " data-topic-id="dcpp_resources">
```

```
                    <navtitle href="#unique_2" class="- topic/navtitle ">Resources</navtitle>
                    ...
                </topicmeta>
            </topicref>
        ...
    </opentopic:map>
...
</map>
```

Note: The `<opentopic:map>` element contains the effective table of contents structure.

Note: The TOC items are the elements with the class: `- map / topicref`.

Note: The ones identified as chapters have the `@is-chapter` attribute set.

The Header and Footers

These are based on string sets generated for the titles. The complete set of strings is defined in: `[INSTALLATION_DIR]/css/print/p-pages-and-headers.css`.

The CSS rules that build the string sets are matching the map title from the front page and the titles from the content.

```
<oxy:front-page xmlns:oxy="http://www.oxygenxml.com/extensions/author">
        <oxy:front-page-title>
            <title class="- topic/title ">Publication Title</title>
        </oxy:front-page-title>
</oxy:front-page>
```

The main content is organized as follows:

```
<map xmlns:ditaarch="http://dita.oasis-open.org/architecture/2005/" ...>
    ...
    <opentopic:map xmlns:opentopic="http://www.idiominc.com/opentopic">
        ...
    </opentopic:map>

    <topic is-chapter="true" oid="dcpp_overview">
        <title class="- topic/title ">Overview</title>
        <body class="- topic/body ">
            ...
        </body>
        <topic class="- topic/topic " id="unique_2" oid="dcpp_resources">
            <title class="- topic/title ">Resources</title>
            ...
        </topic>
        <topic class="- topic/topic " id="unique_2" oid="dcpp_parameters">
            <title class="- topic/title ">Parameters</title>
            ...
        </topic>
    </topic>
```

Note: The topic content comes after the `<opentopic:map>` element.

Note: The child topics are the elements that have the class `- topic/topic` included in the parents.

Note: The ones identified as chapters have the `@is-chapter` attribute set.

The Titles of Chapters

The titles from the content are children of the topics:

```
<topic class="- topic/topic " id="unique_2" oid="dcpp_parameters">
        <title class="- topic/title ">Parameters</title>
            ...
</topic>
```

Note: The title elements have the class: `- topic/title`. The actual element name can be different.

Numbering - Built-in CSS rules

This section contains information about how to deal with shallow or deep chapter numbering.

CSS for Shallow Numbering

There is a file located in `[PLUGIN_DIR]/css/print/p-numbering-shallow`. The following examples are from this file.

Note: This is listed solely for illustration purposes, as the plugin might use something different.

The counters should be reset on the root element. This is the element that has the class `map/map`. Note that bookmaps derive from maps and the following selector will also match them:

```
*[class ~= "map/map"] {
    counter-reset: page 1
                   toc-chapter 0
                   chapter 0
                   figcount 0
                   tablecount 0;
}
```

Table of Contents

There is only one counter for the chapters, named `toc-chapter`. This is reset on the book parts (for bookmaps) and is incremented on each chapter that is not a part.

Note: The parts are also marked as chapters.

```
*[class ~= "map/topicref"][is-chapter]:not([is-part]) {
    counter-increment:toc-chapter;
}
*[class ~= "map/topicref"][is-part] {
   counter-reset:toc-chapter !important;
   counter-increment:toc-part;
}

/* All other topicrefs that follow a part should not have a number (i.e appendices)  */
*[class ~= "map/topicref"][is-part] ~ *[class ~= "map/topicref"]:not([is-part]) > *[class ~= "map/topicmeta"] >
 *[class ~= "topic/navtitle"]:before{
   content: none !important;
   counter-increment:none;
}
```

To display the numbers in the TOC, a `:before` pseudo element is used on the navigation titles from the `<topicref>` elements:

```
*[class ~= "map/topicref"][is-part] > *[class ~= "map/topicmeta"] > *[class ~= "topic/navtitle"]:before{
   content:"Part " counter(toc-part, upper-roman) ". " !important;
   color:inherit;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicmeta"] > *[class ~= "topic/
navtitle"]:before{
    content:"Chapter " counter(toc-chapter) ". " !important;
    color:inherit;
}
```

The Titles of Chapters in the Main Content

The `part` and `chapter` counters are incremented on the elements that have the class `topic/topic`:

```
*[class ~= "topic/topic"][is-part]{
    counter-increment:part;
    counter-reset:chapter;
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]){
    counter-increment:chapter;
}
```

Except for `<frontmatter>`, `<backmatter>`, and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"],
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"],
*[class ~= "bookmap/backmatter"],
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) {
   counter-increment:none !important;
   counter-reset: chapter part;
}
```

These counters are used in the content, before the titles:

```
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"]:before {
    content: "Part " counter(part, upper-roman) ". ";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"]:before {
    content: "Chapter " counter(chapter) ". ";
}
```

Except for <frontmatter>, <backmatter>, and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/backmatter"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before,
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) > *[class ~= "topic/title"]:before,
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) *[class ~= "topic/topic"] > *[class
 ~= "topic/title"]:before{
    content:none !important;
}
```

Headers

Define the string-sets used in the header, using the `part` and `chapter` counters:

```
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"] {
    string-set: parttitle " | " counter(part, upper-roman) " - " content(), chaptertitle  ""; /* Avoid propagating a
 past chapter title on a new part */
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"] {
    string-set: chaptertitle " | " counter(chapter) " - " content();
}
```

Except for front matter, backmatter and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"] > *[class ~= "topic/title"],
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"],
*[class ~= "bookmap/backmatter"] > *[class ~= "topic/title"],
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) > *[class ~= "topic/title"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) *[class ~= "topic/topic"] > *[class
 ~= "topic/title"]{
   string-set: parttitle "", chaptertitle "";
}
```

CSS for Deep Numbering

The CSS file responsible for deep numbering is `[PLUGIN_DIR]/css/print/p-optional-numbering-deep.css`. The following examples are taken from this file.

Note: This CSS file is not used by default. To use it, you should copy it and then import it from your customization css.

Note: This is listed solely for illustration purposes, as the plugin might use something different.

For implementing the deep numbering, first the counters for the root element should be reset. In our example, the root is the element that has the class attribute set to `map/map`. Note that the following selector will also match bookmaps, as they are derived from maps:

```
*[class ~= "map/map"] {
    counter-reset: page 1
                   toc-chapter 0
                   toc-section1 0
                   toc-section2 0
                   toc-section3 0
                   toc-section4 0
                   chapter 0
                   section1 0
                   section2 0
                   section3 0
                   section4 0
                   figcount 0
                   tablecount 0;
}
```

Table of Contents

There are counters for parts (`toc-part`), chapters (`toc-chapter`) and sections (`toc-section1`, `toc-section2`, `toc-section3`).

Note: The parts are also marked as chapters.

```
*[class ~= "map/topicref"][is-chapter]:not([is-part]) {
 counter-increment:toc-chapter;
 counter-reset: toc-section1;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"]{
```

```
 counter-increment:toc-section1;
 counter-reset: toc-section2;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/topicref"]{
 counter-increment:toc-section2;
 counter-reset: toc-section3;
}

/*
  All the parts get a part number.
  Each chapter gets a chapter number.
  All other topicrefs following a part do not have a number.
*/
*[class ~= "map/topicref"][is-part] {
   counter-reset:toc-chapter !important;
   counter-increment:toc-part;
}

/* All other topicrefs that follow a part should not have a number (i.e appendices)  */
*[class ~= "map/topicref"][is-part] ~ *[class ~= "map/topicref"]:not([is-part]) > *[class ~= "map/topicmeta"]:before{
   content: none !important;
   counter-increment:none;
}

*[class ~= "map/topicmeta"] > *[class ~= "topic/navtitle"]:before {
 display:none !important; /* In case this CSS is used in cascade with the shallow numbering. */
}
```

To display the numbers in the table of contents, a pseudo `:before` element is used on `<topicmeta>` (this contains the TOC label and the header and page number).

To avoid wrapping the text under the chapter/section number, these pseudo elements are moved to the left of the `<topicmeta>` using position **absolute**:

```
*[class ~= "map/topicref"] {
    position:relative;
}

*[class ~= "map/topicref"] > *[class ~= "map/topicmeta"]:before {
    display:block;
    position:absolute; /* If the TOC item is wrapping, it won't wrap under the numbering. */
    top:0.4em; /* This aligns the before with the TOC item text. */
}

*[class ~= "map/topicref"][is-part] > *[class ~= "map/topicmeta"]:before {
    left: -1.5em; /* Increase the value of width and left as the depth increases. */
    width:1em;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicmeta"]:before {
    left: -1.5em;
    width:1em;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/
topicmeta"]:before {
    left: -2em;
    width:2em;
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/topicref"] >
 *[class ~= "map/topicmeta"]:before {
    left: -2.5em;
    width:2.5em;
}
```

And now the content for each pseudo element (depending on its depth) is set:

```
*[class ~= "map/topicref"][is-part] > *[class ~= "map/topicmeta"]:before {
    content: counter(toc-part, upper-roman) ".";
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicmeta"]:before {
    content: counter(toc-chapter) ".";
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/
topicmeta"]:before {
    content: counter(toc-chapter) "." counter(toc-section1);
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/topicref"] >
 *[class ~= "map/topicmeta"]:before {
    content: counter(toc-chapter) "." counter(toc-section1) "." counter(toc-section2);
}
*[class ~= "map/topicref"][is-chapter]:not([is-part]) > *[class ~= "map/topicref"] > *[class ~= "map/topicref"] >
 *[class ~= "map/topicref"] > *[class ~= "map/topicmeta"]:before {
    content: counter(toc-chapter) "." counter(toc-section1) "." counter(toc-section2) "." counter(toc-section3);
}
```

The Titles of Chapters in the Main Content

The `part`, `chapter` and `section1`/`section2`/`section3` counters are incremented on the elements that have the class `topic/topic`:

```
*[class ~= "topic/topic"][is-part]{
    counter-increment:part;
    counter-reset:chapter;
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) {
    counter-increment: chapter;
    counter-reset:section1;
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] {
    counter-increment:section1;
    counter-reset:section2;
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/topic"] {
    counter-increment:section2;
    counter-reset:section3;
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/topic"]  >
 *[class ~= "topic/topic"] {
    counter-increment:section3;
    counter-reset:section4;
}
```

Now avoid incrementing the counters for `<frontmatter>`, `<backmatter>`, and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"],
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"],
*[class ~= "bookmap/backmatter"],
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) {
   counter-increment:none !important;
   counter-reset: part chapter section1 section2 section3 section4 !important;
}
```

The following counters are used in the content, before the titles:

```
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"]:before{
        content: counter(part, upper-roman) ". ";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"]:before{
        content: counter(chapter) ". ";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before{
        content: counter(chapter) "." counter(section1) ". ";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/topic"] >
 *[class ~= "topic/title"]:before{
        content: counter(chapter) "." counter(section1) "." counter(section2) ". ";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/topic"] >
 *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before{
        content: counter(chapter) "." counter(section1) "." counter(section2) "." counter(section3) ". ";
}
```

Avoid however setting content for `<frontamatter>`, `<backmatter>`, and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/backmatter"] > *[class ~= "topic/title"]:before,
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"]:before,
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) > *[class ~= "topic/title"]:before,
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) *[class ~= "topic/topic"] > *[class
 ~= "topic/title"]:before{
  content:none !important;
}
```

Headers

Define the string-sets used in the header and make use of counters:

```
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"] {
    string-set: parttitle " | " counter(part, upper-roman) " - " content(), chaptertitle  ""; /* Avoid propagating a
 past chapter title on a new part */
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"] {
    string-set: chaptertitle " | " counter(chapter) " - " content(), sectiontitle "";
```

```
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/title"] {
    string-set: sectiontitle " | " counter(chapter) "." counter(section1) " - " content();
}
```

Avoid using counters for <frontamatter>, <backmatter>, and other topics following the last book part (for bookmaps).

```
*[class ~= "bookmap/frontmatter"] > *[class ~= "topic/title"],
*[class ~= "bookmap/frontmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"],
*[class ~= "bookmap/backmatter"] > *[class ~= "topic/title"],
*[class ~= "bookmap/backmatter"] *[class ~= "topic/topic"] > *[class ~= "topic/title"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) > *[class ~= "topic/title"],
*[class ~= "topic/topic"][is-part] ~ *[class ~= "topic/topic"]:not([is-part]) *[class ~= "topic/topic"] > *[class
 ~= "topic/title"]{
   string-set: parttitle "", chaptertitle "", sectiontitle "";
}
```

How to Reset the Page Numbers after the TOC

In your customization css, use the following rule:

```
*[class ~= "map/map"] > map + *[class ~= "topic/topic"]{
    counter-reset: page 1;
}
```

The map selector matches the <opentopic:map> element that contains the table of contents. So, the effect is to reset the page number at the beginning of the first topic following the TOC.

How to Remove the 'chapter NN' Prefix from Table of Contents and Content.

If you are using the shallow numbering CSS (this is the default), and you want to hide the "Chapter" prefix, use the following rules in your customization css:

For the TOC:

```
*[class ~= "map/topicmeta"] > *[class ~= "topic/navtitle"]:before {
 display:none !important;
}
```

For the titles in the content, change the content of the title :before (this example just uses the chapter number):

```
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"]:before {
    content: counter(chapter) ". ";
}
```

How to Use a Deeper Numbering for Sections

If you need a deeper numbering, that goes to the sections and subsections, import the rules defined in the [INSTALLATION_DIRECTORY]/css/print/p-optional-double-side-pagination.css from your customization css.

Related Information:

CSS for Deep Numbering on page 914

Double Side Pagination

By default, the processor generates pages that are mirror images (the right page has the header on the right side, the left pages have the header on the left side). The chapters follow one another with no constraint on the page side.

Note: For a plain DITA map, the chapters are the <topicref> elements that are placed on the first level. For bookmaps, the chapters are the topics referenced by a <chapter> element.

This section contains information about how to position the start of the chapters on an odd folio number. Some of the CSS rules given here as examples are already listed in: [INSTALLATION_DIRECTORY]/css/print/p-optional-double-side-pagination.css. You may choose to import this file from your customization css.

How to Start Chapters on Odd Pages

A common use case is to arrange the chapters of the publication to start on an odd page number.

In your customization css, add the following:

```
@page chapter {
 -oxy-initial-page-number: auto-odd;
}
@page table-of-contents {
 -oxy-initial-page-number: auto-odd;
}
```

Supported values for `-oxy-initial-page-number` include: **auto**, **auto-even**, **auto-odd**, or a number.

How to Style the Empty (Blank) Pages

By making the chapters start on an odd page, the CSS processor might add blank pages to the previous page sequence as padding.

To style those blank pages add the following code in your customization css:

```
@page chapter:blank, table-of-contents:blank {
     @top-left      { content: none; }
     @top-center    { content: none; }
     @top-right     { content: none; }
     @bottom-left   { content: none; }
     @bottom-center { content: none; }
     @bottom-right  { content: none; }
}
```

Note: This just removes the headers and footers, but you can use a background image or a header with "Intentionally left blank" text.

Related Information:

How to Add a Background Image for the Cover on page 908

How to Force an Odd or Even Number of Pages in a Chapter

Another use case is to specify a number of pages for a section. Suppose that you have a table of contents that follows the cover page and you need to have an even number of pages. Hence, the next chapter would start on an even page.

In your customization css, use the `-oxy-force-page-count` property with an even value:

```
@page table-of-contents {
 -oxy-force-page-count: even;
}
```

Supported values for `-oxy-force-page-count` include: **even**, **odd**, **end-on-even**, **end-on-odd**, **auto**, **no-force**.

How to Style the First page of a Chapter

You can use the `:first` page rule selector to control how the first page of a chapter looks. Suppose that you have defined the following layout for your default page and you want to put the publication title (the `maptile` string) on the header of the first page (instead of the chapter name that is displayed on this page):

In your customization css, add the following:

```
@page chapter:first {
 @top-right-corner { content: string(maptitle); }
 @top-left { content: none; }
}
```

Table of Contents

The table of contents is a hierarchy of topic titles with links to the topic content.

Table of contents - Input XML fragment

In the merged DITA map, the `<opentopic:map>` contains a hierarchy of `<topicref>` elements, or other elements (such as `<chapter>` or `<part>`) that are specializations of `<topicref>`.

Each of the `<topicref>` elements include a *metadata* section that includes the topic title.

```
<bookmap ...>

<oxy:front-page> ... </oxy:front-page>
<oxy:front-matter> ... </oxy:front-matter>
```

```
<opentopic:map xmlns:opentopic="http://www.idiominc.com/opentopic">

       <oxy:toc-title xmlns:oxy="http://www.oxygenxml.com/extensions/author" empty="true"/>

       <booktitle class="- topic/title bookmap/booktitle ">
           <booklibrary class="- topic/ph bookmap/booklibrary ">Retro Tools</booklibrary>
           <mainbooktitle class="- topic/ph bookmap/mainbooktitle ">Product tasks</mainbooktitle>
           <booktitlealt class="- topic/ph bookmap/booktitlealt ">Tasks and what they can do</booktitlealt>
       </booktitle>


       <chapter is-chapter="true"
           class="- map/topicref bookmap/chapter " href="#unique_5" type="topic">
           <topicmeta class="- map/topicmeta " data-topic-id="installing">
               <navtitle href="#unique_5" class="- topic/navtitle ">Installing</navtitle>
               ...
           </topicmeta>

           <topicref class="- map/topicref " href="#unique_6" type="task">
               <topicmeta class="- map/topicmeta " data-topic-id="installstorage">
                   <navtitle href="#unique_6" class="- topic/navtitle ">Installing hard drives or other
                       storage</navtitle>
                   ...
               </topicmeta>
               ...
           </topicref>
           ...
       </chapter>
```

Note: The `<oxy:toc-title>` element is used as a placeholder for the name of the TOC. For instance, you can use the string "Contents", specified on a pseudo element, in the CSS.

Table of contents - Built-in CSS

The built-in CSS rules are in: `[PLUGIN_DIR]/css/p-toc.css`.

Related Information:

Page Headers and Footers on page 921

How to Style the Table of Contents Entries

You can change the font of the labels and aspect of the dots and page numbers from the table of contents.

Note: Each of the items from the table of contents is an element that has the `map/topicref` class.

The following example uses the italic font for the label and changes the color and style of the connecting line between the title and the page number.

In your customization css, add the next two selectors:

```
/* The toc item label - the topic title */
*[class ~= "map/topicref"] *[class ~= "topic/navtitle"] {
    font-style:italic;
    color: navy;
}

/* The dotted line between the topic name and the page number. */
*[class ~= "map/topicref"] *[class ~= "topic/navtitle"]:after {
    content: leader('-') target-counter(attr(href), page);
    color: navy;
}
```

And if you need to alter the indent of the nested table of contents items, use the following selector:

```
*[class ~= "map/topicref"] *[class ~= "map/topicref"] {
    margin-left: 1em;
}
```

The numbers can be styled like this:

```
*[class ~= "map/topicref"] > *[class ~= "map/topicmeta"]:before,
*[class ~= "map/topicref"]
    > *[class ~= "map/topicmeta"] > *[class ~= "topic/navtitle"]:before{
  color:blue;
}
```

How to Change the Header of the Table of Contents

In the built-in CSS, there is a page named *table-of-contents*. The default is to have the word 'Contents' in its header (this is localized, using the `toc-header` string defined in the `p-18n.css`) alternating in the left or right side of the header:

```
@page table-of-contents:left {
    @top-left {
        content: string(toc-header) " | " counter(page, lower-roman);
        font-size: 8pt;
    }
}
@page table-of-contents:right {
     @top-right {
         content: string(toc-header) " | " counter(page, lower-roman);
         font-size: 8pt;
     }
}
```

If you need to change this string, or change the color, you should use the following `@page` selectors as a starting point in your customization css:

```
@page table-of-contents:left {
    @top-left {
        content: "My publication table of contents | " counter(page, lower-roman);
        color:red;
    }
}
@page table-of-contents:right {
     @top-right {
        content: "My publication table of contents | " counter(page, lower-roman);
        color:red;
     }
}
```

Related Information:

Localization on page 929

How to Make the Table of Contents Start on an Odd Page

In your customization css, add the following snippet for the *table-of-contents* page:

```
@page table-of-contents{
    -oxy-initial-page-number: auto-odd;
}
```

Related Information:

Double Side Pagination on page 917

How to Display a Topic Before the Table of Contents

To display a topic before the *table-of-contents* page, follow these steps:

1. Make sure the topic is referenced on the first level in the DITA map.
2. Set the `@outputclass` to **before-toc** on the root element of the topic.

```
<topic id="MyTopic" outputclass="before-toc">
```

Result: When the PDF is processed, the topic will automatically appear before the table of contents.

PDF Bookmarks

The PDF Bookmarks are used to generate a hierarchical structure similar to a table of contents in a specialized view of your PDF Reader.

PDF Bookmarks - Built-in CSS

The PDF bookmarks are generated by matching the titles from the topics in the content. The built-in CSS rules are in: `[PLUGIN_DIR]/css/p-bookmarks.css`.

```
*[class~="topic/topic"] > *[class~="topic/title"] {
  bookmark-label:content(before) content(text);
  -ah-bookmark-label:content(before) content();
}

*[class~="topic/topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 1;
```

```
  -ah-bookmark-level: 1;
  bookmark-level: 1;
}
*[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 2;
  -ah-bookmark-level: 2;
  bookmark-level: 2;
}
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 3;
  -ah-bookmark-level: 3;
  bookmark-level: 3;
}
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/
title"] {
  prince-bookmark-level: 4;
  -ah-bookmark-level: 4;
  bookmark-level: 4;
}
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 5;
  -ah-bookmark-level: 5;
  bookmark-level: 5;

}
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] *[class~="topic/topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 6;
  -ah-bookmark-level: 6;
  bookmark-level: 6;

}
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/title"] {
  prince-bookmark-level: 7;
  -ah-bookmark-level: 7;
  bookmark-level: 7;

}
```

Note: This is listed solely for illustration purposes, as the plugin might use something different.

How to Control the Depth of the Sections From the PDF Bookmarks.

By default, the PDF bookmarks are generated for up to 7 levels. If you need to limit them (for example to 2 levels), you can use the following CSS rules in your customization css:

```
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/title"],
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/
title"],
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] > *[class~="topic/title"],
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] *[class~="topic/topic"] > *[class~="topic/title"],
*[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/topic"] *[class~="topic/
topic"] *[class~="topic/topic"] *[class~="topic/topic"] > *[class~="topic/title"] {
  bookmark-label:none;
}
```

These rules clear the labels generated by the titles starting with the depth 3 (the topic nesting level is given by the selectors `*[class~="topic/topic"]`).

How to Remove the Numbering From the PDF Bookmarks

By default, the PDF bookmark labels are generated while taking the text set before the chapters titles into account. Since this usually contains the part, chapter, or section numbers, the PDF Bookmarks will make use of them.

The solution is to remove the `content(before)` from the `bookmark-label`, leaving just the `content(text)`.

In your customization css, add the following CSS rules:

```
*[class~="topic/topic"] > *[class~="topic/title"] {
  bookmark-label:content(text);
  -ah-bookmark-label: content();
}
```

Related Information:

Numbering on page 911

Page Headers and Footers

The page headers and footers use the string sets defined for publication, chapter, and section titles. These string-sets are defined in the numbering css. This section contains information about how they are used in the page definitions.

Page Headers and Footers - Built-in CSS

All page definitions are found in: `[PLUGIN_DIR]css/print/p-pages-and-headers.css`.

Note: This is listed solely for illustration purposes, as the plugin might use something different.

There are pages for:

Default Page

The default page imposes a header that contains the publication title, chapter, and section title. They alternate on the left or right side of the page:

```
   @page :left {
       @top-left {
           content: string(maptitle) string(parttitle) string(chaptertitle) string(sectiontitle) " | "
counter(page);
           font-size:8pt;
       }
   }

   @page :right{
       @top-right {
           content: string(maptitle) string(parttitle) string(chaptertitle) string(sectiontitle) " | "
counter(page);
           font-size:8pt;
       }
   }
```

Chapter Page

This is inherited from the default page. The chapter page is associated to the topics marked as chapters, usually the ones that are direct children of the map. It clears the header from the first page of each chapter.

```
   @page chapter{
    /* Currently inherit from the default page.*/
   }

   /* No headers on the chapter first page. */
   @page chapter:first:left{
    @top-left {
     content: none;
    }
   }
   @page chapter:first:right{
    @top-right {
     content: none;
    }
   }
```

Front Matter and Back Matter page

The bookmap front matter and back matter page. It clears the headers.

```
  @page matter-page {
       @top-left-corner    {          content:none }
       @top-left           {          content:none }
       @top-center         {          content:none }
       @top-right          {          content:none }
       @top-right-corner   {          content:none }
       @bottom-left-corner {          content:none }
       @bottom-left        {          content:none }
       @bottom-center      {          content:none }
       @bottom-right       {          content:none }
       @bottom-right-corner{          content:none }
   }
```

Blank Pages

Clears the header for the blank pages that may be created by a `page-break-before`, `page-break-after`, or by using double side pagination:

```
    @page :blank{
     @top-left {
      content: none;
     }
     @top-right {
      content: none;
     }
    }
```

Index Page

The page that contains the index terms (appears only if there are such items in your topics). It uses a lower roman page number in the footer:

```
 @page index {
        @top-left-corner    {          content:none }
        @top-left           {          content:none }
        @top-center         {          content:none }
        @top-right          {          content:none }
        @top-right-corner   {          content:none }
        @bottom-left-corner {          content:none }
        @bottom-left        {          content:none }
        @bottom-center      {          content: counter(page, lower-alpha) }
        @bottom-right       {          content:none }
        @bottom-right-corner{          content:none }
 }
 @media oxygen-chemistry {
        @page index {
            column-count: 2;
            column-fill: auto;
        }
  }
```

When transformed with Chemistry, the page layout is spread on two columns.

Large Tables Page

The big tables are placed on a rotated page, with orientation landscape:

```
@page landscape-page :right {
    size: landscape;

    @top-left {
        content: none
    }
    @top-center {
        content: none
    }
    @top-right {
        content: none
    }

    @right-bottom {
        content: string(maptitle) string(parttitle) string(chaptertitle) string(sectiontitle) " | " counter(page);
        font-size: 8pt;
        transform: rotate(90);
        vertical-align: middle;
        text-align: right;
    }
}

@page landscape-page :left {
    size: landscape;

    @top-left {
        content: none
    }
    @top-center {
        content: none
    }
    @top-right {
        content: none
    }

    @right-top {
        content: string(maptitle) string(parttitle) string(chaptertitle) string(sectiontitle) " | " counter(page);
        font-size: 8pt;
        transform: rotate(90);
```

```
        vertical-align: middle;
        text-align: left;
    }
}
```

How to Add a Multi-line Copyright Notice to the Footer

Suppose you want to add a footer with the following two lines of text at the end of each page that is shown on the right side:

```
© 2017 - My Company Ltd
All rights reserved
```

For this, you need to specify a rule that matches all the right pages and adds that content in the `bottom-center`. In your customization css, add the following CSS rule:

```
@page :right{
    @bottom-center {
        content: "© 2017 - My Company Ltd \A All rights reserved";
        font-size: 0.5em;
        color: silver;
    }
}
```

Note: Other page rules (such as the *table-of-contents*) override the contents of the `@bottom-center` because they are more specific. If you need to also print the copyright in the TOC pages, then use this as the selector:

```
@page :right, table-of-contents:right {
  ...
}
```

Note: To use new lines (`\n` characters) in your headers or footers, use the `\A` notation, as in the example above.

How to Add a Background Image to the Header

A common use-case is to add a background image to one of the page corners.

```
@page :left {
    @bottom-left-corner{
        content: " ";
        background-image: url('https://www.oxygenxml.com/resellers/resources/OxygenXMLEditor_icon.svg');
        background-repeat:no-repeat;
        background-position:50% 50%;
    }
}
```

Important: Always specify a `content` property. If not, the page margin box will not be generated.

Note: You can use raster image formats (such as PNG or JPEG), but it is best to use vector images (such as SVG or PDF). They can be scaled and produce better results when printed.

Related Information:

Images on page 931
How to Add a Background Image for the Cover on page 908

How to Simplify the Header (Only Keep the Chapter Title)

The headers display information such as *map title*, *part title*, *chapter title*, and *section title*, ending in the page number.

```
content: string(maptitle) string(parttitle) string(chaptertitle) string(sectiontitle) " | " counter(page);
```

This might be too much if you have long titles. The solution is to override the default header content.

In your customization css, add the following CSS rule:

```
@page :left {
    @top-left {
        content: string(chaptertitle) " | " counter(page);
    }
}
@page :right{
    @top-right {
        content: string(chaptertitle) " | " counter(page);
    }
```

```
}
```

How to Change the Header Separators (Between Sections and Chapter Titles)

There are a number of `strings` defined for part, chapter, and sections. Each of these strings start with the " | " character as a separator. For example, in the header of a page, you may find a sequence of strings:

```
My Publication | Introduction | Getting Started
```

1. "My Publication" is the value of the `maptitle` string.
2. "Introduction" is the value of the `chaptertitle` string.
3. "Getting Started" is the value of the `sectiontitle` string.

There might be cases where you want to change this separator. You will need to recompose the header content using the above string sets. Suppose you want to use " - " as a separator. In your customization css, add the following CSS rule:

```
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"] {
    string-set: parttitle " - " counter(part, upper-roman) " - " content(), chaptertitle  ""; /* Avoid propagating a
 past chapter title on a new part */
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"] {
    string-set: chaptertitle " - " counter(chapter) " - " content();
}
```

If you enabled the CSS for Deep Numbering on page 914, then use:

```
/*
 * Alter the string sets that are shown in the header of the page.
 */
*[class ~= "topic/topic"][is-part] > *[class ~= "topic/title"] {
    string-set: parttitle " - " counter(part, upper-roman) " - " content(), chaptertitle  ""; /* Avoid propagating a
 past chapter title on a new part */
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/title"] {
    string-set: chaptertitle " - " counter(chapter) " - " content(), sectiontitle "";
}
*[class ~= "topic/topic"][is-chapter]:not([is-part]) > *[class ~= "topic/topic"] > *[class ~= "topic/title"] {
    string-set: sectiontitle " - " counter(chapter) "." counter(section1) " - " content();
}
```

How to Change the Header Styling Depending on Page Side

To modify the styling of the default page headers, add the following CSS rule in your customization css:

```
@page :left {
    @top-left {
        color:navy;
        font-style:italic;
    }
    @top-right {
        color:red;
    }
}
```

If you intend to modify **just the headers of the table of contents**, use the `table-of-contents` page rule selector:

```
@page table-of-contents:left {
    @top-left {
        color:navy;
        font-style:italic;
    }
    @top-right {
        color:red;
    }
}
```

Index

The index section collects all the index terms from the publication and shows them in a sorted tree.

Index - Input XML fragment

The structure that holds the index tree is the `<<opentopic-index:index.groups>` element.

```
```

Each of the groups contain:

- A label, the starting letter ("T" in the following example).
- A tree of `<opentopic-index:index.entry>` elements.

Each of the entries contain:

- The formatted value (`<opentopic-index:formatted-value>`).
- A link to the publication content (`<opentopic-index:refID>/<oxy:index-link>`).
- Possibly other child entries.

Index - Built-in CSS

All index styling is found in: `[PLUGIN_DIR]css/print/p-index.css`.

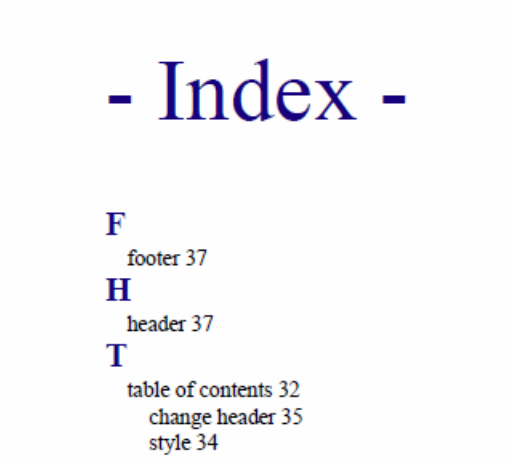
How to Style the Index Page Title and the Grouping Letters

In your customization css, add the following CSS rules:

```
index\.groups index\.group label {
    font-size:1.5em;
    color:navy;
}

index\.groups:before {
    content: "- Index - ";
    color:navy;
    font-size: 4em;
}
```

The result is:

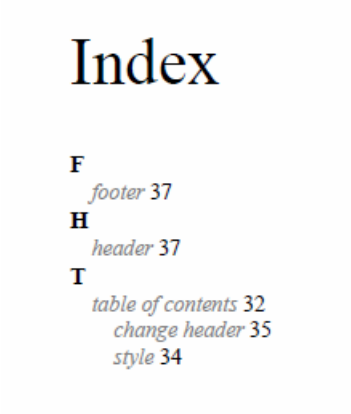


How to Style the Index Terms Labels

In your customization css, add the following CSS rule:

```
index\.groups formatted-value {
    font-style:oblique;
    color:gray;
}
```

The result is:



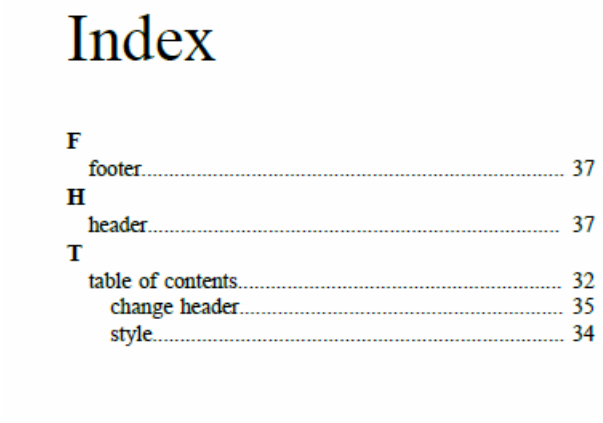
How to Add Filling Dots Between the Index Labels and the Page Numbers

Suppose you want the leader CSS content to generate a row of dots. It is necessary that the parent entry have the text justified.

In your customization css, add the following CSS rule:

```
index\.entry {
    text-align:justify;
}
index\.entry  formatted-value:after {
    content:leader('.');
}
```

The output now contains the dots:



How to Change the Index Page Number Format

The page number is reset at the beginning of the index page by the built-in CSS rule:

```
index\.groups {
        counter-reset: page 1;
}
```

If you want to start the page counter from a different initial number, just change the value of this counter.

If you need to style the page number differently (for example, using decimals), add the following CSS rule in your customization css:

```
@page index {
        @bottom-center      {          content: counter(page, decimal) }
}
```

Page Breaks

The page breaks can be controlled in multiple ways:

1. By creating an `@page` and assigning it to an element will create a page break between this element and the sibling elements that have a different page.
2. Using the CSS properties: `page-break-before` `page-break-after`.

Related Information:

Double Side Pagination on page 917

Page Breaks - Built-in CSS

Page break properties are used in: `[PLUGIN_DIR]css/print/p-page-breaks.css`.

How to Avoid Page Breaks in Lists and Tables

To avoid splitting elements over two pages, you can use the `page-break-inside` CSS property. For example, if you want to impose this on tables and lists, then add the following rules to your customization css:

```
*[class ~= "topic/table"] {
    page-break-inside:avoid;
}
*[class ~= "topic/ol"] {
    page-break-inside:avoid;
}
*[class ~= "topic/ul"] {
    page-break-inside:avoid;
}
```

Note: Since the task steps are inherited from `topic/ol`, they will also not be split over two separate pages. However, if you want to allow this, add the following CSS rule:

```
*[class ~= "task/steps"] {
    page-break-inside:auto;
}
```

Note: Another way to do this is to mark the element with an `@outputclass` set to `page-break-avoid`.

How to Force a Page Break Before or After a Topic or Another Element

If you want to force a page break, mark the topic (or any other element you need to control page breaking for) with an `@outputclass` set to one of these values:

page-break-before

Use this for a page break before the marked element.

page-break-after

Use this for a page break after the marked element.

page-break-avoid

Use this to avoid page breaks inside the marked element.

To force a page break before a certain topic, you should write:

```
<topic outputclass="page-break-before" ... >
```

You can also control page breaking for lists, paragraphs, or any other block type elements. The following example avoids page breaks inside an ordered list:

```
<ol outputclass="page-break-avoid" ... >
```

How to Enforce a Number of Lines from Paragraphs that Continue in Next Page

In typography, an *orphan* is the first line of a paragraph that appears alone at the bottom of a page (the paragraph continues on a following page), while a *widow* is the last line of a paragraph that appears alone at the top of a page. The default is 2 for each of them. You can control this number by adding the following to your customization css:

```
:root {
    widows:4;
    orphans:4;
}
```

Hyphenation

Hyphenation specifies how words should be hyphenated when text wraps across multiple lines.

How to Enable Hyphenation for Entire Map

To enable hyphenation for your entire map:

1. Make sure you set an `@xml:lang` attribute on the root of your map.
2. In your customization css, add:

```
:root {
    hyphens: auto;
}
```

3. To except certain elements from being hyphenated, use `hyphens:none`. The following example excludes the `<keyword>` elements from being hyphenated:

```
*[class ~= "topic/keyword"] {
    hyphens: none;
}
```

How to Enable/Disable Hyphenation for Tables

To enable hyphenation for your entire map:

1. Make sure you set an `@xml:lang` attribute on the root of your map or your table elements.
2. In your customization css, add:

```
*[class ~= "topic/table"] {
    hyphens: auto;
}
```

3. To except certain elements from being hyphenated, use `hyphens:none`. The following example excludes the `<keyword>` elements from being hyphenated:

```
*[class ~= "topic/keyword"] {
    hyphens: none;
}
```

Accessibility

By default, the PDF documents produced using this plugin are partially accessible in the sense that most of the paragraphs, tables, lists, headers, and footers are tagged automatically so a PDF reader can use this information to present the content.

Related Information:

Oxygen PDF Chemistry: Accessibility

Accessibility - Built-in CSS

Accessibility properties are defined in `[PLUGIN_DIR]css/print/p-accessibility.css`.

How to Create Fully Accessible Documents

To make your documents fully accessible (**PDF/UA1**), do the following:

1. In your customization css, specify fonts for all elements and for all page margin boxes. There should be no text that falls back to the basic provided fonts (Times, Courier, etc.). For instance, you can use:

```
:root { font-family: Arial }
@page {
    @top-left {font-family: Arial }
    ...
}
```

2. Specify an `@alt` attribute with a description on any image.
3. Change the Chemistry invocation from the `build.xml` file, adding the argument `-pdf-ua`. There are two targets to change: `chemistry` and `chemistry.embedded`.

Localization

The **DITA-OT CSS Publishing to PDF plugin** comes with localized CSS strings for English and German. In the future, support for more languages will be added.

Localization - Built-in CSS

The built-in localization strings for editing and printing media are defined in:

- `[PLUGIN_DIR]css/core/-i18n.css`
- `[PLUGIN_DIR]css/core/-i18n-en.css`
- `[PLUGIN_DIR]css/core/-i18n-de.css`
- `[PLUGIN_DIR]css/core/-i18n-fr.css`

There are several strings that are used only in the printed media, such as the table of contents title or the index page title. They can be found in the following CSS files:

- `[PLUGIN_DIR]css/print/p-i18n.css`
- `[PLUGIN_DIR]css/print/p-i18n-en.css`
- `[PLUGIN_DIR]css/print/p-i18n-de.css`
- `[PLUGIN_DIR]css/print/p-i18n-fr.css`

Note: The actual number of localization files may vary.

How to Enable German Localization

Suppose you need to produce your publication for a German audience. In this case, you would want the text from the headers and footers to be translated to German.

To achieve that, set the `@xml:lang` attribute on the root of your DITA map to `de_de`.

Warning: The `default.language` transformation parameter is not taken into account.

How to Create a Localization CSS for Another Language

Suppose you want to localize your publishing for the Dutch language (language code `nl`). To do this, use the following procedure:

1. Copy and paste the contents of the following files in your customization css:
   - `[PLUGIN_DIR]/css/core/-i18n-de.css`
   - `[PLUGIN_DIR]/css/print/p-i18n-de.css`
2. Search for and replace `:lang(de)` with `:lang(nl)`.
3. In an editor, open the English localization files, side by side with your customization CSS:
   - `[PLUGIN_DIR]/css/core/-i18n-en.css`
   - `[PLUGIN_DIR]css/print/p-i18n-en.css`
4. Translate each of the strings from your customization, using the English localization as reference.

This is a very simple example of localizing just the table of contents, index page title, and the figure and table captions:

```
/* Title in the TOC page */
toc-title[empty]:lang(nl):before {
    content: "Inhoud";
}

/* This string is used in the TOC page header. */
:root:lang(nl) {
    string-set: toc-header "Inhoud";
}

/* Title in the Index page */
index\.groups:lang(nl):before {
    content: "Index";
}

@media print {
    *[class ~= "topic/table"] > *[class ~= "topic/title"]:lang(de):before {
        content: "Tafel " counter(tablecount) ": ";
    }
}
@media print {
    *[class ~= "topic/fig"] > *[class ~= "topic/title"]:lang(de):before {
        content: "Figuur " counter(figcount) ": ";
    }
}
...
```

Styling the Content

If you need to change the styles of the elements from the topic contents, you should create a customization CSS and then add CSS rules. To create the CSS rules, you can use the development tools described in Debugging the CSS on page 900.

Links

Links allow the users to navigate through the documentation.

How to Remove 'on page NNN' Link Label

For paper printed materials, it is desirable that the links display a label (similar to "on page 54") after their text content. This gives the user the possibility to identify the target page. However, if the produced PDF is not printed on paper and is intended only for electronic use, this label may create clutter and makes the document harder to read. To eliminate this label, add the following in your customization css:

```
*[class ~= "topic/xref"][href]:after,
*[class ~= "topic/link"][href]:after {
    content: none;
}
```

How to Change Link Styles

Suppose you want the links to be bold and with an underline. In your customization css, add this snippet:

```
*[class ~= "topic/xref"][href]:after,
*[class ~= "topic/link"][href]:after {
    font-weight: bold;
    text-decoration: underline;
}
```

Images

Images are an important part of a publication.

Note: You can use raster image formats (such as PNG or JPEG), but it is best to use vector images (such as SVG or PDF). They can be scaled and produce better results when printed.

Images - Built-in CSS

Image properties are defined in `[PLUGIN_DIR]css/print/p-images.css`.

```
*[class ~= "topic/image"] {
      prince-image-resolution: 120dpi;
      -ah-image-resolution: 120dpi;
      image-resolution: 120dpi;
      /* The US-letter page size minus page margins. See p-page-size.css for the current page size. */
      max-width: 6.5in;
  }
```

How to Fix Image Bleeding - Control Image Size

Sometimes the images may be too big for the page. The built-in CSS rules specify a maximum size for images, limiting to the width of the parent block. But if the parent block is itself too wide and bleeds out of page, you might consider specifying a length.

In your customization css, add the following snippet:

```
*[class ~= "topic/image"] {
  ...
      /* The US-letter page size minus page margins. See p-page-size.css for the current page size. */
      max-width: 6.5in;
  }
```

How to Change Image Resolution

This is a good technique to change the size of all **raster** images from your documentation. This will not work for vector images, such as PDF or SVG. If the images (PNG, for example) contain the image resolution in their metadata, this will be taken into account. For all other images, the default resolution is 120dpi.

If the default resolution is not good (suppose you need a higher pixel density of 300dpi), you can change it by adding the following in your customization css:

```
*[class ~= "topic/image"] {
        prince-image-resolution: 300dpi;
        -ah-image-resolution: 300dpi;
        image-resolution: 300dpi;
}
```

How to Place Big Images on Rotated Pages

Very wide images may bleed out of the page. One solution for this is to use landscape pages for these wide images.

In your customization css, add:

```
*[class~="topic/image"][outputclass='land'] {
    page: landscape-page;
}
```

Setting the attribute `@outputclass` = 'land' on the table element will force the table on a new landscape page.

Another solution is to set an `@outputclass` attribute on the image, then create a rule that matches it, and associate a landscape page for it.

How to Place a Text and Image Side by Side

If you need to align text and an image side by side, you can use the following technique:

1. Organize your text and image under a `<div>` element like this:

```
...
 <div outputclass="side-by-side">
      <p> This will be in the left side, the next figure in the right. </p>
      <fig>
        <image href="cactus.jpeg"/>
      </fig>
 </div>
...
```

   Note: You can use the `@outputclass` attribute to mark the `<div>` elements that have this special layout.
2. In your customization css, add:

```
*[outputclass ~= "side-by-side"] > *[class ~= "topic/p"] {
  display:inline-block;
  width: 45%;
}

*[outputclass ~= "side-by-side"] > *[class ~= "topic/fig"] {
  display:inline-block;
  width: 45%;
}
```

   The image should fill the entire width of the parent `<fig>` element:

```
*[outputclass ~= "side-by-side"] > *[class ~= "topic/fig"]  > *[class ~= "topic/image"] {
  width:100%;
}
```

   By default, the bottom of the image is on the same line as the text baseline. If you want the text and the image to be aligned at the top, add these lines:

```
*[outputclass ~= "side-by-side"] > *[class ~= "topic/p"] {
  vertical-align:top;
}

*[outputclass ~= "side-by-side"] > *[class ~= "topic/fig"] {
  vertical-align:top;
  font-size:0pt;
}
```

   Note: The `font-size:0pt` is needed to remove the font ascent and descent around the image rectangle.

Tables

Tables are widely used in technical documentation. This section contains information about the CSS rules that are used to style them and how to fix some problems.

Tables - Built-in CSS

There is a combination of CSS files that address tables: `[PLUGIN_DIR]/css/core/-table-html-cals.css`, `[PLUGIN_DIR]/css/core/-table-cals.css`.

How to Deal With Wide Tables - Page Rotation

Some of the tables can have a large number of columns. In this case, the table may bleed out of the page. One solution is to use landscape pages for these tables.

Setting the attribute `@orient` = 'land' on the table element will force the table on a new landscape page.

Another solution is to use automatic detection of wide tables (5 or more columns):

```
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='5'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='6'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='7'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='8'] {
    page: landscape-page;
    max-width: 100%;
    page-break-before: avoid;
}
```

Note: The `landscape-page` page layout is defined in the `[PLUGIN_DIR]css/print/p-pages-and-headers.css`.

If you want to rotate the entire topic that contains the big table, use:

```
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='5'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='6'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='7'],
*[class~="topic/table"] > *[class~="topic/tgroup"][cols='8'] {
    max-width: 100%;
    table-layout:auto;
}

*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"]
[cols='5']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"]
[cols='6']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"]
[cols='7']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"]
[cols='8']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *[class~="topic/table"] >
 *[class~="topic/tgroup"][cols='5']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *[class~="topic/table"] >
 *[class~="topic/tgroup"][cols='6']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *[class~="topic/table"] >
 *[class~="topic/tgroup"][cols='7']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *[class~="topic/table"] >
 *[class~="topic/tgroup"][cols='8']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *:not([class~="topic/
topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"][cols='5']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *:not([class~="topic/
topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"][cols='6']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *:not([class~="topic/
topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"][cols='7']),
*[class~="topic/topic"]:has(*:not([class~="topic/topic"]) > *:not([class~="topic/topic"]) > *:not([class~="topic/
topic"]) > *[class~="topic/table"] > *[class~="topic/tgroup"][cols='8']){
      page: landscape-page;
}
```

How to Fix Text Bleeding From Table Cells

Slim tables or tables that have many columns make the text from the cells to be confined to a small horizontal space. Long words would bleed outside the cell boundaries. To fix this, you should enable hyphenation in your tables, thus making the words spread on multiple lines. In your customization CSS, add:

```
*[class~="topic/table"] {
    hyphens: auto;
}
```

Related Information:

Hyphenation on page 928

How to Enable the Automatic Table Layout

The DITA specification indicates that tables should have a fixed layout. However, you can get a more optimal arrangement of the cells using the automatic layout. In your customization CSS, add:

```
*[class~="topic/tgroup"] {
    table-layout:auto !important;
}
```

If you want to control which table you want this layout, you can set the `@outputclass` attribute on the `<table>` element:

```
<table outputclass='auto_tbl'> ... </table>
```

Then, in the CSS, use a rule that matches the `@outputclass`:

```
*[class~="topic/table"][outputclass='auto_tbl'] > *[class~="topic/tgroup"] {
    table-layout:auto !important;
}
```

Important: Make sure the tables have no column width specified.

DITA Map to MS Office Word Transformation

Oxygen XML Editor plugin comes bundled with a transformation scenario that allows you to convert *DITA maps* to Microsoft Office Word documents. It utilizes the **DITA to Word plugin** created by Jarno Elovirta. This *plugin* contains a Word document named **Normal.docx** (located in: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/DITA-OT2.x/plugins/com.elovirta.ooxml/resources`) that is used by the transformation scenario as a template to generate the final Word document.

Tip: You can make general modifications to the **Normal.docx** template file to alter the published output.

Configuring the Transformation Scenario

To configure an **DITA Map to MS Office Word** transformation scenario, follow these steps:

1. Open the DITA map in the **DITA Maps Manager**.
2. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
3. Select **DITA Map MS Office Word**.
4. For advanced customizations, in the **Parameters** tab you can use any of the following parameters that are unique to this transformation scenario to specify paths to files that affect the output in various ways:
   - `dotx.file` - Specifies the path to a Word template file (`.docx`) that will be used in the transformation to generate the final Word document. Set this parameter if you want to use a different template file other than the **Normal.docx** file that is used by default.
   - `document.flat.xsl` - Specifies the path to a pre-process clean-up stylesheet.
   - `core.xsl` - Specifies the path to a core metadata stylesheet.
   - `custom.xsl` - Specifies the path to a custom metadata stylesheet.
   - `document.xsl` - Specifies the path to a main document stylesheet.
   - `comments.xsl` - Specifies the path to a comments stylesheet.
   - `numbering.xsl` - Specifies the path to a list and title numbering stylesheet.
   - `footnotes.xsl` - Specifies the path to a footnote stylesheet.
   - `document.xml.xsl` - Specifies the path to a document relations metadata stylesheet.
   - `inkscape.exec` - Specifies the path to an Inkscape (open-source vector graphics editor) executable file.
5. Click **OK** and run the transformation scenario.

Result: The result of the transformation will automatically be opened in your system's default word processing application (such as Microsoft Word).

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Migrating MS Office Documents to DITA on page 1616

DITA Map to CHM (Compiled HTML Help) Transformation

To perform a *Compiled HTML Help (CHM)* transformation, Oxygen XML Editor plugin needs `Microsoft HTML Help Workshop` to be installed on your computer. Oxygen XML Editor plugin automatically detects `HTML Help Workshop` and uses it.

Note: `HTML Help Workshop` might fail if the files used for transformation contain accents in their names, due to different encodings used when writing the *.hhp* and *.hhc* files. If the transformation fails to produce the CHM output but the *.hhp* (HTML Help Project) file is already generated, you can manually try to build the CHM output using `HTML Help Workshop`.

Changing the Output Encoding

Oxygen XML Editor plugin uses the `htmlhelp.locale` parameter to correctly display specific characters of different languages in the output of the *Compiled HTML Help (CHM)* transformation. By default, the **DITA Map CHM** transformation scenario that comes bundled with Oxygen XML Editor plugin has the `htmlhelp.locale` parameter set to `en-US`.

To customize this parameter, follow this procedure:

1. Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.
2. Select the **DITA Map CHM** transformation scenario and click the **Edit** button.
3. In the **Parameter** tab, search for the `htmlhelp.locale` parameter and change its value to the desired language tag.

   Note: The format of the `htmlhelp.locale` parameter is `LL-CC`, where `LL` represents the language code (en, for example) and `CC` represents the country code (US, for example). The language codes are contained in the `ISO 639-1` standard and the country codes are contained in the `ISO 3166-1` standard. For further details about language tags, go to http://www.rfc-editor.org/rfc/rfc5646.txt.

DITA Map to Kindle Transformation

Oxygen XML Editor plugin requires *KindleGen* to generate Kindle output from *DITA maps*. To install *KindleGen* for use by Oxygen XML Editor plugin, follow these steps:

1. Go to www.amazon.com/kindleformat/kindlegen and download the zip file that matches your operating system.
2. Unzip the file on your local disk.
3. Start Oxygen XML Editor plugin and open a *DITA map* in the **DITA Maps Manager** view.
4. Click the **Configure Transformation Scenario(s)** button.
5. Select the **DITA Map Kindle** transformation and press the **Edit** button to edit it.
6. Go to **Parameters** tab and set the **kindlegen.executable** parameter as the path to the *KindleGen* directory.
7. Accept the changes.

Run DITA OT Integrator Transformation

Oxygen XML Editor plugin comes bundled with a transformation scenario designed to integrate DITA-OT plugins. These DITA-OT *plugins* are used for various customizations. It is called **Run DITA-OT Integrator** and is found in the **DITA Map** section of the **Configure Transformation Scenario(s)** dialog box.

Attention: The integration will be performed on the DITA-OT version specified in the **DITA Open Toolkit** section of the **DITA** preferences page.

Running the Transformation Scenario

To integrate a DITA OT *plugin*, follow these steps:

1. If Oxygen XML Editor plugin was installed in the default location, you may need to restart and run it as an administrator.

2. Select the **Apply Transformation Scenario(s)** or **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar (you could also use the same action on the main toolbar or open the **Transformation Scenarios** view).
3. Select the **Run DITA-OT Integrator** transformation scenario. If the *integrator* is not visible, select the **Show all scenarios** action that is available in the **Settings** drop-down menu.
4. Apply the scenario.
5. Check the **Results** panel at the bottom of the application to make sure the build was successful.
6. Restart Oxygen XML Editor plugin with your normal permissions.

Related Information:

Configure Transformation Scenario(s) Dialog Box on page 982
Installing a DITA-OT Plugin on page 1608
Integrating a DITA Specialization on page 1612
Localizing the Interface of DITA Map to WebHelp Classic Output

Creating New Transformation Scenarios

Defining a transformation scenario is the first step in the process of transforming a document. This section includes information on the types of new scenarios that are available in Oxygen XML Editor plugin and how to create each type of transformation.

XML Transformation with XSLT
This type of transformation specifies the transformation parameters and location of an XSLT stylesheet that is applied to the edited XML document. This scenario is useful when you develop an XML document and the XSLT document is in its final form.

To create an **XML transformation with XSLT** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s)** (**Alt + Shift + T, C (Command + Alt + T, C on OS X)**) action from the toolbar or the **XML** menu. Then click the **New** button and select **XML transformation with XSLT**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **XML transformation with XSLT**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

XSLT Tab

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **XSLT** tab contains the following options:

XML URL

Specifies the source XML file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, then the file is used directly from its remote location.

Note: If the transformer engine is Saxon 9.x and a custom URI resolver is configured in the advanced Saxon preferences page, the XML input of the transformation is passed to that URI resolver. If the transformer engine is one of the built-in XSLT 2.0 / 3.0 engines and the name of an initial template is specified in the scenario, the **XML URL** field can be empty. The **XML URL** field can also be empty if you use external XSLT processors. Otherwise, a value is mandatory in this field.

XSL URL

Specifies the source XSL file that the transformation will use. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, the file is used directly from its remote location.

Use "xml-stylesheet" declaration

If selected, the scenario applies the stylesheet specified explicitly in the XML document with the `xml-stylesheet` processing instruction. By default, this option is deselected and the transformation applies the XSLT stylesheet that is specified in the **XSL URL** field.

Transformer

This drop-down menu presents all the transformation engines available to Oxygen XML Editor plugin for performing a transformation. These include the built-in engines and the external engines defined in the Custom Engines preferences page. The engine you choose is used as the default transformation engine. Also, if an XSLT or XQuery document does not have an associated validation scenario, this transformation engine is used in the validation process (if it provides validation support).

Advanced options

Allows you to configure the advanced options of the Saxon HE/PE/EE engine for the current transformation scenario. To configure the same options globally, go to the Saxon-HE/PE/EE preferences page. For the current transformation scenario, these **Advanced options** override the options configured in that preferences page.

Parameters

Opens a **Configure parameters** dialog box that allows you to configure the XSLT parameters used in the current transformation. In this dialog box, you can also configure the parameters for additional XSLT stylesheets. If the XSLT transformation engine is custom-defined, you can not use this dialog box to configure the parameters sent to the custom engine. Instead, you can copy all parameters from the dialog box using contextual menu actions and edit the custom XSLT engine to include the necessary parameters in the command line that starts the transformation process.

Extensions

Opens a dialog box for configuring the XSLT extension *JARS* or classes that define extension Java functions or extension XSLT elements used in the transformation.

Additional XSLT stylesheets

Opens a dialog box for adding XSLT stylesheets that are applied on the main stylesheet specified in the **XSL URL** field. This is useful when a chain of XSLT stylesheets must be applied to the input XML document.

XSLT Parameters

The global parameters of the XSLT stylesheet used in a transformation scenario can be configured by using the **Parameters** button in the **XSLT** tab of a new or edited transformation scenario dialog box.

The resulting dialog box includes a table that displays all the parameters of the current XSLT stylesheet, all imported and included stylesheets, and all additional stylesheets, along with their descriptions and current values. You can also add, edit, and remove parameters, and you can use the **Filter** text box to search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

If the **XPath** column is selected, the parameter value is evaluated as an XPath expression before starting the XSLT transformation.

Example:

For example, you can use expressions such as:

```
doc('test.xml')//entry
//person[@atr='val']
```

Note:

1. The **doc** function solves the argument relative to the XSL stylesheet location. You can use full paths or editor variables (such as **${cfdu}** [current file directory]) to specify other locations: `doc('${cfdu}/test.xml')//*`

2. You cannot use XSLT Functions. Only XPath functions are allowed.

Below the table, the following actions are available for managing the parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Edit

Opens the **Edit Parameter** dialog box that allows you to edit the selected parameter. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

The bottom panel presents the following:

- The default value of the parameter selected in the table.
- A description of the parameter, if available.
- The system ID of the stylesheet that declares it.

Related Information:

Editor Variables on page 125

XSLT Extensions

The **Extensions** button opens a dialog box that allows you to specify the *JARS* and classes that contain extension functions called from the XSLT file of the current transformation scenario. You can use the **Add**, **Edit**, and **Remove** buttons to configure the extensions.

Tip: You can specify the path to the resources using wildcards (for example, `${oxygenHome}/lib/*.jar`).

An extension function called from the XSLT file of the current transformation scenario will be searched, in the specified extensions, in the order displayed in this dialog box. To change the order of the items, select the item to be moved and press the **Move up** or **Move down** buttons.

Additional XSLT Stylesheets

Use the **Additional XSLT Stylesheets** button in the **XSLT** tab to display a list of additional XSLT stylesheets to be used in the transformation and you can add files to the list or edit existing entries. The following actions are available:

Add

Adds a stylesheet in the **Additional XSLT stylesheets** list using a file browser dialog box. You can type an editor variable in the file name field of the browser dialog box. The name of the stylesheet will be added in the list after the current selection.

Remove

Deletes the selected stylesheet from the **Additional XSLT stylesheets** list.

Up

Moves the selected stylesheet up in the list.

Down

Moves the selected stylesheet down in the list.

Advanced Saxon HE/PE/EE XSLT Transformation Options

The XSLT transformation scenario allows you to configure advanced options that are specific for the Saxon HE (Home Edition), PE (Professional Edition), and EE (Enterprise Edition) engines. They are the same options as those in the **Saxon HE/PE/EE** preferences page but they are configured as a specific set of transformation

options for each transformation scenario, while the values set in the preferences page apply as global options. The advanced options configured in a transformation scenario override the global options defined in the preferences page.

Saxon-HE/PE/EE Options

The advanced options for Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE) are as follows:

Mode ("-im")

A Saxon-specific option that sets the initial mode for the transformation.

Template ("-it")

A Saxon-specific option that sets the name of the initial XSLT template to be executed.

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is executed for XSLT transformation and validation processes.

Debugger trace into XPath expressions (applies to debugging sessions)

Instructs the XSLT Debugger to *step into* XPath expressions.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Line numbering ("-l")

Line numbers where errors occur are included in the output messages.

Expand attributes defaults ("-expand")

Specifies whether or not the attributes defined in the associated DTD or XML Schema are expanded in the output of the transformation you are executing.

DTD validation of the source ("-dtd")

Specifies whether or not the source document will be validated against their associated DTD. You can choose from the following:

- **On** - Requests DTD validation of the source file and of any files read using the `document()` function.
- **Off** - (default setting) Suppresses DTD validation.
- **Recover** - Performs DTD validation but treats the errors as non-fatal.

  Note: Any external DTD is likely to be read even if not used for validation, since DTDs can contain definitions of entities.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following advanced options are specific for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Register Saxon-JS extension functions and instructions

Registers the Saxon-CE extension functions and instructions when compiling a stylesheet using the Saxon 9.8.0.8 processors.

Note: Saxon-CE, being JavaScript-based, was designed to run inside a web browser. This means that you will use Oxygen XML Editor plugin only for developing the Saxon-CE stylesheet, leaving the execution part to a web browser. See more details about executing such a stylesheet on Saxonica's website.

Allow calls on extension functions ("-ext")

If selected, the stylesheet is allowed to call external Java functions. This does not affect calls on integrated extension functions, including Saxon and EXSLT extension functions. This option is useful when loading an untrusted stylesheet (such as from a remote site using `http://[URL]`). It ensures that the stylesheet cannot call arbitrary Java methods and thus gain privileged access to resources on your machine.

Enable assertions ("-ea")

In XSLT 3.0, you can use the **xsl:assert** element to make assertions in the form of XPath expressions, causing a dynamic error if the assertion turns out to be false. If this option is selected, XSLT 3.0 `xsl:assert` instructions are enabled. If it is not selected (default), the assertions are ignored.

Saxon-EE Options

The advanced options that are specific for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

XML Schema version

Use this option to change the default XML Schema version for this transformation. To change the default XML Schema version globally, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema** and use the **Default XML Schema version** option.

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.
- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable streaming mode

Selecting this option will allow an XSLT to run in streaming mode. It is not selected by default.

Other Options

Initializer class

Equivalent to the `-init` Saxon command-line argument. The value is the name of a user-supplied class that implements the *net.sf.saxon.lib.Initializer* interface. This initializer is called during the initialization process, and may be used to set any options required on the configuration programmatically. It is particularly useful for tasks such as registering extension functions, collations, or external object models, especially in Saxon-

HE where the option cannot be set via a configuration file. Saxon only calls the initializer when running from the command line, but the same code may be invoked to perform initialization when running user application code.

FO Processor Tab (XSLT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab contains the following options:

Perform FO Processing

Specifies whether or not an FO processor is applied (either the built-in Apache FOP engine or an external engine defined in **Preferences**) during the transformation.

Input

Choose between the following options to specify which input file to use:

- **XSLT result as input** - The FO processor is applied to the result of the XSLT transformation that is defined in the **XSLT** tab.
- **XML URL as input** - The FO processor is applied to the input XML file.

Method

The output format of the FO processing. The available options depend on the selected processor type.

Processor

Specifies the FO processor to be used for the transformation. It can be the built-in Apache FOP processor or an external processor.

Output Tab (XSLT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab contains the following options:

Prompt for file

At the end of the transformation, a file browser dialog box is displayed for specifying the path and name of the file that stores the transformation result.

Save As

The path of the file where the result of the transformation is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Show in results view as

You can choose to view the results in one of the following:

- **XML** - If this is selected, Oxygen XML Editor plugin displays the transformation result in an XML viewer panel at the bottom of the application window with syntax highlighting.
- **XHTML** - This option is only available if **Open in Browser/System Application** is not selected. If selected, Oxygen XML Editor plugin displays the transformation result in a built-in XHTML browser panel at the bottom of the application window.

  Important: When transforming very large documents, you should be aware that selecting this option may result in very long processing times. This drawback is due to the built-in Java XHTML browser implementation. To avoid delays for large documents, if you want to see the XHTML result of the transformation, you should use an external browser by selecting the **Open in Browser/System Application** option instead.

  - **Image URLs are relative to** - If **Show in results view as XHTML** is selected, this option specifies the path used to resolve image paths contained in the transformation result. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Oxygen XML Editor plugin Browser View

The Oxygen XML Editor plugin Browser view is automatically displayed in the views pane of the Eclipse window to display HTML output from XSLT transformations. It contains a tab for each file with HTML results displayed in the view.

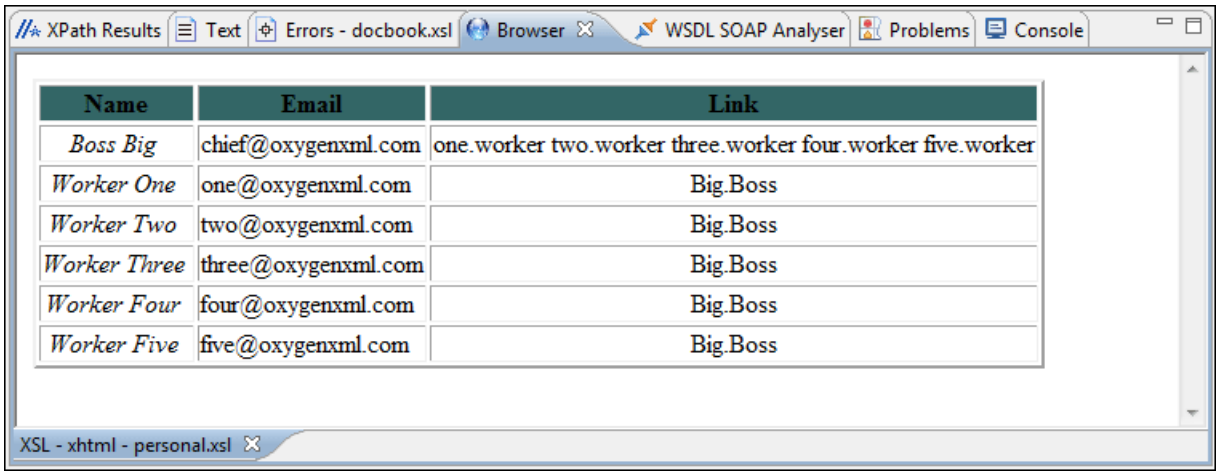


Figure 545: Browser View

Oxygen XML Editor plugin Text View

The Oxygen XML Editor plugin **Text** view is automatically displayed in the views pane of the Eclipse window to display text output from XSLT transformations, FO processor info, warnings, and error messages. It contains a tab for each file with text results displayed in the view.

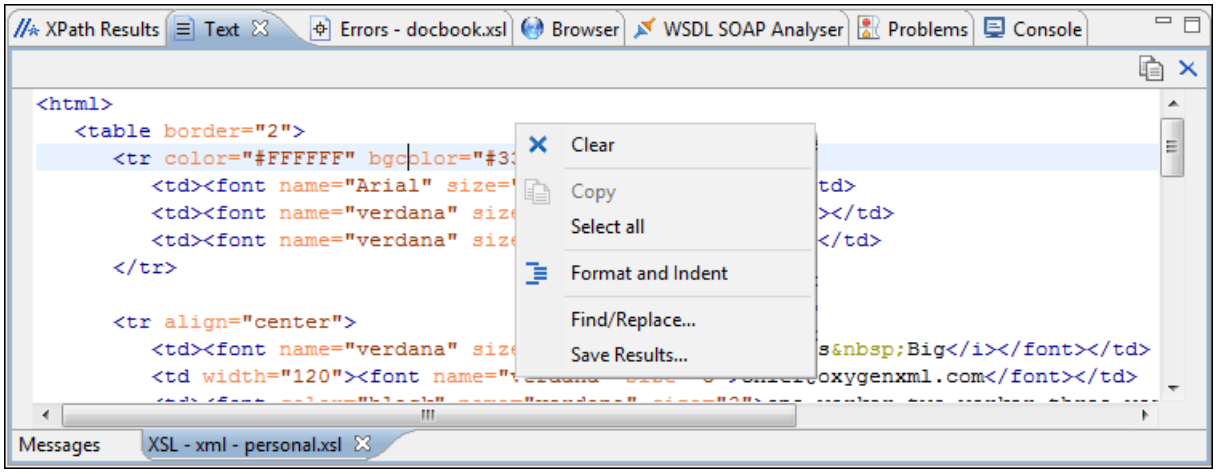


Figure 546: Text View

Text View Contextual Menu Actions

The following actions are available when the contextual menu is invoked in this view:

Clear

Removes all content from the view.

Copy

Copies the selected content to the clipboard.

Select All

Selects all content in the view.

Format and Indent

Formats (*pretty-prints*) the content in this view.

Find/Replace

Allows you to perform search and replace operations.

Save Results

Saves the content in the view to a file in text format.

Generating Output Using an XSLT Processor

This section explains how to configure an XSLT processor and extensions for such a processor in Oxygen XML Editor plugin.

Supported XSLT Processors

Oxygen XML Editor plugin includes the following XSLT processors:

- **Xalan 2.7.2** - Xalan-Java is an XSLT processor for transforming XML documents into HTML, text, or other XML document types. It implements XSL Transformations (XSLT) Version 1.0 and XML Path Language (XPath) Version 1.0.
- **Saxon 6.5.5** - Saxon 6.5.5 is an XSLT processor that implements the Version 1.0 XSLT and XPath with a number of powerful extensions. This version of Saxon also includes many of the new features that were first defined in the XSLT 1.1 working draft, but for conformance and portability reasons these are not available if the stylesheet header specifies `version="1.0"`.
- **Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE)** - Saxon-HE/PE implements the basic conformance level for XSLT 2.0 / 3.0 and XQuery 1.0. The term *basic XSLT 2.0 / 3.0 processor* is defined in the draft XSLT 2.0 / 3.0 specifications. It is a conformance level that requires support for all features of the language other than those that involve schema processing. The HE product remains open source, but removes some of the more advanced features that are present in Saxon-PE.
- **Saxon 9.8.0.8 Enterprise Edition (EE)** - Saxon EE is the schema-aware edition of Saxon and it is one of the built-in processors included in Oxygen XML Editor plugin. Saxon EE includes an XML Schema processor, and schema-aware XSLT, XQuery, and XPath processors.

  The validation in schema aware transformations is done according to the W3C XML Schema 1.0 or 1.1. This can be configured in Preferences.

  Note: Oxygen XML Editor plugin implements a Saxon *framework* that allows you to create Saxon configuration files. Two templates are available: **Saxon collection catalog** and **Saxon configuration**. Both of these templates support content completion, element annotation, and attribute annotation.

  Note: Saxon can use the *ICU-J localization library* (`saxon9-icu.jar`) to add support for sorting and date/number formatting in a wide variety of languages. This library is not included in the Oxygen XML Editor plugin installation kit. However, Saxon will use the default collation and localization support available in the currently used JRE. To enable this capability, follow these steps:

  1. Download Saxon 9.8.0.8 Professional Edition (PE) or Enterprise Edition (EE) from http://www.saxonica.com.
  2. Unpack the downloaded archive.
  3. Create a new XSLT transformation scenario (or edit an existing one). In the **XSLT** tab, click the **Extensions** button to open the list of additional libraries used by the transformation process.

4. Click **Add** and browse to the folder where you unpacked the downloaded archive and choose the `saxon9-icu.jar` file.

Note that the `saxon9-icu.jar` should NOT be added to the application library folder because it will conflict with another version of the ICU-J library that comes bundled with Oxygen XML Editor plugin.

- **Saxon-CE (Client Edition)** is Saxonica's implementation of XSLT 2.0 for use on web browsers. Oxygen XML Editor plugin provides support for editing stylesheets that contain Saxon-CE extension functions and instructions. This support improves the validation, content completion, and syntax highlighting.

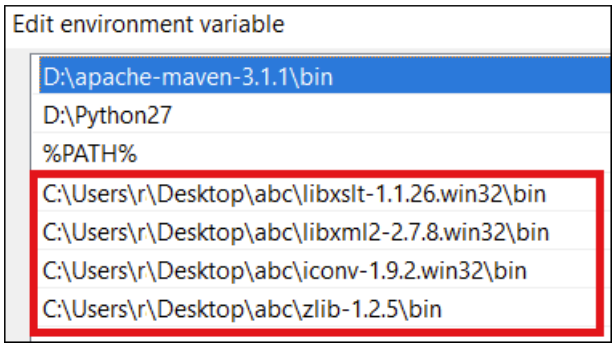
  Note: Saxon-CE, being JavaScript-based, was designed to run inside a web browser. This means that you will use Oxygen XML Editor plugin only for developing the Saxon-CE stylesheet, leaving the execution part to a web browser. See more details about executing such a stylesheet on Saxonica's website.

  Note: A specific template, named **Saxon-CE stylesheet**, is available in the **New from Templates** wizard.
- **Xsltproc (libxslt)** - Libxslt is the XSLT C library developed for the Gnome project. **Libxslt** is based on *libxml2*, the XML C library developed for the Gnome project. It also implements most of the EXSLT set of processor-portable extensions, functions, and some of Saxon's evaluate and expression extensions.

  Oxygen XML Editor plugin uses **Libxslt** through its command line tool (*Xsltproc*). Depending on your operating system, you must download the Libxslt libraries on your machine from http://xmlsoft.org/XSLT/downloads.html and place them in a local folder. Then you need to update the PATH environmental variable to contain the parent folder where the `xsltproc` executable is located.

  Tip: As an example, a Windows installation of the Xsltproc engine would follow these steps:

  1. Go to ftp://ftp.zlatkovic.com/libxml/ and download the following ZIP files: **iconv-1.9.2.win32.zip**, **libxml2-2.7.8.win32.zip**, **libxslt-1.1.26.win32.zip**, **zlib-1.2.5.win32.zip**.
  2. Unzip all of them into the same folder of your choice.
  3. Edit the PATH environment variable and add the `bin` folder for all four archives:

  4. Restart Oxygen XML Editor plugin.

     Result: You can now use the **xsltproc** processor as an XSLT engine in the XSLT transformation scenario.

  Note: The Xsltproc processor can be configured from the **XSLTPROC** options page.

  CAUTION: There is a known problem where file paths that contain spaces are not handled correctly in the LIBXML processor. For example, the built-in *XML Catalog* files of the predefined document types (DocBook, TEI, DITA, etc.) are not handled properly by LIBXML if Oxygen XML Editor plugin is installed in the default location on Windows (C:\Program Files). This is because the built-in *XML catalog* files are stored in the *[OXYGEN_INSTALL_DIR]*`/frameworks` subdirectory of the installation directory, and in this case it contains a space character.
- **MSXML 4.0** - MSXML 4.0 is available only on Windows platforms. It can be used for transformation and validation of XSLT stylesheets.

  Oxygen XML Editor plugin uses the Microsoft XML parser through its command line tool *msxsl.exe*.

  Since `msxsl.exe` is only a wrapper, Microsoft Core XML Services (MSXML) must be installed on the computer. Otherwise, you will get a corresponding warning. You can get the latest Microsoft XML parser from Microsoft web-site.
- **MSXML .NET** - MSXML .NET is available only on Windows platforms. It can be used for transformation and validation of XSLT stylesheets.

Oxygen XML Editor plugin performs XSLT transformations and validations using the .NET *Framework* XSLT implementation (*System.Xml.Xsl.XslTransform* class) through the **nxslt** command line utility. The **nxslt** version included in Oxygen XML Editor plugin is 1.6.

You should have the .NET *Framework* version 1.0 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 1.0 to be installed. Exit code: 128`.

You can get the .NET *Framework* version 1.0 from the Microsoft website.

- **.NET 1.0** - A transformer based on the **System.Xml** 1.0 library available in the .NET 1.0 and .NET 1.1 *frameworks* from Microsoft (http://msdn.microsoft.com/xml/). It is available only on Windows.

  You should have the .NET *Framework* version 1.0 or 1.1 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 1.0 to be installed. Exit code: 128`.

  You can get the .NET *Framework* version 1.0 from the Microsoft website.
- **.NET 2.0** - A transformer based on the **System.Xml** 2.0 library available in the .NET 2.0 *Framework* from Microsoft. It is available only on Windows.

  You should have the .NET *Framework* version 2.0 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 2.0 to be installed. Exit code: 128`.

  You can get the .NET *Framework* version 2.0 from the Microsoft website.

Configuring Custom XSLT Processors

Oxygen XML Editor plugin allows you to configure custom processors to be used for running XSLT and XQuery transformations.

To add a new custom processor, follow these steps:

1. Open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **Custom Engines**.
2. Click the **New** button at the bottom of the dialog box.
3. Configure the parameters for the custom engine.
4. Click **OK**.

Note: You can not use these custom engines in the Debugger *perspective*.

The output messages of a custom processor are displayed in an output view at the bottom of the application window. If an output message follows the format of an Oxygen XML Editor plugin linked message, clicking it highlights the location of the message in an editor panel containing the file referenced in the message.

Related Information:

Custom Engines Preferences on page 109

Configuring the XSLT Processor Extensions Paths

The Xalan and Saxon processors support the use of extension elements and extension functions. Unlike a literal result element, which the stylesheet simply transfers to the result tree, an extension element performs an action. The extension is usually used because the XSLT stylesheet fails in providing adequate functions for accomplishing a more complex task.

For more information about how to use extensions, see the following links:

- **Xalan** - http://xml.apache.org/xalan-j/extensions.html
- **Saxon 6.5.5** - http://saxon.sourceforge.net/saxon6.5.5/extensions.html
- **Saxon 9.8.0.8** - http://www.saxonica.com/documentation9.5/index.html#!extensibility

To set an XSLT processor extension (a directory or a `jar` file), use the **Extensions** button in the **Edit scenario** dialog box.

XML Transformation with XQuery
This type of transformation specifies the transform parameters and location of an XQuery file that is applied to the edited XML document.

Use the **XML transformation with XQuery** scenario to apply a transformation in which an XQuery file queries an XML file for the output results.

To create an **XML transformation with XQuery** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu. Then click the **New** button and select **XML transformation with XQuery**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **XML transformation with XQuery**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

XQuery Tab

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **XQuery** tab contains the following options:

XML URL

Specifies the source XML file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, then the file is used directly from its remote location.

Note: If the transformer engine is Saxon 9.x and a custom URI resolver is configured in the advanced Saxon preferences page, the XML input of the transformation is passed to that URI resolver.

XQuery URL

Specifies the source XQuery file to be used for the transformation. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, the file is used directly from its remote location.

Transformer

This drop-down menu presents all the transformation engines available to Oxygen XML Editor plugin for performing a transformation. These include the built-in engines and the external engines defined in the Custom Engines preferences page. The engine you choose is used as the default transformation engine. Also, if an XSLT or XQuery document does not have an associated validation scenario, this transformation engine is used in the validation process (if it provides validation support).

Advanced options

Allows you to configure the advanced options of the Saxon HE/PE/EE engine for the current transformation scenario. To configure the same options globally, go to the Saxon-HE/PE/EE preferences page. For the current transformation scenario, these **Advanced options** override the options configured in that preferences page.

Parameters

Opens the **Configure parameters** dialog box for configuring the XQuery parameters. You can use the buttons in this dialog box to add, edit, or remove parameters. If the XQuery transformation engine is custom-defined, you can not use this dialog box to set parameters. Instead, you can copy all parameters from the dialog box using contextual menu actions and edit the custom XQuery engine to include the necessary parameters in the command line that starts the transformation process.

Extensions

Opens a dialog box for configuring the XQuery extension *JARS* or classes that define extension Java functions or extension XSLT elements used in the transformation.

XQuery Parameters

The global parameters of the XQuery file used in a transformation scenario can be configured by using the **Parameters** button in the **XQuery** tab.

The resulting dialog box includes a table that displays all the parameters of the current XQuery file, along with their descriptions and current values. You can also add, edit, and remove parameters, and use the **Filter** text box to search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

If the **XPath** column is selected, the parameter value is evaluated as an XPath expression before starting the XQuery transformation.

Example:

For example, you can use expressions such as:

```
doc('test.xml')//entry
//person[@atr='val']
```

Note:

1. The **doc** function solves the argument relative to the XQuery file location. You can use full paths or editor variables (such as **${cfdu}** [current file directory]) to specify other locations: `doc('${cfdu}/test.xml')//*`
2. Only XPath functions are allowed.

Below the table, the following actions are available for managing the parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Edit

Opens the **Edit Parameter** dialog box that allows you to edit the selected parameter. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

The bottom panel presents the following:

- The default value of the parameter selected in the table.
- A description of the parameter, if available.
- The system ID of the stylesheet that declares it.

Related Information:

Editor Variables on page 125

XQuery Extensions

The **Extensions** button is used to specify the *JAR* and classes that contain extension functions called from the XQuery file of the current transformation scenario. You can use the **Add**, **Edit**, and **Remove** buttons to configure the extensions.

An extension function called from the XQuery file of the current transformation scenario will be searched, in the specified extensions, in the order displayed in this dialog box. To change the order of the items, select the item to be moved and press the **Move up** or **Move down** buttons.

Advanced Saxon HE/PE/EE XQuery Transformation Options

The XQuery transformation scenario allows you to configure advanced options that are specific for the Saxon HE (Home Edition), PE (Professional Edition), and EE (Enterprise Edition) engines. They are the same options as those in the **Saxon HE/PE/EE** preferences page but they are configured as a specific set of transformation options for each transformation scenario, while the values set in the preferences page apply as global options. The advanced options configured in a transformation scenario override the global options defined in the preferences page.

Saxon-HE/PE/EE Options

The advanced options for Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE) are as follows:

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is used for XQuery transformation and validation scenarios.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Use linked tree model ("-tree:linked")

This option activates the linked tree model.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following advanced options are specific for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Allow calls on extension functions ("-ext")

If selected, calls on external functions are allowed. Selecting this option is recommended in an environment where untrusted stylesheets may be executed. It also disables user-defined extension elements and the writing of multiple output files, both of which carry similar security risks.

Saxon-EE Options

The advanced options that are specific for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.
- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable XQuery update ("-update:(on|off)")

This option controls whether or not XQuery update syntax is accepted. The default value is off.

Backup files updated by XQuery ("-backup:(on|off)")

If selected, backup versions for any XML files updated with an XQuery Update are generated. This option is available when the **Enable XQuery update** option is selected.

Other Options

Initializer class

Equivalent to the `-init` Saxon command-line argument. The value is the name of a user-supplied class that implements the *net.sf.saxon.lib.Initializer* interface. This initializer is called during the initialization process, and may be used to set any options required on the configuration programmatically. It is particularly useful for tasks such as registering extension functions, collations, or external object models, especially in Saxon-HE where the option cannot be set via a configuration file. Saxon only calls the initializer when running from the command line, but the same code may be invoked to perform initialization when running user application code.

FO Processor Tab (XQuery Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab contains the following options:

Perform FO Processing

Specifies whether or not an FO processor is applied (either the built-in Apache FOP engine or an external engine defined in **Preferences**) during the transformation.

Input

Choose between the following options to specify which input file to use:

- **XQuery result as input** - The FO processor is applied to the result of the XQuery transformation that is defined in the **XQuery** tab.
- **XML URL as input** - The FO processor is applied to the input XML file.

Method

The output format of the FO processing. The available options depend on the selected processor type.

Processor

Specifies the FO processor to be used for the transformation. It can be the built-in Apache FOP processor or an external processor.

Output Tab (XQuery Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab contains the following options:

Present as a sequence

Selecting this option will reduce the time necessary to fetch the full results, as it will only fetch the first chunk of the results.

Prompt for file

At the end of the transformation, a file browser dialog box is displayed for specifying the path and name of the file that stores the transformation result.

Save As

The path of the file where the result of the transformation is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Show in results view as

You can choose to view the results in one of the following:

- **XML** - If this is selected, Oxygen XML Editor plugin displays the transformation result in an XML viewer panel at the bottom of the application window with syntax highlighting.
- **XHTML** - This option is only available if **Open in Browser/System Application** is not selected. If selected, Oxygen XML Editor plugin displays the transformation result in a built-in XHTML browser panel at the bottom of the application window.

  Important: When transforming very large documents, you should be aware that selecting this option may result in very long processing times. This drawback is due to the built-in Java XHTML browser implementation. To avoid delays for large documents, if you want to see the XHTML result of the transformation, you should use an external browser by selecting the **Open in Browser/System Application** option instead.

  - **Image URLs are relative to** - If **Show in results view as XHTML** is selected, this option specifies the path used to resolve image paths contained in the transformation result. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

DITA OT Transformation

This type of transformation specifies the parameters for an Ant transformation that executes a DITA-OT build script. Oxygen XML Editor plugin includes a built-in version of Ant and a built-in version of DITA-OT, but other versions can be set in the scenario.

To create a **DITA OT Transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the **DITA Maps Manager** toolbar, main toolbar, or the **XML** menu. Then click the **New** button and select **DITA OT Transformation**.

- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **DITA OT Transformation**.

Both methods open the **DITA Transformation Type** dialog box that presents the list of possible outputs.

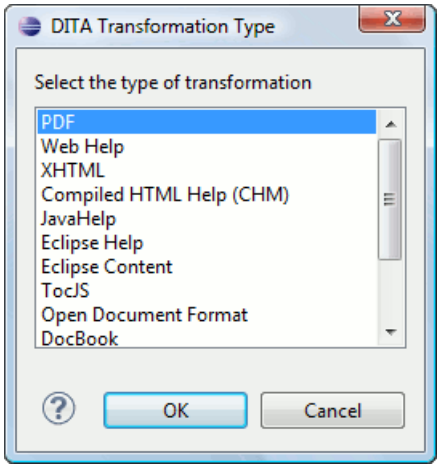


Figure 547: DITA Transformation Type Dialog Box

Select the desired type of output and click **OK**. This opens the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation. Some of these tabs are only available for certain output types (for example, a **Skins** tab is only available for **WebHelp Classic** and **WebHelp Classic with Feedback** output types, a **Templates** tab is available only for **WebHelp Responsive** and **WebHelp Responsive with Feedback**, and a **FO Processor** tab is available for PDF output).

Skins Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Skins** tab is available for DITA OT transformations with **WebHelp Classic** or **WebHelp Classic with Feedback** output types and it provides a set of predefined skins that you can use as a base for your WebHelp system output.

A *skin* is a collection of CSS properties that can alter the look of the output by changing colors, font types, borders, margins, and paddings. This allows you to rapidly adapt the look and feel of your output.

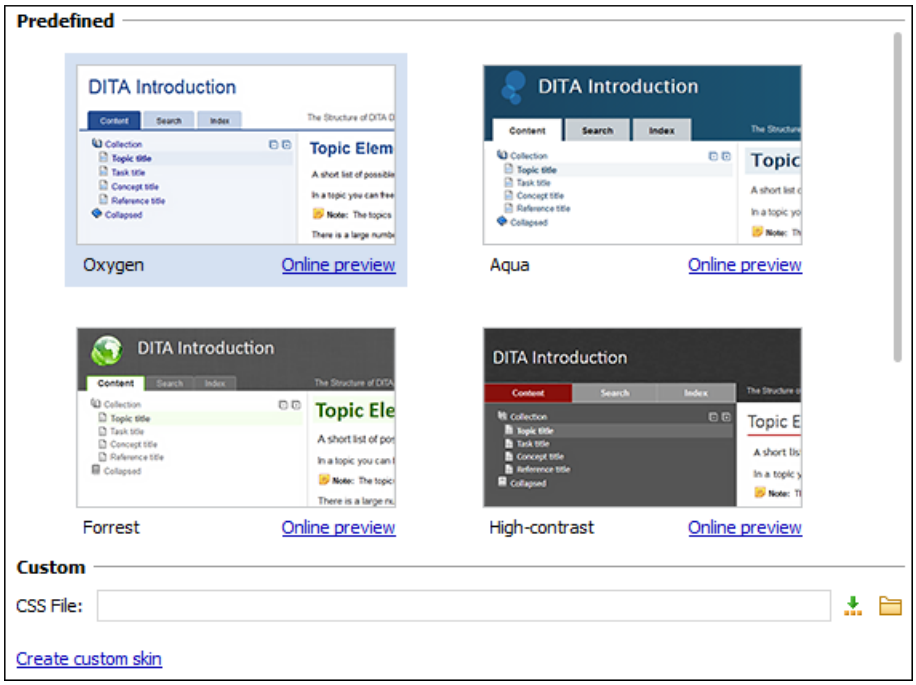


Figure 548: Skins Tab

The **Skins** tab includes the following sections:

Predefined Skins

This sections presents the predefined skins that are included in Oxygen XML Editor plugin. The predefined skins cover a wide range of chromatic themes, ranging from a very light one to a high-contrast variant. To see how the *skin* looks when applied on a sample documentation project that is stored on the Oxygen XML Editor plugin website, press the **Online preview** link.

Custom Skins

You can use this section to customize the look of the output.

CSS File

You can set this field to point to a custom CSS stylesheet or customized skin. A custom CSS file will overwrite a skin selection.

Note: The output can also be styled by setting the `args.css` parameter in the **Parameters tab**. The properties taken from the stylesheet referenced in this parameter take precedence over the properties declared in the skin set in the **Skins tab**.

Create custom skin

Use this link to open the **WebHelp Skin Builder** tool.

Templates Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Templates** tab is available for DITA OT transformations with **WebHelp Responsive** or **WebHelp Responsive with Feedback** output types and it provides a set of predefined publishing templates. You can use one of them to publish your documentation or as a starting point for a new publishing template.

There are two main types of templates, *Tiles* and *Tree* and each of the built-in templates includes of version of each type. You can click on the tags at the top of the pane to filter the templates and narrow your search. You can filter them by either **tiles** or **tree** and then various color schemes. Each built-in template also includes an **Online preview** link that opens a webpage in your default browser that provides a sample of how the main page will look when that particular template is used to generate the output.

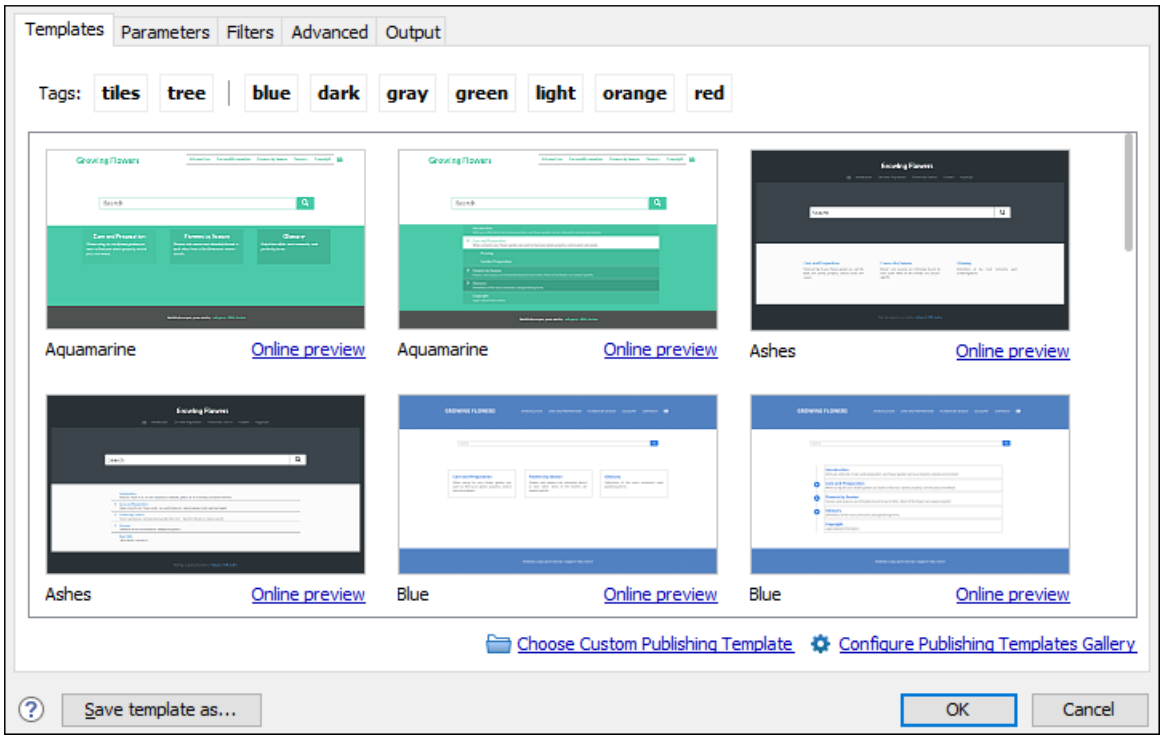


Figure 549: Templates Tab

The two main types of layouts:

Tiles

The main page in the WebHelp output presents a tile for each main topic (chapter) of the documentation. Each tile includes a link to the topic and a short description.

Tree

The main page in the WebHelp output presents a tree-like table of contents with links to the first and second level topics in the publication.

Built-in Templates Location

All built-in templates are stored in the following directory: *`DITA-OT-DIR`*`/plugins/com.oxygenxml.webhelp.responsive/templates`.

Save Template As Button

You can use the **Save template as** button (at the bottom-left of the transformation dialog box) to export the currently selected template into a new template package that can be used as a starting point to create your own custom template. Clicking this button will open a template package configuration dialog box that contains some options and displays the parameters that will be exported to your template package.

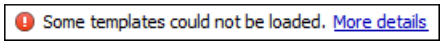
Selecting Custom Templates

Once you are finished configuring your template, you can click the **Choose Custom Publishing Template** link to select your template.

You can also add your custom templates to the list of templates displayed in the **Templates** tab. To do this, store them in a directory, then click the **Configure Publishing Templates Gallery** link and add that directory to the list. All the templates contained in your template directory will be displayed in the preview pane along with all the built-in templates.

Template Errors

When the **Templates** tab is opened, all templates (built-in and custom) are loaded and validated. Specifically, certain elements in the template descriptor file are checked for validity. If errors are encountered that prevents the template from loading, the following message will be displayed toward the bottom of the dialog box:



If you click the **More details** link, a window will open with more information about the encountered error. For example, it might offer a hint for which element is missing from the expected descriptor file structure.

Also, if a template could be loaded, but certain elements could not be found in the descriptor file, a warning icon (⚠) will be displayed on the template's image (in the **Templates** tab of the transformation dialog box). For example, this happens if a valid preview-image element cannot be found.

Sharing Publishing Template

To share a publishing template with others, following these steps:

1. Copy your template in a new folder.
2. Go to **Options** > **Preferences** > **DITA** > **Publishing** and add that new folder to the list.
3. Switch the option as the bottom of that preferences page to **Project Options**.
4. Share your project file (`.xpr`).

Related Information:

Publishing Templates on page 1055
Working with Publishing Templates on page 1083

Template Package Configuration Dialog Box

The **Save template as** button (at the bottom-left of the transformation dialog box for **WebHelp Responsive** transformations) can be used to export the currently selected template into a new template package that can be used as a starting point to create your own custom template. The result will be a ZIP archive that contains a template descriptor file and other resources (such as CSS files) that were attached to the selected template.

Clicking the **Save template as** button opens a template package configuration dialog box contains the following options and components:

Name

Required field used to specify the name for the new template. This will become the text value of the `name` element in the template descriptor file. This information is displayed as the name of the template in the transformation scenario dialog box.

Description

Optional field used to specify a template description. This will become the text value of the `description` element in the template descriptor file. This information is displayed when the user hovers over the template in the transformation scenario dialog box.

Parameter Table

This table displays the parameters that will be exported. Only relevant parameters are exported. The parameters and their values will be inserted in the `parameters` section of the template descriptor file. If any of the parameter values point to a file path that references a template resource (such as CSS files, custom HTML fragments, images), those resources will automatically be copied to the new template package and their references will be changed accordingly.

Note: Additional resources that are referenced in CSS files, HTML fragments, or other resources will not be copied to the new template package, so you will need to copy them manually and update their references in the template descriptor file.

Include HTML Page Layout Files

Select this option if you want to copy the default *HTML Page Layout Files* into your template package. They are helpful if you want to change the structure of the generated HTML pages.

Save as

Use this field to specify the name and path of the ZIP file where the template will be saved.

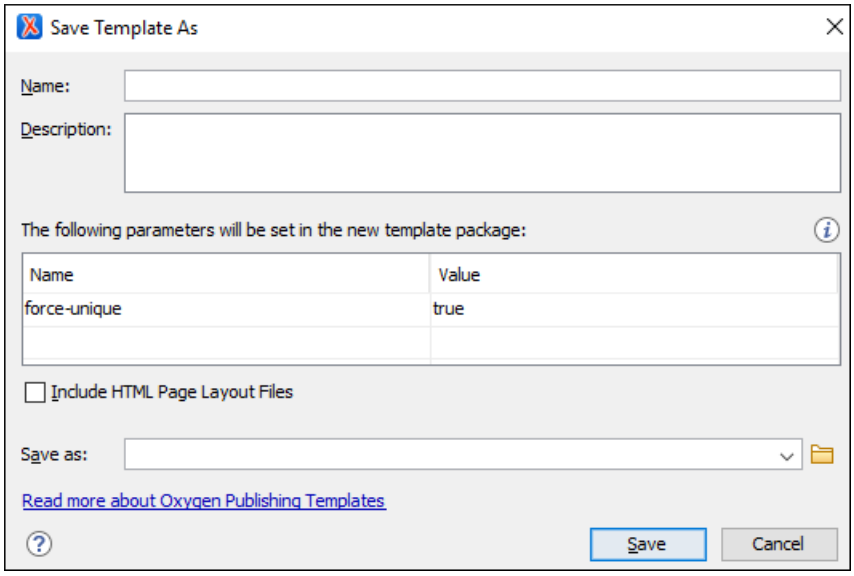


Figure 550: Template Package Configuration Dialog Box

FO Processor Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab is available for DITA OT transformations with a **PDF** output type.

This tab allows you to select an FO Processor to be used for the transformation.

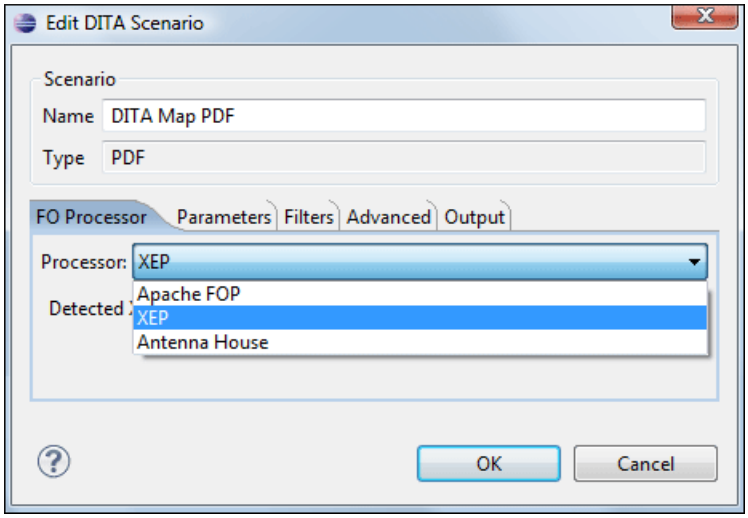


Figure 551: FO Processor Configuration Tab

You can choose one of the following processors:

Apache FOP

The default processor that comes bundled with Oxygen XML Editor plugin.

XEP

The RenderX XEP processor. If XEP is already installed, Oxygen XML Editor plugin displays the detected installation path under the drop-down menu. XEP is considered installed if it was detected in one of the following sources:

- XEP was configured as an external FO Processor in the **FO Processors** option page.

- The system property *com.oxygenxml.xep.location* was set to point to the XEP executable file for the platform (for example: `xep.bat` on Windows).
- XEP was installed in the *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/lib` directory of the Oxygen XML Editor plugin installation directory.

Antenna House

The Antenna House (AH Formatter) processor. If Antenna House is already installed, Oxygen XML Editor plugindisplays the detected installation path under the drop-down menu. Antenna House is considered installed if it was detected in one of the following sources:

- Environment variable set by Antenna House installation (the newest installation version will be used).
- Antenna House was added as an external FO Processor in the Oxygen XML Editor plugin preferences pages.

To further customize the PDF output obtained from the Antenna House processor, follow these steps:

1. **Edit** the transformation scenario.
2. Open the **Parameters** tab.
3. Add the `env.AXF_OPT` parameter and point to the Antenna House configuration file.

Related Information:

FO Processors Preferences on page 111
Generating PDF Output Using an XSL-FO Processor on page 1123

Parameters Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Parameters** tab allows you to configure the parameters sent to the DITA-OT build file.

The table in this tab displays all the parameters that the DITA-OT documentation specifies as available for each chosen type of transformation (for example, XHTML or PDF), along with their description and current values. You can find more information about each parameter in the DITA OT Documentation. You can also add, edit, and remove parameters, and you can use the text box to filter or search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

Depending on the type of a parameter, its value can be one of the following:

- A simple text field for simple parameter values.
- A combo box with some predefined values.
- A file chooser and an editor variable selector to simplify setting a file path as the value of a parameter.

Note: To input parameter values at runtime, use the *ask* editor variable in the **Value** column.

Below the table, the following actions are available for managing parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. You can specify the **Value** of the parameter by using the **Insert Editor Variables** button or the **Browse** button.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Edit

Opens the **Edit Parameter** dialog box that allows you to change the value of the selected parameter or its description.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

WebHelp Responsive Parameters Contributed by an Oxygen Publishing Template

WebHelp Responsive transformation parameters that are defined in an *Oxygen Publishing Template* descriptor file are displayed in italics. After creating a publishing template and adding it to the templates gallery, when you select the template in the **Templates** tab, the **Parameters** tab will automatically be updated to include the parameters defined in the template descriptor file.

Related Information:
DITA Open Toolkit Documentation

Filters Tab (DITA Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Filters** tab allows you to add filters to remove certain content elements from the generated output.

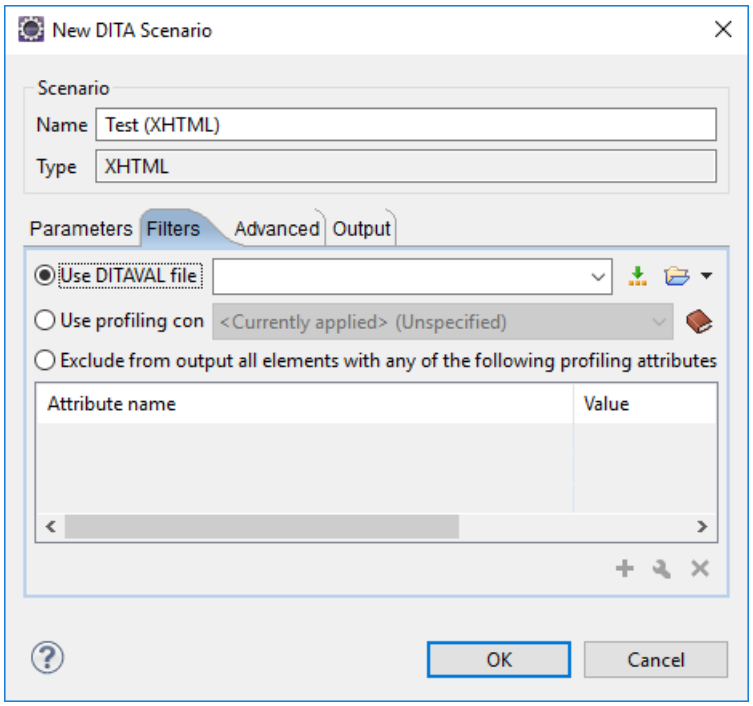


Figure 552: Edit Filters Tab

You can choose one of the following options to define filters:

Use DITAVAL file

If you already have a *DITAVAL* file associated with the *DITA map*, you can specify the file to be used when filtering content. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. You can find out more about constructing a *DITAVAL* file in the DITA Documentation.

Attention: If a filter file is specified in the `args.filter` parameter (in the **Parameters** tab), that file takes precedence over a *DITAVAL* file specified here.

Use profiling condition set

Sets the profiling condition set that will be applied to your transformation.

Exclude from output all elements with any of the following attributes

By using the **New**, **Edit**, or **Delete** buttons at the bottom of the pane, you can configure a list of attributes (name and value) to exclude all elements that contain any of these attributes from the output.

Advanced Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Advanced** tab allows you to specify advanced options for the transformation scenario.

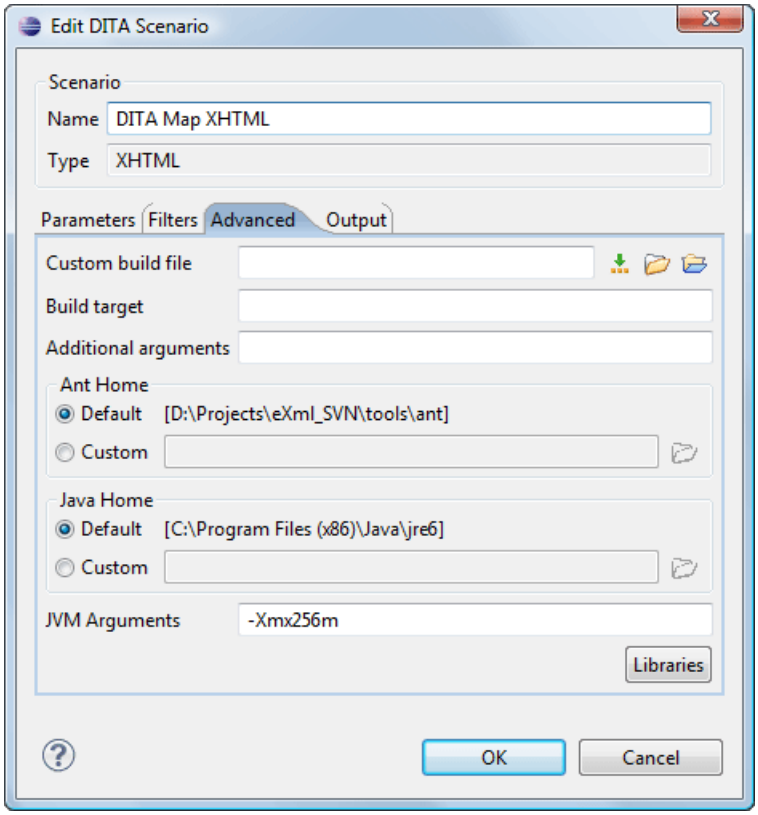


Figure 553: Advanced Settings Tab

You can specify the following parameters:

Custom build file

If you use a custom DITA-OT build file, you can specify the path to the customized build file. If empty, the `build.xml` file from the `dita.dir` parameter that is configured in the **Parameters** tab is used. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Build target

Optionally, you can specify a build target for the build file. If no target is specified, the default `init` target is used.

Additional arguments

You can specify additional command line arguments to be passed to the transformation (such as `-verbose`).

Ant Home

You can choose between the default or custom Ant installation to run the transformation.

Java Home

You can choose between the default or custom Java installation to run the transformation. The default path is the Java installation that is used by Oxygen XML Editor plugin.

Note: It may be possible that the used Java version is incompatible with the DITA Open Toolkit engine. For example, DITA-OT 2.0 and newer requires Java 1.7 or newer. Thus, if you encounter related errors running the transformation, consider installing a Java VM that is supported by the DITA OT publishing engine and using it in the **Java Home** text field.

JVM Arguments

This parameter allows you to set specific parameters for the Java Virtual Machine used by Ant. For example, if it is set to **-Xmx384m**, the transformation process is allowed to use 384 megabytes of memory. When performing a large transformation, you may want to increase the memory allocated to the Java Virtual Machine. This will help avoid *Out of Memory* error messages (**OutOfMemoryError**).

Libraries

By default, Oxygen XML Editor plugin adds libraries (as high priority) that are not transformation-dependent and also patches for certain DITA Open Toolkit bugs. You can use this button to specify additional libraries (*JAR* files or additional class paths) to be used by the Ant transformer.

Tip: You can specify the path to the additional libraries using wildcards (for example, `${oxygenHome}/lib/*.jar`).

Output Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab allows you to configure options that are related to the location where the output is generated.

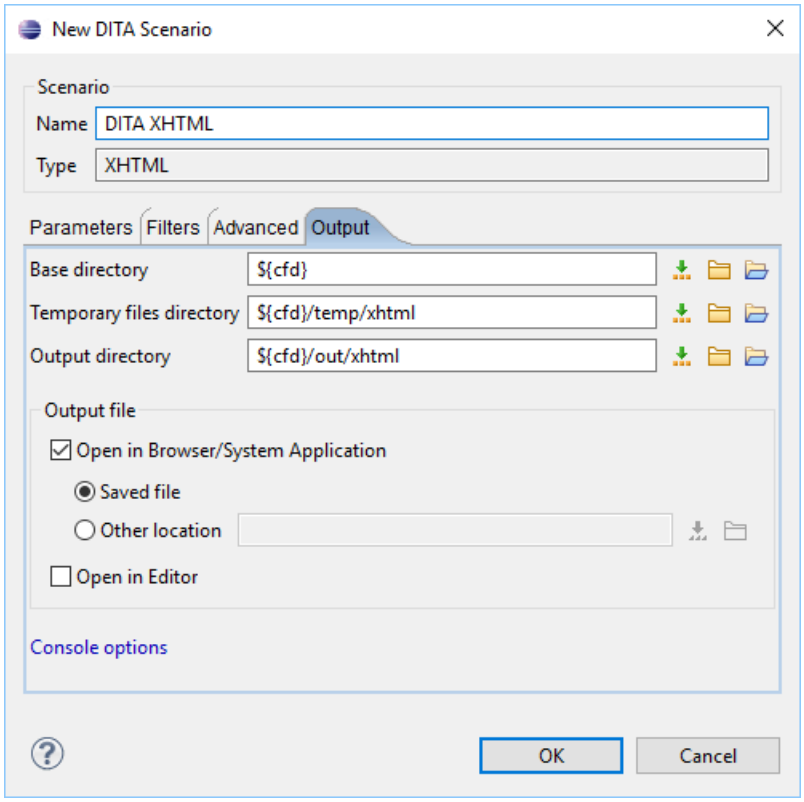


Figure 554: Output Settings Tab

You can specify the following parameters:

Base directory

All the relative paths that appear as values in parameters are considered relative to the base directory. The default value is the directory where the transformed map is located. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Temporary files directory

This directory is used to store pre-processed temporary files until the final output is obtained. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Output directory

The folder where the content of the final output is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Note: If the *DITA map* or topic is opened from a remote location or a ZIP file, the parameters must specify absolute paths.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Troubleshooting DITA Transformation Errors

If a DITA transformation results in errors or warnings, the information is displayed in the message panel at the bottom of the editor. The information includes the severity, description of the problem, the name of the resource, and the path of the resource.

To help prevent and solve DITA transformation problems, follow these steps:

1. Validate the *DITA map* by using the **Validate and Check for Completeness** action that is available on the **DITA Maps Manager** toolbar and in the **DITA Maps** menu.
2. If this action results in validation errors, solve them prior to executing the transformation. Also, you should pay attention to the warning messages because they may identify problems in the transformation.
3. Run the DITA transformation scenario.
4. If the transformation results in errors or warnings, they are displayed in the **Results** panel at the bottom of the editor. The following information is presented to help you troubleshoot the problems:
   - **Severity** - The first column displays the following icons that indicate the severity of the problem:
     - **Informational** - The transformation encountered a condition of which you should be aware.
     - **Warning** - The transformation encountered a problem that should be corrected.
     - **Error** - The transformation encountered a more severe problem, and the output is affected or cannot be generated.
   - **Info** - You can click the **See More** icon to open a web page that contains details about DITA-OT error messages.
   - **Description** - A description of the problem.
   - **Resource** - The name of the transformation resource.
   - **System ID** - The path of the transformation resource.
5. Use this information or other resources from the online DITA-OT community to solve the transformation problems before re-executing the transformation scenario.
6. If you need to contact the *Oxygen* technical support team, they will need you to send the entire transformation scenario execution log. To obtain it:
   a. Go to the **Options** > **Preferences** > **DITA** preferences page and set the **Show console output** option to **Always**.

b. Execute the transformation scenario again. The console output messages are displayed in the **DITA OT** view.
c. Copy the entire log, save it in a text file, then send it to the *Oxygen* technical support team.
d. After your issue has been solved, go back to the **Options** > **Preferences** > **DITA** preferences page and set the **Show console output** option to **When build fails**.

Ant Transformation
This type of transformation allows you to configure the options and parameters of an Ant build script.

An Ant transformation scenario is usually associated with an Ant build script. Oxygen XML Editor plugin runs an Ant transformation scenario as an external process that executes the Ant build script with the built-in Ant distribution (*Apache Ant* version 1.9.8) that is included with the application, or optionally with a custom Ant distribution configured in the scenario.

To create an Ant transformation scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu. Then click the **New** button and select **ANT transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **ANT transformation**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

Options Tab (Ant Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Options** tab allows you to specify the following options:

Working directory
The path of the current directory of the Ant external process. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Build file
The Ant script file that is the input of the Ant external process. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Build target
Optionally, you can specify a build target for the Ant script file. If no target is specified, the Ant target that is specified as the default in the Ant script file is used.

Additional arguments
You can specify additional command line arguments to be passed to the transformation (such as `-verbose`).

Ant Home
You can choose between the default or custom Ant installation to run the transformation.

Java Home
You can choose between the default or custom Java installation to run the transformation. The default path is the Java installation that is used by Oxygen XML Editor plugin.

JVM Arguments
This parameter allows you to set specific parameters for the Java Virtual Machine used by Ant. For example, if it is set to **-Xmx384m**, the transformation process is allowed to use 384 megabytes of memory. When performing a large transformation, you may want to increase the memory allocated to the Java Virtual Machine. This will help avoid *Out of Memory* error messages (**OutOfMemoryError**).

Libraries

By default, Oxygen XML Editor plugin adds libraries (as high priority) that are not transformation-dependent and also patches for certain DITA Open Toolkit bugs. You can use this button to specify additional libraries (*JAR* files or additional class paths) to be used by the Ant transformer.

Tip: You can specify the path to the additional libraries using wildcards (for example, `${oxygenHome}/lib/*.jar`).

Parameters Tab (Ant Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Parameters** tab allows you to configure the parameters that are accessible as Ant properties in the Ant build script.

The table displays all the parameters that are available in the Ant build script, along with their description and current values. You can also add, edit, and remove parameters, and use the **Filter** text box to search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

Depending on the type of a parameter, its value can be one of the following:

- A simple text field for simple parameter values.
- A combo box with some predefined values.
- A file chooser and an editor variable selector to simplify setting a file path as the value of a parameter.

Note: To input parameter values at runtime, use the *ask* editor variable in the **Value** column.

Below the table, the following actions are available for managing parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. You can specify the **Value** of the parameter by using the **Insert Editor Variables** button or the **Browse** button.

Edit

Opens the **Edit Parameter** dialog box that allows you to change the value of the selected parameter or its description.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

Output Tab (Ant Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab contains the following options:

Open

Allows you to specify the file to open automatically when the transformation is finished. This is usually the output file of the Ant process. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

- **In System Application** - The file specified in the **Open** text box is opened in the system application that is set in the operating system as the default application for that type of file (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).
- **In Editor** - The file specified in the **Open** text box is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor).

Show console output

Allows you to specify when to display the console output log in the message panel at the bottom of the editor. The following options are available:

- **When build fails** - Displays the console output log only if the build fails.

- **Always** - Displays the console output log, regardless of whether or not the build fails.

XSLT Transformation
This type of transformation specifies the parameters and location of an XML document that the edited XSLT stylesheet is applied on. This scenario is useful when you develop an XSLT document and the XML document is in its final form.

To create an **XSLT transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu. Then click the **New** button and select **XSLT transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **XSLT transformation**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

XSLT Tab

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **XSLT** tab contains the following options:

XML URL

Specifies the source XML file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, then the file is used directly from its remote location.

Note: If the transformer engine is Saxon 9.x and a custom URI resolver is configured in the advanced Saxon preferences page, the XML input of the transformation is passed to that URI resolver. If the transformer engine is one of the built-in XSLT 2.0 / 3.0 engines and the name of an initial template is specified in the scenario, the **XML URL** field can be empty. The **XML URL** field can also be empty if you use external XSLT processors. Otherwise, a value is mandatory in this field.

XSL URL

Specifies the source XSL file that the transformation will use. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, the file is used directly from its remote location.

Use "xml-stylesheet" declaration

If selected, the scenario applies the stylesheet specified explicitly in the XML document with the `xml-stylesheet` processing instruction. By default, this option is deselected and the transformation applies the XSLT stylesheet that is specified in the **XSL URL** field.

Transformer

This drop-down menu presents all the transformation engines available to Oxygen XML Editor plugin for performing a transformation. These include the built-in engines and the external engines defined in the Custom Engines preferences page. The engine you choose is used as the default transformation engine. Also, if an XSLT or XQuery document does not have an associated validation scenario, this transformation engine is used in the validation process (if it provides validation support).

Advanced options

Allows you to configure the advanced options of the Saxon HE/PE/EE engine for the current transformation scenario. To configure the same options globally, go to the Saxon-HE/PE/EE preferences page. For the current transformation scenario, these **Advanced options** override the options configured in that preferences page.

Parameters

Opens a **Configure parameters** dialog box that allows you to configure the XSLT parameters used in the current transformation. In this dialog box, you can also configure the parameters for additional XSLT stylesheets. If the XSLT transformation engine is custom-defined, you can not use this dialog box to configure the parameters sent to the custom engine. Instead, you can copy all parameters from the dialog box using contextual menu actions and edit the custom XSLT engine to include the necessary parameters in the command line that starts the transformation process.

Extensions

Opens a dialog box for configuring the XSLT extension *JARS* or classes that define extension Java functions or extension XSLT elements used in the transformation.

Additional XSLT stylesheets

Opens a dialog box for adding XSLT stylesheets that are applied on the main stylesheet specified in the **XSL URL** field. This is useful when a chain of XSLT stylesheets must be applied to the input XML document.

XSLT Parameters

The global parameters of the XSLT stylesheet used in a transformation scenario can be configured by using the **Parameters** button in the **XSLT** tab of a new or edited transformation scenario dialog box.

The resulting dialog box includes a table that displays all the parameters of the current XSLT stylesheet, all imported and included stylesheets, and all additional stylesheets, along with their descriptions and current values. You can also add, edit, and remove parameters, and you can use the **Filter** text box to search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

If the **XPath** column is selected, the parameter value is evaluated as an XPath expression before starting the XSLT transformation.

Example:

For example, you can use expressions such as:

```
doc('test.xml')//entry
//person[@atr='val']
```

Note:

1. The **doc** function solves the argument relative to the XSL stylesheet location. You can use full paths or editor variables (such as **${cfdu}** [current file directory]) to specify other locations: `doc('${cfdu}/test.xml')//*`
2. You cannot use XSLT Functions. Only XPath functions are allowed.

Below the table, the following actions are available for managing the parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Edit

Opens the **Edit Parameter** dialog box that allows you to edit the selected parameter. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

The bottom panel presents the following:

- The default value of the parameter selected in the table.
- A description of the parameter, if available.

- The system ID of the stylesheet that declares it.

Related Information:
Editor Variables on page 125

XSLT Extensions

The **Extensions** button opens a dialog box that allows you to specify the *JARS* and classes that contain extension functions called from the XSLT file of the current transformation scenario. You can use the **Add**, **Edit**, and **Remove** buttons to configure the extensions.

Tip: You can specify the path to the resources using wildcards (for example, `${oxygenHome}/lib/*.jar`).

An extension function called from the XSLT file of the current transformation scenario will be searched, in the specified extensions, in the order displayed in this dialog box. To change the order of the items, select the item to be moved and press the **Move up** or **Move down** buttons.

Additional XSLT Stylesheets

Use the **Additional XSLT Stylesheets** button in the **XSLT** tab to display a list of additional XSLT stylesheets to be used in the transformation and you can add files to the list or edit existing entries. The following actions are available:

Add
: Adds a stylesheet in the **Additional XSLT stylesheets** list using a file browser dialog box. You can type an editor variable in the file name field of the browser dialog box. The name of the stylesheet will be added in the list after the current selection.

Remove
: Deletes the selected stylesheet from the **Additional XSLT stylesheets** list.

Up
: Moves the selected stylesheet up in the list.

Down
: Moves the selected stylesheet down in the list.

Advanced Saxon HE/PE/EE XSLT Transformation Options

The XSLT transformation scenario allows you to configure advanced options that are specific for the Saxon HE (Home Edition), PE (Professional Edition), and EE (Enterprise Edition) engines. They are the same options as those in the **Saxon HE/PE/EE** preferences page but they are configured as a specific set of transformation options for each transformation scenario, while the values set in the preferences page apply as global options. The advanced options configured in a transformation scenario override the global options defined in the preferences page.

Saxon-HE/PE/EE Options

The advanced options for Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE) are as follows:

Mode ("-im")
: A Saxon-specific option that sets the initial mode for the transformation.

Template ("-it")
: A Saxon-specific option that sets the name of the initial XSLT template to be executed.

Use a configuration file ("-config")
: Sets a Saxon 9.8.0.8 configuration file that is executed for XSLT transformation and validation processes.

Debugger trace into XPath expressions (applies to debugging sessions)
: Instructs the XSLT Debugger to *step into* XPath expressions.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Line numbering ("-l")

Line numbers where errors occur are included in the output messages.

Expand attributes defaults ("-expand")

Specifies whether or not the attributes defined in the associated DTD or XML Schema are expanded in the output of the transformation you are executing.

DTD validation of the source ("-dtd")

Specifies whether or not the source document will be validated against their associated DTD. You can choose from the following:

- **On** - Requests DTD validation of the source file and of any files read using the `document()` function.
- **Off** - (default setting) Suppresses DTD validation.
- **Recover** - Performs DTD validation but treats the errors as non-fatal.

  Note: Any external DTD is likely to be read even if not used for validation, since DTDs can contain definitions of entities.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following advanced options are specific for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Register Saxon-JS extension functions and instructions

Registers the Saxon-CE extension functions and instructions when compiling a stylesheet using the Saxon 9.8.0.8 processors.

Note: Saxon-CE, being JavaScript-based, was designed to run inside a web browser. This means that you will use Oxygen XML Editor plugin only for developing the Saxon-CE stylesheet, leaving the execution part to a web browser. See more details about executing such a stylesheet on Saxonica's website.

Allow calls on extension functions ("-ext")

If selected, the stylesheet is allowed to call external Java functions. This does not affect calls on integrated extension functions, including Saxon and EXSLT extension functions. This option is useful when loading an untrusted stylesheet (such as from a remote site using `http://[URL]`). It ensures that the stylesheet cannot call arbitrary Java methods and thus gain privileged access to resources on your machine.

Enable assertions ("-ea")

In XSLT 3.0, you can use the **xsl:assert** element to make assertions in the form of XPath expressions, causing a dynamic error if the assertion turns out to be false. If this option is selected, XSLT 3.0 `xsl:assert` instructions are enabled. If it is not selected (default), the assertions are ignored.

Saxon-EE Options

The advanced options that are specific for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

XML Schema version

Use this option to change the default XML Schema version for this transformation. To change the default XML Schema version globally, open the **Preferences** dialog box and go to **XML** > **XML Parser** > **XML Schema** and use the **Default XML Schema version** option.

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.
- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable streaming mode

Selecting this option will allow an XSLT to run in streaming mode. It is not selected by default.

Other Options

Initializer class

Equivalent to the `-init` Saxon command-line argument. The value is the name of a user-supplied class that implements the *net.sf.saxon.lib.Initializer* interface. This initializer is called during the initialization process, and may be used to set any options required on the configuration programmatically. It is particularly useful for tasks such as registering extension functions, collations, or external object models, especially in Saxon-HE where the option cannot be set via a configuration file. Saxon only calls the initializer when running from the command line, but the same code may be invoked to perform initialization when running user application code.

FO Processor Tab (XSLT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab contains the following options:

Perform FO Processing

Specifies whether or not an FO processor is applied (either the built-in Apache FOP engine or an external engine defined in **Preferences**) during the transformation.

Input

Choose between the following options to specify which input file to use:

- **XSLT result as input** - The FO processor is applied to the result of the XSLT transformation that is defined in the **XSLT** tab.
- **XML URL as input** - The FO processor is applied to the input XML file.

Method

The output format of the FO processing. The available options depend on the selected processor type.

Processor

Specifies the FO processor to be used for the transformation. It can be the built-in Apache FOP processor or an external processor.

Output Tab (XSLT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab contains the following options:

Prompt for file

At the end of the transformation, a file browser dialog box is displayed for specifying the path and name of the file that stores the transformation result.

Save As

The path of the file where the result of the transformation is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Show in results view as

You can choose to view the results in one of the following:

- **XML** - If this is selected, Oxygen XML Editor plugin displays the transformation result in an XML viewer panel at the bottom of the application window with syntax highlighting.
- **XHTML** - This option is only available if **Open in Browser/System Application** is not selected. If selected, Oxygen XML Editor plugin displays the transformation result in a built-in XHTML browser panel at the bottom of the application window.

  Important: When transforming very large documents, you should be aware that selecting this option may result in very long processing times. This drawback is due to the built-in Java XHTML browser implementation. To avoid delays for large documents, if you want to see the XHTML result of the transformation, you should use an external browser by selecting the **Open in Browser/System Application** option instead.

  - **Image URLs are relative to** - If **Show in results view as XHTML** is selected, this option specifies the path used to resolve image paths contained in the transformation result. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Generating Output Using an XSLT Processor

This section explains how to configure an XSLT processor and extensions for such a processor in Oxygen XML Editor plugin.

Supported XSLT Processors

Oxygen XML Editor plugin includes the following XSLT processors:

- **Xalan 2.7.2** - Xalan-Java is an XSLT processor for transforming XML documents into HTML, text, or other XML document types. It implements XSL Transformations (XSLT) Version 1.0 and XML Path Language (XPath) Version 1.0.
- **Saxon 6.5.5** - Saxon 6.5.5 is an XSLT processor that implements the Version 1.0 XSLT and XPath with a number of powerful extensions. This version of Saxon also includes many of the new features that were first defined in the XSLT 1.1 working draft, but for conformance and portability reasons these are not available if the stylesheet header specifies `version="1.0"`.
- **Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE)** - Saxon-HE/PE implements the basic conformance level for XSLT 2.0 / 3.0 and XQuery 1.0. The term *basic XSLT 2.0 / 3.0 processor* is defined in the draft XSLT 2.0 / 3.0 specifications. It is a conformance level that requires support for all features of the language other than those that involve schema processing. The HE product remains open source, but removes some of the more advanced features that are present in Saxon-PE.
- **Saxon 9.8.0.8 Enterprise Edition (EE)** - Saxon EE is the schema-aware edition of Saxon and it is one of the built-in processors included in Oxygen XML Editor plugin. Saxon EE includes an XML Schema processor, and schema-aware XSLT, XQuery, and XPath processors.

  The validation in schema aware transformations is done according to the W3C XML Schema 1.0 or 1.1. This can be configured in Preferences.

  Note: Oxygen XML Editor plugin implements a Saxon *framework* that allows you to create Saxon configuration files. Two templates are available: **Saxon collection catalog** and **Saxon configuration**. Both of these templates support content completion, element annotation, and attribute annotation.

  Note: Saxon can use the *ICU-J localization library* (`saxon9-icu.jar`) to add support for sorting and date/number formatting in a wide variety of languages. This library is not included in the Oxygen XML Editor plugin installation kit. However, Saxon will use the default collation and localization support available in the currently used JRE. To enable this capability, follow these steps:

  1. Download Saxon 9.8.0.8 Professional Edition (PE) or Enterprise Edition (EE) from http://www.saxonica.com.
  2. Unpack the downloaded archive.
  3. Create a new XSLT transformation scenario (or edit an existing one). In the **XSLT** tab, click the **Extensions** button to open the list of additional libraries used by the transformation process.
  4. Click **Add** and browse to the folder where you unpacked the downloaded archive and choose the `saxon9-icu.jar` file.

  Note that the `saxon9-icu.jar` should NOT be added to the application library folder because it will conflict with another version of the ICU-J library that comes bundled with Oxygen XML Editor plugin.
- **Saxon-CE (Client Edition)** is Saxonica's implementation of XSLT 2.0 for use on web browsers. Oxygen XML Editor plugin provides support for editing stylesheets that contain Saxon-CE extension functions and instructions. This support improves the validation, content completion, and syntax highlighting.

  Note: Saxon-CE, being JavaScript-based, was designed to run inside a web browser. This means that you will use Oxygen XML Editor plugin only for developing the Saxon-CE stylesheet, leaving the execution part to a web browser. See more details about executing such a stylesheet on Saxonica's website.

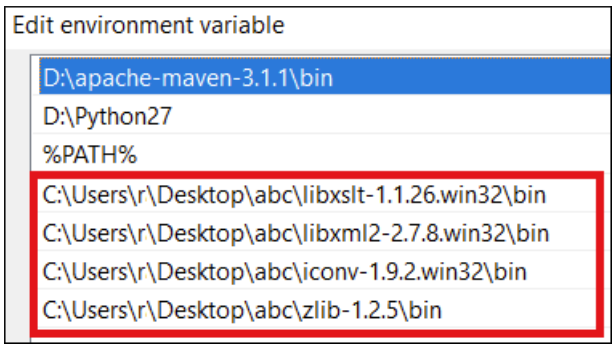
  Note: A specific template, named **Saxon-CE stylesheet**, is available in the **New from Templates** wizard.
- **Xsltproc (libxslt)** - Libxslt is the XSLT C library developed for the Gnome project. **Libxslt** is based on *libxml2*, the XML C library developed for the Gnome project. It also implements most of the EXSLT set of processor-portable extensions, functions, and some of Saxon's evaluate and expression extensions.

  Oxygen XML Editor plugin uses **Libxslt** through its command line tool (*Xsltproc*). Depending on your operating system, you must download the Libxslt libraries on your machine from http://xmlsoft.org/XSLT/

downloads.html and place them in a local folder. Then you need to update the PATH environmental variable to contain the parent folder where the `xsltproc` executable is located.

Tip: As an example, a Windows installation of the Xsltproc engine would follow these steps:

1. Go to ftp://ftp.zlatkovic.com/libxml/ and download the following ZIP files: **iconv-1.9.2.win32.zip**, **libxml2-2.7.8.win32.zip**, **libxslt-1.1.26.win32.zip**, **zlib-1.2.5.win32.zip**.
2. Unzip all of them into the same folder of your choice.
3. Edit the PATH environment variable and add the `bin` folder for all four archives:



4. Restart Oxygen XML Editor plugin.

   Result: You can now use the **xsltproc** processor as an XSLT engine in the XSLT transformation scenario.

Note: The Xsltproc processor can be configured from the **XSLTPROC** options page.

CAUTION: There is a known problem where file paths that contain spaces are not handled correctly in the LIBXML processor. For example, the built-in *XML Catalog* files of the predefined document types (DocBook, TEI, DITA, etc.) are not handled properly by LIBXML if Oxygen XML Editor plugin is installed in the default location on Windows (C:\Program Files). This is because the built-in *XML catalog* files are stored in the *[OXYGEN_INSTALL_DIR]*`/frameworks` subdirectory of the installation directory, and in this case it contains a space character.

- **MSXML 4.0** - MSXML 4.0 is available only on Windows platforms. It can be used for transformation and validation of XSLT stylesheets.

  Oxygen XML Editor plugin uses the Microsoft XML parser through its command line tool *msxsl.exe*.

  Since `msxsl.exe` is only a wrapper, Microsoft Core XML Services (MSXML) must be installed on the computer. Otherwise, you will get a corresponding warning. You can get the latest Microsoft XML parser from Microsoft web-site.
- **MSXML .NET** - MSXML .NET is available only on Windows platforms. It can be used for transformation and validation of XSLT stylesheets.

  Oxygen XML Editor plugin performs XSLT transformations and validations using the .NET *Framework* XSLT implementation (*System.Xml.Xsl.XslTransform* class) through the **nxslt** command line utility. The **nxslt** version included in Oxygen XML Editor plugin is 1.6.

  You should have the .NET *Framework* version 1.0 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 1.0 to be installed. Exit code: 128`.

  You can get the .NET *Framework* version 1.0 from the Microsoft website.
- **.NET 1.0** - A transformer based on the **System.Xml** 1.0 library available in the .NET 1.0 and .NET 1.1 *frameworks* from Microsoft (http://msdn.microsoft.com/xml/). It is available only on Windows.

  You should have the .NET *Framework* version 1.0 or 1.1 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 1.0 to be installed. Exit code: 128`.

  You can get the .NET *Framework* version 1.0 from the Microsoft website.
- **.NET 2.0** - A transformer based on the **System.Xml** 2.0 library available in the .NET 2.0 *Framework* from Microsoft. It is available only on Windows.

You should have the .NET *Framework* version 2.0 already installed on your system. Otherwise, you will get the following warning: `MSXML.NET requires .NET Framework version 2.0 to be installed. Exit code: 128`.

You can get the .NET *Framework* version 2.0 from the Microsoft website.

Configuring Custom XSLT Processors

Oxygen XML Editor plugin allows you to configure custom processors to be used for running XSLT and XQuery transformations.

To add a new custom processor, follow these steps:

1. Open the **Preferences** dialog box and go to **XML** > **XSLT-FO-XQuery** > **Custom Engines**.
2. Click the **New** button at the bottom of the dialog box.
3. Configure the parameters for the custom engine.
4. Click **OK**.

Note: You can not use these custom engines in the Debugger *perspective*.

The output messages of a custom processor are displayed in an output view at the bottom of the application window. If an output message follows the format of an Oxygen XML Editor plugin linked message, clicking it highlights the location of the message in an editor panel containing the file referenced in the message.

Related Information:

Custom Engines Preferences on page 109

Configuring the XSLT Processor Extensions Paths

The Xalan and Saxon processors support the use of extension elements and extension functions. Unlike a literal result element, which the stylesheet simply transfers to the result tree, an extension element performs an action. The extension is usually used because the XSLT stylesheet fails in providing adequate functions for accomplishing a more complex task.

For more information about how to use extensions, see the following links:

- **Xalan** - http://xml.apache.org/xalan-j/extensions.html
- **Saxon 6.5.5** - http://saxon.sourceforge.net/saxon6.5.5/extensions.html
- **Saxon 9.8.0.8** - http://www.saxonica.com/documentation9.5/index.html#!extensibility

To set an XSLT processor extension (a directory or a `jar` file), use the **Extensions** button in the **Edit scenario** dialog box.

XProc Transformation

This type of transformation specifies the parameters and location of an XProc script.

A sequence of transformations described by an XProc script can be executed with an XProc transformation scenario. To create an **XProc transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu. Then click the **New** button and select **XProc transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **XProc transformation**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

Related Information:

Integrating an External XProc Engine on page 974
Editing XProc Scripts on page 787

XProc Tab

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **XProc** tab contains the following options:

XProc URL

Specify the source XSL file to be used by the transformation. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, the file is used directly from its remote location.

Processor

Allows you to select the XProc engine to be used for the transformation. You can select the built-in *Calabash* engine or a custom engine that is configured in the **Preferences** dialog box.

Inputs Tab (XProc Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Inputs** tab contains a list with the ports that the XProc script uses to read input data. Use the **Filter** text box to search for a specific term in the entire ports collection.

Each input port has an assigned name in the XProc script. The XProc engine reads data from the URL specified in the **URL** column.

The following actions are available for managing the input ports:

New

Opens an **Edit** dialog box that allows you to add a new port and its URL. The built-in editor variables and custom editor variables can be used to specify the URL.

Edit

Opens an **Edit** dialog box that allows you to modify the selected port and its URL. The built-in editor variables and custom editor variables can be used to specify the URL.

Delete

Removes the selected port from the list. It is available only for new ports that have been added to the list.

Parameters Tab (XProc Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Parameters** tab presents a list of ports and parameters collected from the XProc script. The tab is divided into three sections:

List of Ports

In this section, you can use the **New** and **Delete** buttons to add or remove ports.

List of Parameters

This section presents a list of parameters for each port and includes columns for the parameter name, namespace URI, and its value. Use the **Filter** text box to search for a specific term in the entire parameters collection. You can use the **New** and **Delete** buttons to add or remove parameters. You can edit the value of each cell in this table by double-clicking the cell. You can also sort the parameters by clicking the column headers.

Editor Variable Information

The built-in editor variables and custom editor variables can be used for specifying the URI. The message pane at the bottom of the dialog box provides more information about the editor variables that can be used.

Outputs Tab (XProc Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Outputs** tab displays a list of output ports (along with the URL) collected from the XProc script. Use the **Filter** text box to search for a specific term in the entire ports collection. You can also sort the columns by clicking the column headers.

The following actions are available for managing the output ports:

New

Opens an **Edit** dialog box that allows you to add a new output port and its URL. An editor variable can be inserted for the URL by using the **Insert Editor Variables** button. There is also a **Show in transformation results view** option that allows you to select whether or not the results will be displayed in the output **Results** view.

Edit

Opens an **Edit** dialog box that allows you to edit an existing output port and its URL. An editor variable can be inserted for the URL by using the **Insert Editor Variables** button. There is also a **Show in transformation results view** option that allows you to select whether or not the results will be displayed in the output **Results** view.

Delete

Removes the selected output port from the list. It is available only for new ports that have been added to the list.

Additional options that are available at the bottom of this tab include:

Open in Editor

If this option is selected, the XProc transformation result is automatically opened in an editor panel.

Open in Browser/System Application

If this option is selected, you can specify a file to be opened at the end of the XProc transformation in the browser or system application that is associated with the file type. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Results

The result of the XProc transformation can be displayed as a sequence in an output view with two sections:

- A list with the output ports on the left side.
- The content that correspond to the selected output port on the right side.

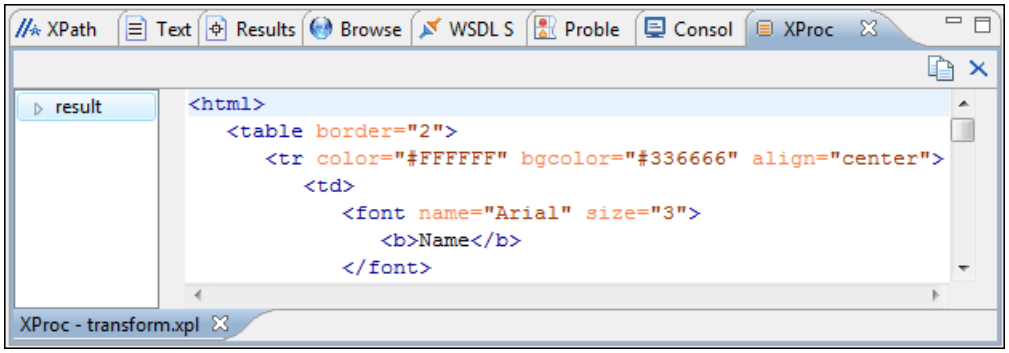


Figure 555: XProc Transformation Results View

Options Tab (XProc Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Options** tab displays a list of the options collected from the XProc script. The tab is divided into two sections:

List of Options

This section presents a list of options and includes columns for the option name, namespace URI, and its value. Use the **Filter** text box to search for a specific term in the entire options collection. You can use the **New** and **Delete** buttons to add or remove options. You can edit the value of each cell in this table by double-

clicking the cell. You can also sort the parameters by clicking the column headers. The names of edited options are displayed in bold.

Editor Variable Information

The built-in editor variables and custom editor variables can be used for specifying the URI. This section provides more information about the editor variables that can be used.

Integrating an External XProc Engine

If you edit an XProc transformation scenario, there is a **Processor** drop-down menu where you can select the XProc engine to be used for the transformation. You can select the built-in *Calabash* engine or a custom engine based on another XProc implementation. For example, there is a public project on GitHub that is an implementation for integrating Morgana XProc with Oxygen XML Editor plugin: https://github.com/xml-project/support-for-xmleditor. Also, the Javadoc documentation of the XProc API is available for download from the application website as a zip file: *xprocAPI.zip*.

To create an XProc integration project, follow these steps:

1. Move the `oxygen.jar` file from *`[OXYGEN_INSTALL_DIR]`*`/lib` to the `lib` folder of your project.
2. Implement the *ro.sync.xml.transformer.xproc.api.XProcTransformerInterface* interface.
3. Create a *Java archive (JAR)* from the classes you created.
4. Create an `engine.xml` file according to the `engine.dtd` file. The attributes of the `engine` element are as follows:
   a. **name** - The name of the XProc engine.
   b. **description** - A short description of the XProc engine.
   c. **class** - The complete name of the class that implements *ro.sync.xml.transformer.xproc.api.XProcTransformerInterface*.
   d. **version** - The version of the integration.
   e. **engineVersion** - The version of the integrated engine.
   f. **vendor** - The name of the vendor / implementer.
   g. **supportsValidation** - **true** if the engine supports validation (otherwise, **false**).

   The `engine` element has only one child, `runtime`. The `runtime` element contains several `library` elements with the `name` attribute containing the relative or absolute location of the libraries necessary to run this integration.
5. Create a new folder (for example, named `MyXprocEngine`) and place the `engine.xml` and all the libraries necessary to run the new integration in that folder.
6. Place that new folder (i.e. `MyXprocEngine`) inside a new plugin folder. This new plugin folder should also contain a `plugin.xml` file that points to the new engine folder (i.e. `MyXprocEngine`).

   The `plugin.xml` file would look like this:

```
<plugin
 id="morgana.xproc.addon"
 name="Contribute Morgana XProc"
 description="Contribute Morgana XProc"
 version="1.0"
 vendor="SyncroSoft"
 class="ro.sync.exml.plugin.Plugin"
 classLoaderType="preferReferencedResources">
 <extension type="AdditionalXProcEngine" path="MyXprocEngine/"></extension>
</plugin>
```

Related Information:

Editing XProc Scripts on page 787

Creating an XProc Transformation Scenario on page 971

This type of transformation specifies the parameters and location of an XProc script.

XQuery Transformation

This type of transformation specifies the parameters and location of an XML source that the edited XQuery file is applied on.

Note: When the XML source is a native XML database, the source field of the scenario is empty because the XML data is read with XQuery-specific functions, such as `document()`. When the XML source is a local XML file, the URL of the file is specified in the input field of the scenario.

To create an **XQuery transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu. Then click the **New** button and select **XQuery transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **XQuery transformation**.

Both methods open the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation.

XQuery Tab

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **XQuery** tab contains the following options:

XML URL

Specifies the source XML file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, then the file is used directly from its remote location.

Note: If the transformer engine is Saxon 9.x and a custom URI resolver is configured in the advanced Saxon preferences page, the XML input of the transformation is passed to that URI resolver.

XQuery URL

Specifies the source XQuery file to be used for the transformation. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. This URL is resolved through the catalog resolver. If the catalog does not have a mapping for the URL, the file is used directly from its remote location.

Transformer

This drop-down menu presents all the transformation engines available to Oxygen XML Editor plugin for performing a transformation. These include the built-in engines and the external engines defined in the Custom Engines preferences page. The engine you choose is used as the default transformation engine. Also, if an XSLT or XQuery document does not have an associated validation scenario, this transformation engine is used in the validation process (if it provides validation support).

Advanced options

Allows you to configure the advanced options of the Saxon HE/PE/EE engine for the current transformation scenario. To configure the same options globally, go to the Saxon-HE/PE/EE preferences page. For the current transformation scenario, these **Advanced options** override the options configured in that preferences page.

Parameters

Opens the **Configure parameters** dialog box for configuring the XQuery parameters. You can use the buttons in this dialog box to add, edit, or remove parameters. If the XQuery transformation engine is custom-defined, you can not use this dialog box to set parameters. Instead, you can copy all parameters from the dialog box using contextual menu actions and edit the custom XQuery engine to include the necessary parameters in the command line that starts the transformation process.

Extensions

Opens a dialog box for configuring the XQuery extension *JARS* or classes that define extension Java functions or extension XSLT elements used in the transformation.

XQuery Parameters

The global parameters of the XQuery file used in a transformation scenario can be configured by using the **Parameters** button in the **XQuery** tab.

The resulting dialog box includes a table that displays all the parameters of the current XQuery file, along with their descriptions and current values. You can also add, edit, and remove parameters, and use the **Filter** text box to search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

If the **XPath** column is selected, the parameter value is evaluated as an XPath expression before starting the XQuery transformation.

Example:

For example, you can use expressions such as:

```
doc('test.xml')//entry
//person[@atr='val']
```

Note:

1. The **doc** function solves the argument relative to the XQuery file location. You can use full paths or editor variables (such as **${cfdu}** [current file directory]) to specify other locations: `doc('${cfdu}/test.xml')//*`
2. Only XPath functions are allowed.

Below the table, the following actions are available for managing the parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Edit

Opens the **Edit Parameter** dialog box that allows you to edit the selected parameter. An editor variable can be inserted in the text box using the **Insert Editor Variables** button. If the **Evaluate as XPath** option is selected, the parameter will be evaluated as an XPath expression.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

The bottom panel presents the following:

- The default value of the parameter selected in the table.
- A description of the parameter, if available.
- The system ID of the stylesheet that declares it.

Related Information:

Editor Variables on page 125

XQuery Extensions

The **Extensions** button is used to specify the *JAR* and classes that contain extension functions called from the XQuery file of the current transformation scenario. You can use the **Add**, **Edit**, and **Remove** buttons to configure the extensions.

An extension function called from the XQuery file of the current transformation scenario will be searched, in the specified extensions, in the order displayed in this dialog box. To change the order of the items, select the item to be moved and press the **Move up** or **Move down** buttons.

Advanced Saxon HE/PE/EE XQuery Transformation Options

The XQuery transformation scenario allows you to configure advanced options that are specific for the Saxon HE (Home Edition), PE (Professional Edition), and EE (Enterprise Edition) engines. They are the same options as those in the **Saxon HE/PE/EE** preferences page but they are configured as a specific set of transformation options for each transformation scenario, while the values set in the preferences page apply as global options. The advanced options configured in a transformation scenario override the global options defined in the preferences page.

Saxon-HE/PE/EE Options

The advanced options for Saxon 9.8.0.8 Home Edition (HE), Professional Edition (PE), and Enterprise Edition (EE) are as follows:

Use a configuration file ("-config")

Sets a Saxon 9.8.0.8 configuration file that is used for XQuery transformation and validation scenarios.

Enable Optimizations ("-opt")

This option is selected by default, which means that optimization is enabled. If not selected, the optimization is suppressed, which is helpful when reducing the compiling time is important, optimization conflicts with debugging, or optimization causes extension functions with side-effects to behave unpredictably.

Use linked tree model ("-tree:linked")

This option activates the linked tree model.

Recoverable errors ("-warnings")

Allows you to choose how dynamic errors are handled. The following options can be selected:

- **Recover silently ("silent")** - Continues processing without reporting the error.
- **Recover with warnings ("recover")** - Issues a warning but continues processing.
- **Signal the error and do not attempt recovery ("fatal")** - Issues an error and stops processing.

Strip whitespaces ("-strip")

Allows you to choose how the *strip whitespaces* operation is handled. You can choose one of the following values:

- **All ("all")** - Strips *all* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document.
- **Ignore ("ignorable")** - Strips all *ignorable* whitespace text nodes from source documents before any further processing, regardless of any `xml:space` attributes in the source document. Whitespace text nodes are ignorable if they appear in elements defined in the DTD or schema as having element-only content.
- **None ("none")** - Strips *no* whitespace before further processing.

Saxon-PE/EE Options

The following advanced options are specific for Saxon 9.8.0.8 Professional Edition (PE) and Enterprise Edition (EE) only:

Allow calls on extension functions ("-ext")

If selected, calls on external functions are allowed. Selecting this option is recommended in an environment where untrusted stylesheets may be executed. It also disables user-defined extension elements and the writing of multiple output files, both of which carry similar security risks.

Saxon-EE Options

The advanced options that are specific for Saxon 9.8.0.8 Enterprise Edition (EE) are as follows:

Validation of the source file ("-val")

Requests schema-based validation of the source file and of any files read using `document()` or similar functions. It can have the following values:

- **Schema validation ("strict")** - This mode requires an XML Schema and allows for parsing the source documents with strict schema-validation enabled.

- **Lax schema validation ("lax")** - If an XML Schema is provided, this mode allows for parsing the source documents with schema-validation enabled but the validation will not fail if, for example, element declarations are not found.
- **Disable schema validation** - This specifies that the source documents should be parsed with schema-validation disabled.

Validation errors in the result tree treated as warnings ("-outval")

Normally, if validation of result documents is requested, a validation error is fatal. Selecting this option causes such validation failures to be treated as warnings.

Write comments for non-fatal validation errors of the result document

The validation messages for non-fatal errors are written (wherever possible) as a comment in the result document itself.

Enable XQuery update ("-update:(on|off)")

This option controls whether or not XQuery update syntax is accepted. The default value is off.

Backup files updated by XQuery ("-backup:(on|off)")

If selected, backup versions for any XML files updated with an XQuery Update are generated. This option is available when the **Enable XQuery update** option is selected.

Other Options

Initializer class

Equivalent to the `-init` Saxon command-line argument. The value is the name of a user-supplied class that implements the *net.sf.saxon.lib.Initializer* interface. This initializer is called during the initialization process, and may be used to set any options required on the configuration programmatically. It is particularly useful for tasks such as registering extension functions, collations, or external object models, especially in Saxon-HE where the option cannot be set via a configuration file. Saxon only calls the initializer when running from the command line, but the same code may be invoked to perform initialization when running user application code.

FO Processor Tab (XQuery Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab contains the following options:

Perform FO Processing

Specifies whether or not an FO processor is applied (either the built-in Apache FOP engine or an external engine defined in **Preferences**) during the transformation.

Input

Choose between the following options to specify which input file to use:

- **XQuery result as input** - The FO processor is applied to the result of the XQuery transformation that is defined in the **XQuery** tab.
- **XML URL as input** - The FO processor is applied to the input XML file.

Method

The output format of the FO processing. The available options depend on the selected processor type.

Processor

Specifies the FO processor to be used for the transformation. It can be the built-in Apache FOP processor or an external processor.

Output Tab (XQuery Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab contains the following options:

Present as a sequence

Selecting this option will reduce the time necessary to fetch the full results, as it will only fetch the first chunk of the results.

Prompt for file

At the end of the transformation, a file browser dialog box is displayed for specifying the path and name of the file that stores the transformation result.

Save As

The path of the file where the result of the transformation is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Show in results view as

You can choose to view the results in one of the following:

- **XML** - If this is selected, Oxygen XML Editor plugin displays the transformation result in an XML viewer panel at the bottom of the application window with syntax highlighting.
- **XHTML** - This option is only available if **Open in Browser/System Application** is not selected. If selected, Oxygen XML Editor plugin displays the transformation result in a built-in XHTML browser panel at the bottom of the application window.

  Important: When transforming very large documents, you should be aware that selecting this option may result in very long processing times. This drawback is due to the built-in Java XHTML browser implementation. To avoid delays for large documents, if you want to see the XHTML result of the transformation, you should use an external browser by selecting the **Open in Browser/System Application** option instead.

  - **Image URLs are relative to** - If **Show in results view as XHTML** is selected, this option specifies the path used to resolve image paths contained in the transformation result. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

SQL Transformation

This type of transformation specifies a database connection for the database server that runs the SQL file associated with the scenario. The data processed by the SQL script is located in the database.

To create an **SQL transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s)** (**Alt + Shift + T, C (Command + Alt + T, C on OS X)**) action from the toolbar or the **XML** menu. Then click the **New** button and select **SQL transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **SQL transformation**.

Both methods open the **New Scenario** dialog box. This dialog box allows you to configure the following options that control the transformation:

Name

The unique name of the SQL transformation scenario.

SQL URL

Allows you to specify the URL of the SQL script. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Connection

Allows you to select a connection from a drop-down list. To configure a connection, use the **Advanced options** button to open the **Data Source** preferences page.

Parameters

Allows you to add or configure parameters for the transformation.

Editing a Transformation Scenario

Editing a transformation scenario is useful if you need to configure some of its parameters.

Note: Since transformation scenarios that are associated with predefined *frameworks* are read-only, to edit one of these scenarios you will need to duplicate it and edit the duplicated scenario.

To configure an existing transformation scenario, follow these steps:

1. Select the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.

   Step Result: The **Configure Transformation Scenario(s)** dialog box is opened.
2. Select the particular transformation scenario and click the **Edit** button at the bottom of the dialog box or from the contextual menu.

   Tip: You could also select the scenario and the **Edit** button in the **Transformation Scenarios** view to achieve the same result.

Result: This will open an **Edit scenario** configuration dialog box that allows you to configure various options in several tabs, depending on the type of transformation scenario that was selected.

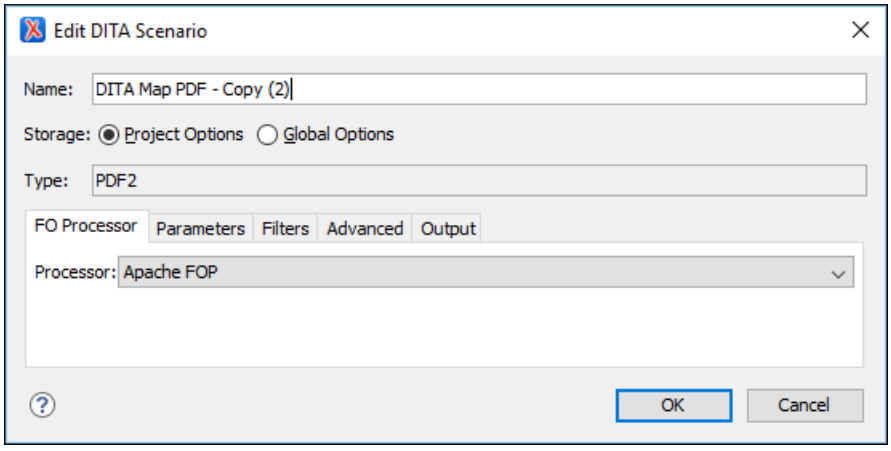


Figure 556: Edit Scenarios Configuration Dialog Box

Transformation Types

The **Configure Transformation Scenario(s)** dialog box contains a **Type** column that shows you the transformation type for each of the listed scenarios. Each type of transformation contains includes some tabs with various configuration options.

The following is a list of the transformation types and their particular tabs (click the name of each tab below to see details about all the options that are available):

- **DITA OT** - This type of transformation includes configurable options in the following tabs:
  - Skins Tab (Available for **WebHelp Classic** and **WebHelp Classic with Feedback**)
  - Templates Tab (Available for **WebHelp Responsive** and **WebHelp Responsive with Feedback**)
  - FO Processor Tab (Available for PDF output)
  - Parameters Tab
  - Filters Tab
  - Advanced Tab
  - Output Tab
- **ANT** - This type of transformation includes configurable options in the following tabs:
  - Options Tab
  - Parameters Tab
  - Output Tab
- **XSLT** - This type of transformation includes configurable options in the following tabs:
  - XSLT Tab
  - FO Processor Tab
  - Output Tab
- **XProc** - This type of transformation includes configurable options in the following tabs:
  - XProc Tab
  - Inputs Tab
  - Parameters Tab
  - Outputs Tab
  - Options Tab
- **XQuery** - This type of transformation includes configurable options in the following tabs:
  - XQuery Tab
  - FO Processor Tab
  - Output Tab

Related Information:

Creating New Transformation Scenarios on page 936
Duplicating a Transformation Scenario on page 981
Configure Transformation Scenario(s) Dialog Box on page 982
Applying Associated Transformation Scenarios on page 982

Duplicating a Transformation Scenario

Duplicating a transformation scenario is useful for creating a scenario that is similar to an existing one or to edit a predefined transformation scenario.

To configure an existing transformation scenario, follow these steps:

1. Select the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.

   Step Result: The **Configure Transformation Scenario(s)** dialog box is opened.
2. Select the particular transformation scenario and click the **Duplicate** button at the bottom of the dialog box or from the contextual menu.

   Tip: You could also select the scenario and the **Duplicate** button in the **Transformation Scenarios** view to achieve the same result.

Result: This will open an **Edit scenario** configuration dialog box that allows you to configure various options in several tabs, depending on the type of transformation scenario that was selected. For information about all the specific options in the various tabs, see the Transformation Types section.

Related Information:

Creating New Transformation Scenarios on page 936

Editing a Transformation Scenario on page 980

Applying Associated Transformation Scenarios

If you have associated transformation scenarios for the current document (in the **Configure Transformation Scenario(s)** dialog box or **Transformation Scenarios** view), Oxygen XML Editor plugin included an **Apply Transformation Scenario(s)** action that allows you to quickly apply the associated transformation scenarios on the current document. Note that if an association is not detected, this action will open the **Configure Transformation Scenario(s)** dialog box where you can choose the scenarios you want to apply.

The **Apply Transformation Scenario(s)** action can be initiated from any of the following methods:

- Use the **Alt + Shift + T, T (Command + Alt + T, T on OS X))** keyboard shortcut.
- Click the **Apply Transformation Scenario(s)** button on the main toolbar.
- Click the **Apply Transformation Scenario(s)** button on the toolbar in the **Transformation Scenarios** view.
- Right-click a file in the **Navigator** view and select **Transform** > **Apply Transformation Scenario(s)**.
- Use the **Apply Associated** button in the **Configure Transformation Scenario(s)** dialog box.

Related Information:

Creating New Transformation Scenarios on page 936
Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Transformation Scenarios View on page 986

Configure Transformation Scenario(s) Dialog Box

You can use the **Configure Transformation Scenarios(s)** dialog box for editing existing transformation scenarios or creating new ones.

To open this dialog box, use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.

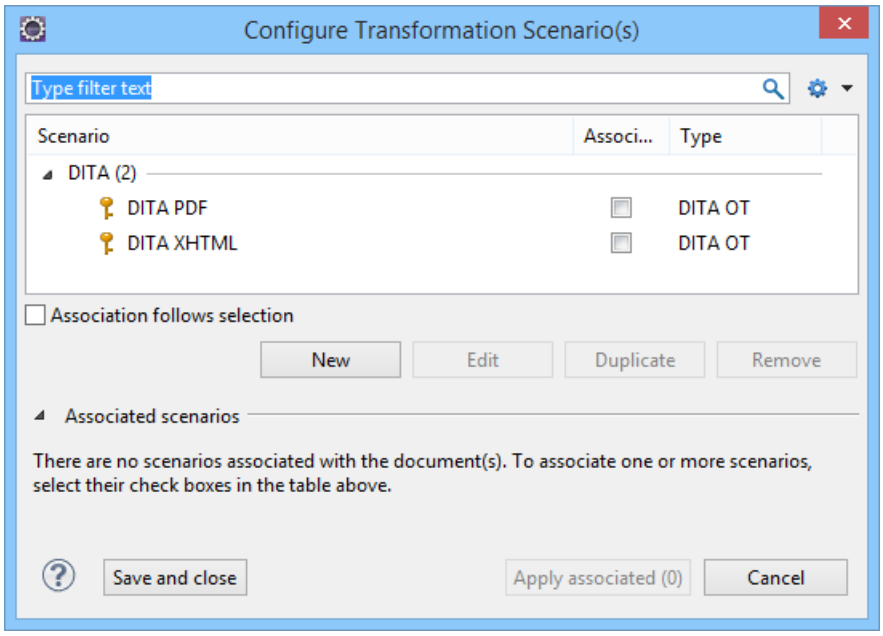


Figure 557: Configure Transformation Scenario(s) Dialog Box

Top Section

The top section of the dialog box contains a filter that allows you to search through the scenarios list and the **Settings** button allows you to configure the following options:

Show all scenarios

Select this option to display all the available scenarios, regardless of the document they are associated with.

Show only the scenarios available for the editor

Select this option to only display the scenarios that Oxygen XML Editor plugin can apply for the current document type.

Show associated scenarios

Select this option to only display the scenarios associated with the document you are editing.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export selected scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export. This is useful if you want to share scenarios with others or export them to another computer.

Middle Section

The middle section of the dialog box displays the scenarios that you can apply to the current document. The following columns are used to display the transformation scenarios:

- **Association** - The checkboxes in this column mark whether or not a transformation scenario is associated with the current document.
- **Scenario** - This column presents the names of the transformation scenarios.
- **Type** - If the **Show Type** contextual menu option is selected, this column displays the type of the transformation scenario. For further details about the types of transformation scenarios that are available in Oxygen XML Editor plugin, see the Transformation Types section.
- **Storage** - If the **Show Storage** contextual menu option is selected, this column displays where a transformation scenario is stored.

To sort each column you can left-click its header. The contextual menu of each header also includes the following actions:

Show Type

Use this option to display the transformation type of each scenario.

Show Storage

Use this option to display the storage location of the scenarios.

Group by Type

Select this option to group the scenarios by their type.

Group by Storage

Select this option to group the scenarios by their storage location.

Ungroup all

Select this option to ungroup all the scenarios.

Reset Layout

Select this option to restore the default settings of the layout.

Each transformation scenarios listed in the middle section of the dialog box also includes the following contextual menu actions:

Edit

This button opens the **Edit Scenario** configuration dialog box that allows you to configure the options of the transformations scenario.

Duplicate

Use this button to create a duplicate transformation scenario.

Remove

Use this button to remove custom transformation scenarios.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export selected scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export. This is useful if you want to share scenarios with others or export them to another computer.

Bottom Section

The bottom section of the dialog box contains the following actions and information:

Association follows selection

Select this checkbox to automatically associate selected transformation scenarios with the current document. This option can also be used for multiple selections.

Note: When this option is selected, the **Association** column is hidden.

New

This button allows you to create a new transformation scenario.

Edit

This button opens the **Edit Scenario** dialog box that allows you to configure the options of the transformations scenario. For information about all the specific options in the various tabs, see the Transformation Types section.

Note: If you try to edit a transformation scenario associated with a defined document type, Oxygen XML Editor plugin displays a warning message to inform you that this is not possible and gives you the option to create a duplicate transformation scenario to edit instead.

Duplicate

Use this button to create a duplicate transformation scenario.

Remove

Use this button to remove transformation scenarios.

Note: Removing scenarios associated with a defined document type is not allowed.

Associated scenarios section

Displays the scenarios that are associated with the current document. Selecting a checkbox in the **Association** column in the list of scenarios will add that scenario to this section. To remove a scenario from being associated with the current document, simply click the remove icon ( ) to the right of the scenario name.

Save and close

Saves the current configuration and closes the dialog box.

Apply associated

Use this button to apply the associated scenarios and run the transformation on the current document.

Cancel

Cancels any changes made in the dialog box and reverts to the previously saved association.

Your selections in the **Configure Transformation Scenarios(s)** dialog box are persistent so the configured associations for the current document will be remembered after the dialog box is closed.

Related Information:

Editing a Transformation Scenario on page 980
Duplicating a Transformation Scenario on page 981
Applying Associated Transformation Scenarios on page 982
Creating New Transformation Scenarios on page 936
Sharing Transformation Scenarios on page 985

Batch Transformations

A transformation action can be applied on a batch of selected files from the contextual menu of the **Navigator** view without having to open the files involved in the transformation. You can apply the same scenario to a batch of files or multiple scenarios to a single file or batch of files.

1. Select the files you want to transform and from the contextual menu, select **Transform** > **Configure Transformation Scenario(s)** to choose one or more transformation scenarios to be applied on all the files in the logical folder.
2. Use Oxygen XML Editor plugin editor variables to specify the input and output files. This ensures that each file from the selected set of resources is processed and that the output is not overwritten by the subsequent processing.
   a) Edit the transformation scenario to make sure the appropriate editor variable is assigned for the input file. For example, for a *DocBook PDF transformation* make sure the **XML URL** input box is set to the *${currentFileURL}* editor variable. For a DITA PDF transformation make sure the `args.input` parameter is set to the *${cf}* editor variable.
   b) Edit the transformation scenario to make sure the appropriate editor variable is assigned for the output file. For example, for an **XML transformation with XSLT**, switch to the **Output** tab and set the path of the output file using a construct of editor variables, such as `${cfd}/${cfn}.html`.
3. Now that logical folder has been associated with one or more transformation scenarios, whenever you want to apply the same batch transformation you can select **Transform** > **Transform with** from the contextual menu and the same previously associated scenario(s) will be applied.
4. If you want a different type of transformation to be applied to each file inside the logical folder, associate individual scenarios for each file and select **Transform** > **Apply Transformation Scenario(s)** from the contextual menu of the logical folder.

Related Information:

Editor Variables on page 125

Sharing Transformation Scenarios

The transformation scenarios and their settings can be shared with other users by exporting them to a specialized scenarios file that can then be imported.

Transformation Scenarios View

You can manage the transformation scenarios by using the **Transformation Scenarios** view. To open this view, select **Window** > **Show View** > **Transformation Scenarios**.

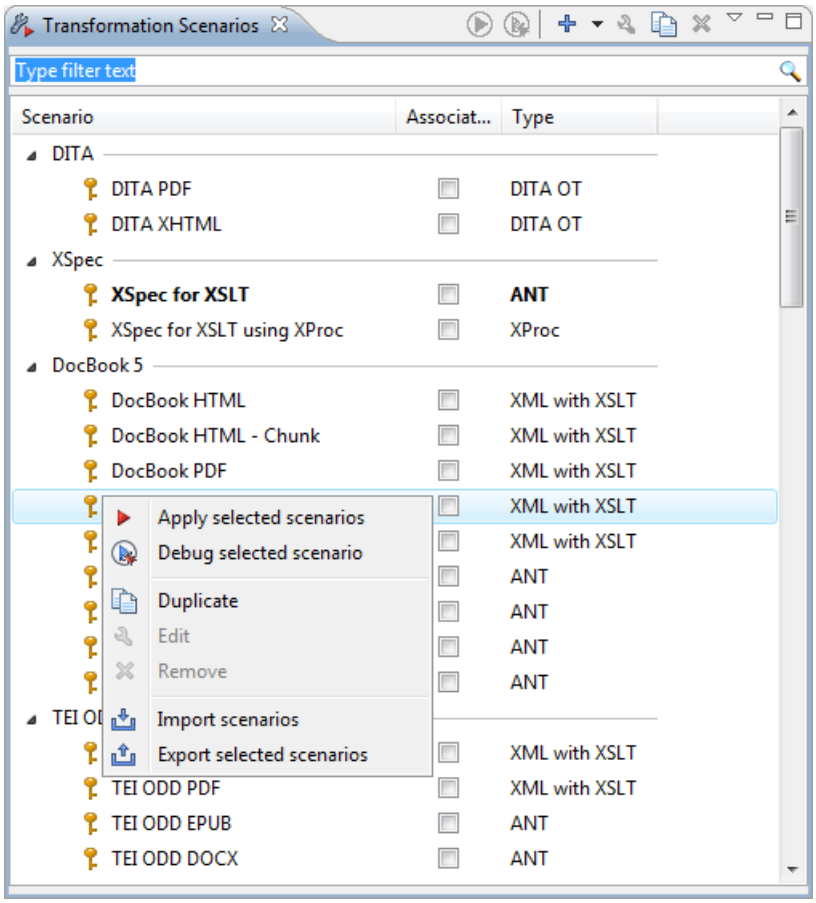


Figure 558: Transformation Scenarios view

Oxygen XML Editor plugin supports multiple scenarios association. To associate multiple scenarios with a document, select the checkboxes in front of each scenario. You can also associate multiple scenarios with a document from the **Configure Transformation Scenario(s)** dialog box.

By default, Oxygen XML Editor plugin presents the items in the following order:

1. Scenarios that match the current *framework*.
2. Scenarios that match the current project.
3. Scenarios that match other *frameworks*.

Toolbar/Contextual Menu Actions and Options

The following actions and options are available on the toolbar or in the contextual menu:

Apply selected scenarios

Select this option to run the current transformation scenario.

Debug selected scenario

Select this option to switch to the **Debugger** *perspective* and initialize it with the parameters from the scenario (the XML, XSLT, or XQuery input, the transformation engine, the XSLT parameters).

New

This drop-down menu contains a list of the scenarios that you can create. Oxygen XML Editor plugin determines the most appropriate scenarios for the current type of file and displays them at the beginning of the list, followed by the rest of the scenarios.

Duplicate

Adds a new scenario to the list that is a duplicate of the current scenario. It is useful for creating a scenario that is similar to an existing one.

Edit

Opens the dialog box that allows you to configure various options in several tabs, depending on the type of transformation scenario that was selected. For information about all the specific options in the various tabs, see the Transformation Types section.

Remove

Removes the current scenario from the list. This action is also available by using the **Delete** key.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export transformation and validation scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export.

Settings

This drop-down menu allows you to configure the following options (many of these options are also available if you right-click the name of a column):

Show all scenarios

Select this option to display all the available scenarios, regardless of the document they are associated with.

Show only the scenarios available for the editor

Select this option to only display the scenarios that Oxygen XML Editor plugin can apply for the current document type.

Show associated scenarios

Select this option to only display the scenarios associated with the document you are editing.

Import scenarios

This option opens the **Import scenarios** dialog box that allows you to select the `scenarios` file that contains the scenarios you want to import. If one of the scenarios you import is identical to an existing scenario, Oxygen XML Editor plugin ignores it. If a conflict appears (an imported scenario has the same name as an existing one), you can choose between two options:

- Keep or replace the existing scenario.
- Keep both scenarios.

  Note: When you keep both scenarios, Oxygen XML Editor plugin adds `imported` to the name of the imported scenario.

Export selected scenarios

Use this option to export selected scenarios individually. Oxygen XML Editor plugin creates a `scenarios` file that contains the scenarios that you export. This is useful if you want to share scenarios with others or export them to another computer.

Show Type

Use this option to display the transformation type of each scenario.

Show Storage

Use this option to display the storage location of the scenarios.

Group by Type

Select this option to group the scenarios by their type.

Group by Storage

Select this option to group the scenarios by their storage location.

Ungroup all

Select this option to ungroup all the scenarios.

Reset Layout

Select this option to restore the default settings of the layout.

Your selections in the **Transformation Scenarios** view are persistent so the configured associations for the current document will be remembered whenever the document is opened.

Related Information:

Editing a Transformation Scenario on page 980
Creating New Transformation Scenarios on page 936

WebHelp Output

Oxygen XML WebHelp provides the ability to generate two different types of output, **WebHelp Responsive** and **WebHelp Classic**. Both types include a feedback-enabled variant and each has its own set of options and features. The **WebHelp Responsive** variants are available for DITA documents while the **WebHelp Classic** variants are available for both DITA and DocBook.

Table 65: WebHelp System Feature Matrix

Features	WebHelp System Variants			
	Responsive w/ Feedback	**Responsive**	**Classic w/ Feedback**	**Classic**
Desktop Systems	✔	✔	✔	✔
Mobile Devices	✔	✔		
Predefined Skins	✔	✔	✔	✔
Predefined Templates	✔	✔		
Search Capabilities	✔	✔	✔	✔
Modern Layout	✔	✔		
Adaptable to Any Screen Size	✔	✔		
Comments Section	✔		✔	
DITA Documents	✔	✔	✔	✔

Features	WebHelp System Variants			
	Responsive w/ Feedback	Responsive	Classic w/ Feedback	Classic
DocBook Documents			✔	✔
Tri-Pane Frames or Frameless Version			✔	✔

WebHelp Classic Output

The **WebHelp Classic** variant is designed for desktop systems when feedback from users is not necessary and it is available for DocBook and DITA document types. The **WebHelp Classic with Feedback** variant also includes a feedback system that allows your users to make comments and allows you to manage and reply to them. This section contains information about configuring a WebHelp Classic system and customizing the output.

This type of WebHelp system can be generated by using one of the following transformation scenarios:

- **DITA Map WebHelp Classic** transformation scenario
- **DITA Map WebHelp Classic with Feedback** transformation scenario
- **DocBook WebHelp Classic** transformation scenario
- **DocBook WebHelp Classic with Feedback** transformation scenario

WebHelp Classic Output Layout and Features

Layout of the WebHelp Classic System Interface

The layout of the **WebHelp Classic** system is comprised of the following components:

Left Pane or Frame

This section on the left side of the help system includes the following tabs:

Content

A typical table of contents style presentation of your content. You can use the **Expand all/Collapse all** buttons to expand or collapse all the topics presented in the Table of Contents.

Note: You can enhance the appearance of items in the *Table of Contents*. See the Customizing WebHelp Classic Output chapter for more details.

Index

Presents the index terms for your content. If your content does not contain any `indexterm` elements, this tab is not generated.

Search Results

This tab is generated when the **Search** field is used. It presents the search results in the form of links to topics where the search terms are found, along with a rating scheme for each result. For more details, see the Search Feature section.

Upper Pane or Frame

The upper section of the help system includes the following features:

Search Field

Use this feature to perform searches in your content. When you enter search terms in this field, the results are displayed in the **Search Results** tab in the left section of the help system, along with a rating scheme for each result. For more details, see the Search Feature section.

Frames Option

Click on this option to display the output rendered in HTML frames.

Print Option

Opens a dialog box with various printing options and a print preview.

Navigation Links

You can navigate through the content of your output using the navigation links or arrows in the upper-right part of the page. These arrows allow you to move to the **Parent topic**, **Previous topic**, or **Next topic**. Links to the parent topics of the currently opened topic are also presented at the top of the page. For DITA output, these navigation links are controlled by the `collection-type` attribute.

Tip: To hide the **Parent**, **Next**, and **Previous** links, you can edit the transformation scenario and set the value of the `args.hide.parent.link` parameter to `yes`.

Main Pane or Frame

The content of the help pages are rendered and displayed in this main section.

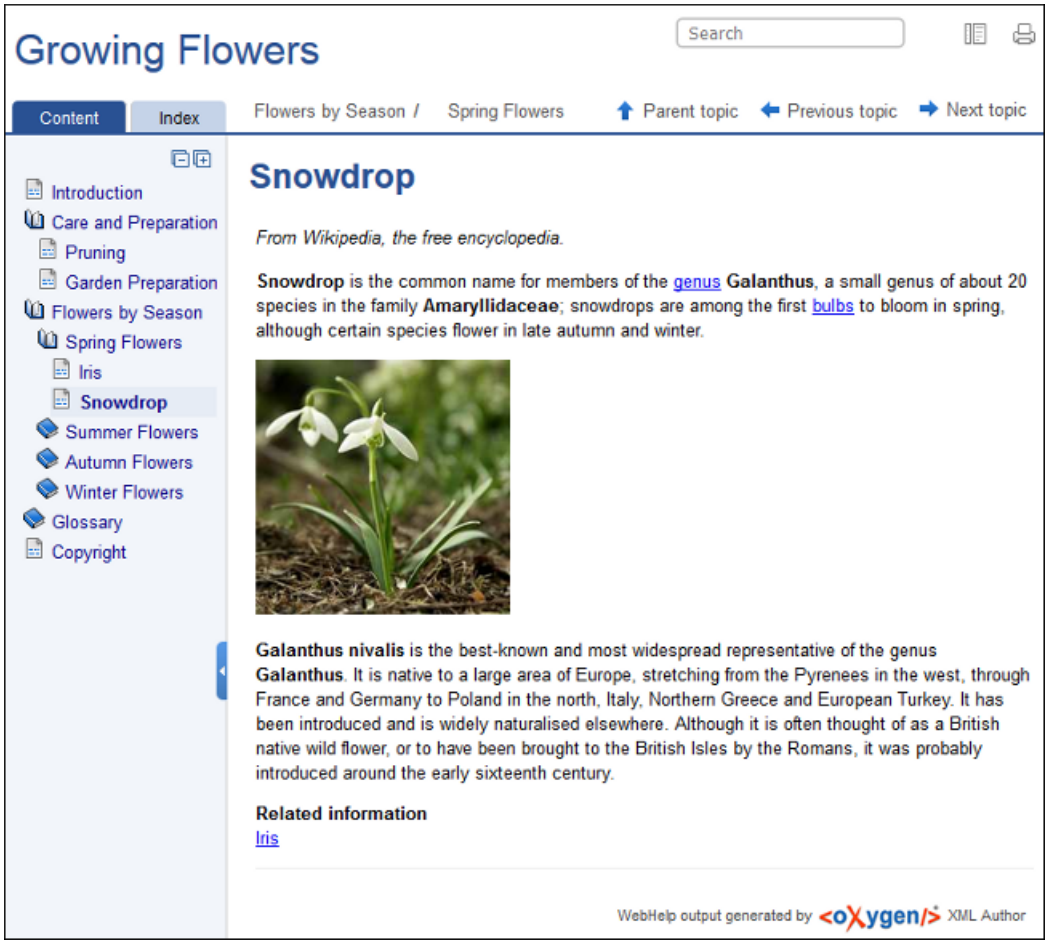


Figure 559: WebHelp Classic Output

WebHelp Classic with Feedback Enabled

The **WebHelp Classic with Feedback** variant also contains a **Comments** section at the bottom of each topic. This section is where you can interact with users through a comment system. For information about deploying a feedback-enabled system, see Deploying a Feedback-Enabled System on page 1050.

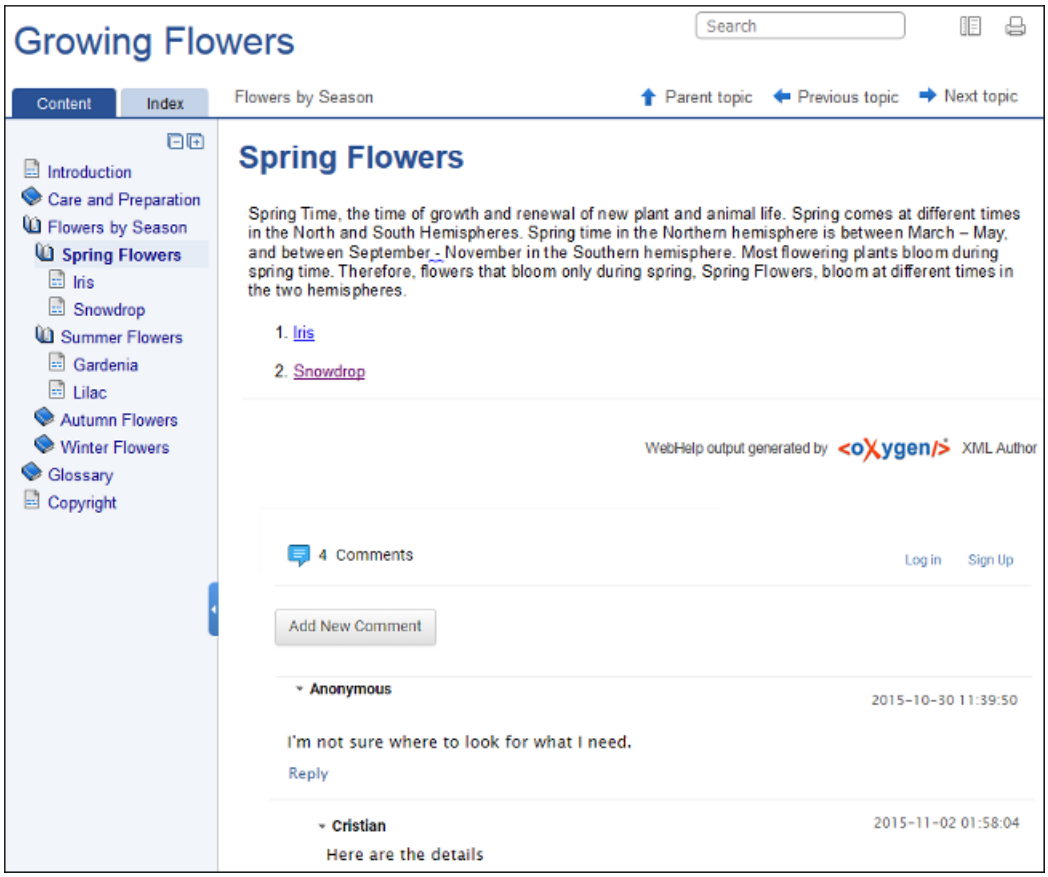


Figure 560: WebHelp Classic with Feedback Comments Section

To add a new comment, click the **Add New Comment** button, or click **Reply** to add a comment to an existing thread. You can click on the **Log in** button on the right side of this bar to be authenticated as a user and your user name will be included in any comments that you add. If you do not have a user name, you can click on the **Sign Up** button to create a new user.

After you log in, your name and user name are displayed in the **Comments** bar, along with the **Log off** and **Edit** buttons. Click the **Edit** button to open the **User Profile** dialog box where you can customize the following options:

- **Your Name** - You can use this field to edit the initial name that you used to create your user profile.
- **Your email address** - You can use this field to edit the initial email address that you used to create your profile.
- You can choose to receive an email in the following situations:
  - When a comment is left on a page that you commented on.
  - When a comment is left on any topic in the WebHelp Classic system.
  - When a reply is left to one of my comments.
- **New Password** - Allows you to enter a new password for your user account.

  Note: The **Current Password** field from the top of the **User Profile** is mandatory if you want to save the changes you make.

If you are an administrator, you can manage user information and comments. For more information, see Managing Users and Comments in a Feedback-Enabled System on page 1052.

WebHelp Classic Search Engine
Search Rules

Rules that are applied during a search include:

- You can use quotes to perform an exact search for multiple word phrases (for example, *"grow flowers"* will only return results if both words are found consecutively and exactly as they are typed in the search field). This type of search is known as a *phrase search*.

- *Boolean Search* is supported using the following operators: *and*, *or*, *not*. When there are two adjacent search terms without an operator, *or* is used as the default search operator (for example, *grow flowers* is the same as *grow or flowers*).
- The space character separates keywords (an expression such as *grow flowers* counts as two separate keywords: *grow* and *flowers*).
- `indexterm` and `keywords` DITA elements are an effective way to increase the ranking of a page (for example, content inside a *keywords* element weighs more than an *H1* HTML element).
- Words composed by merging two or more words with colon (":"), minus ("-"), underline ("_"), or dot (".") characters count as a single word.
- Your search terms should contain two or more characters (note that stop words will be ignored). This rule does not apply to CJK (Chinese, Japanese, Korean) languages.

5-Star Rating Mechanism and Sorting

The **Search** feature is also enhanced with a rating mechanism that computes scores for every result that matches the search criteria. These scores are then translated into a 5-star rating scheme and the stars are displayed to the right of each result. The search results are sorted depending on the following:

- Search entries that satisfy the phrase search criterion are presented first.
- The number of keywords found in a single page (the higher the number, the better).
- The context (for example, a word found in a title scores better than a word found in unformatted text). The search ranking order, sorted by relevance is as follows:
  - The search term is included in a meta keyword
  - The search term is in the title of the page
  - The search term is in bold text in a paragraph
  - The search term is in normal text in a paragraph

Excluded Terms

To improve performance, the **Search** feature excludes certain *stop words*. For example, the English version of such *stop words* include: *a, an, and, are, as, at, be, but, by, for, if, in, into, is, it, no, not, of, on, or, such, that, the, their, then, there, these, they, this, to, was, will, with*.

WebHelp Classic Search Results Tab

When you enter search terms in the **Search** field at the top of the help system, the results are displayed in the **Search Results** tab in the left section. When you click on a result in the **Search Results** tab, that result is displayed in the main pane with the search terms highlighted. If you press **Enter** with the **Search** field empty, the highlights are removed.

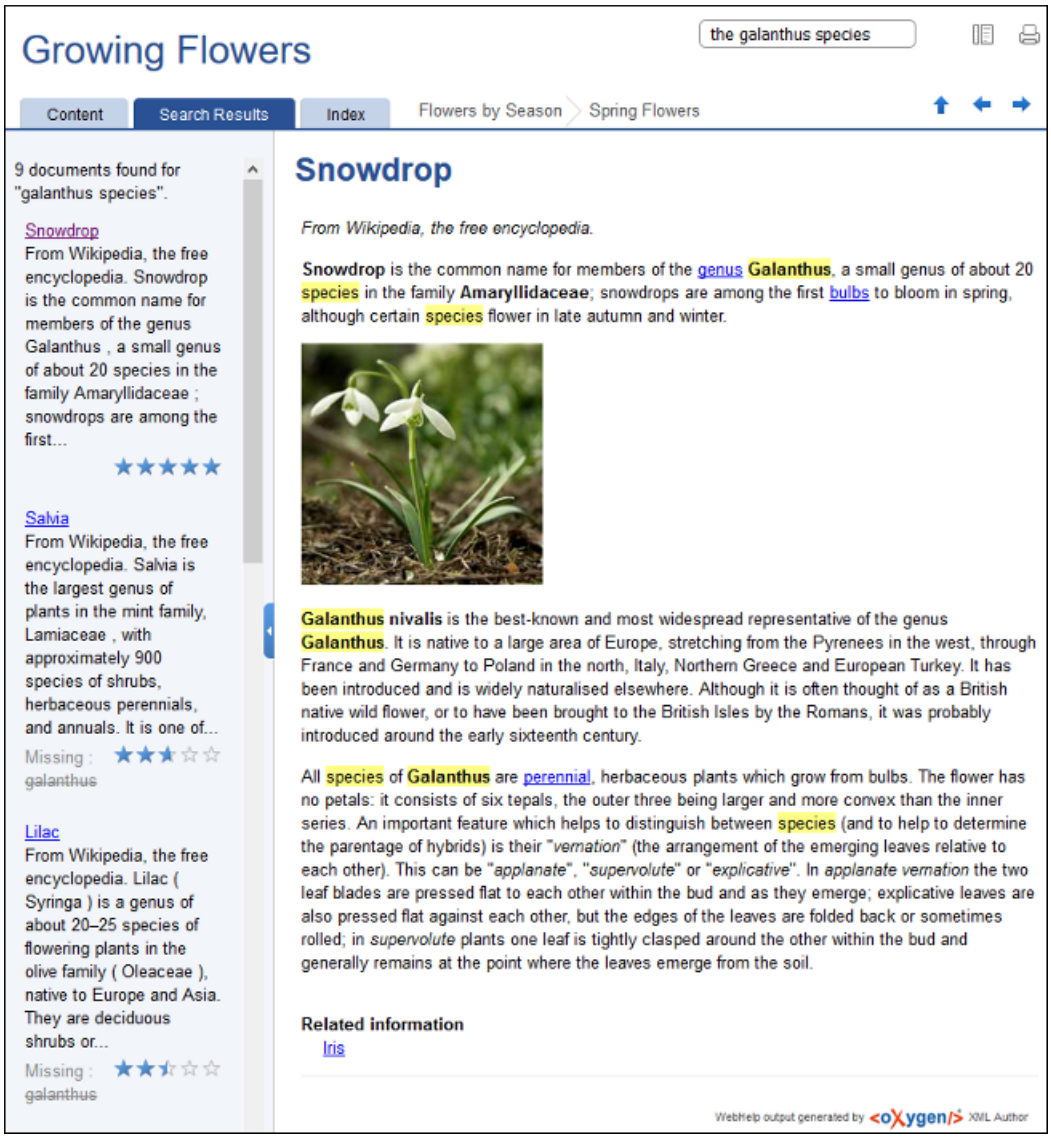


Figure 561: WebHelp Classic Search Results Tab

Missing Terms

If you enter multiple search terms (other than *stop words*), for any result that the search engine found at least one term but not one or more of the other terms, the **Missing** terms will be listed below each result.

Tag Element Scoring Values

HTML tag elements are also assigned a scoring value and these values are evaluated for the search results. For information about editing these values, see Changing Element Scoring in Search Results on page 1015.

Browser Compatibility

This output format is compatible with the most recent versions of the following common browsers:

- Edge
- Internet Explorer (IE 10 or newer)
- Chrome
- Firefox
- Safari
- Opera

Important: Due to some security restrictions in certain browsers (Google Chrome and Internet Explorer), WebHelp Classic pages loaded from the local system (through URLs of the `file:///...` format) may not

work properly. We recommend that you load WebHelp Classic pages in Google Chrome or Internet Explorer only from a web server (with a URL such as `http://your.server.com/webhelp/index.html` or `http://localhost/web_pages/index.html`).

Warning: Due to some restrictions in web browsers in regards to JavaScript code, the *frameless* version (`index.html` start page) of the WebHelp Classic system should only be loaded from a web server (with a URL such as `http://your.server.com/webhelp/index.html` or `http://localhost/web_pages/index.html`). When loading WebHelp Classic pages from the local file system, the *frameset* version (`index_frames.html` start page) of the WebHelp Classic system should be used instead (`file:///...`).

Deploying a Feedback-Enabled System

System Requirements

The feedback-enabled WebHelp system requires a standard server deployment. You can request this from your server administrator and it requires the following system components:

- A Web server (such as *Apache Web Server*)
- A *MySQL* or *MariaDB* database server
- A database admin tool (such as *phpMyAdmin*)
- PHP Version 5.1.6 or later

The WebHelp system supports most of the recent versions of the following browsers: Chrome, Firefox, Edge, Internet Explorer, Safari, Opera.

Create WebHelp with Feedback Database

The **WebHelp with Feedback** system needs a database to store user details and the actual feedback, and a user added to it with all privileges. After this is created, you should have the following information:

- Database name
- Username
- Password

Exactly how you create the database and user depends on your web host and your particular needs.

Example:

The following procedure uses *phpMyAdmin* to create a MySQL database for the feedback system and a MySQL user with privileges for that database. The feedback system uses these credentials to connect to the database.

Using *phpMyAdmin* to create a database:

1. Access the *phpMyAdmin* instance running on your server.
2. Click *Databases* (in the right frame) and then create a *database*. You can give it any name you want (for example *comments*).
3. Create a user with connection privileges for this database.
4. Under *localhost*, in the right frame, click *Privileges* and then at the bottom of the page click the **reload the privileges** link.

Deploying the WebHelp with Feedback Output

If you have a web server configured with PHP and MySQL, you can deploy the **WebHelp with Feedback** output by following these steps:

1. Connect to your server using an FTP client.
2. Locate the home directory (from now on, referred to as *DOCUMENT_ROOT*) of your server.
3. Copy the transformation output folder into the `DOCUMENT_ROOT` folder.
4. Rename it to something relevant (for example, `myProductWebHelp`).
5. Open the output folder (for example, `http://[YOUR_SERVER]/myProductWebHelp/`). You are redirected to the installation wizard. Proceed with the installation as follows:
   a. Verify that the prerequisites are met.

b. Press **Start Installation**.
c. Configure the **Deployment Settings** section. Default values are provided, but you should adjust them as needed.

   Tip: You can change some of the options later. The installation creates a `config.php` file in `[OXYGEN_WEBHELP_INSTALL_DIR]/feedback/resources/php/config/config.php` where all your configuration options are stored.
d. Configure the **MySql Database Connection Settings** section. Use the information (database name, username, password) from the Create WebHelp with Feedback Database section to fill-in the appropriate text boxes.

   Warning: Selecting the **Create new database structure** option will overwrite any existing data in the selected database, if it already exists. Therefore, it is useful the first time you install the **WebHelp with Feedback** system, but you do not want to select this option on subsequent deployments.
e. If you are using a domain (such as *OpenLDAP* or *Active Directory*) to manage users in your organization, select the **Enable LDAP Autehntication** option. This will allow you to configure the LDAP server, which will provide information and credentials for users who will access the WebHelp system. Also, this will allow you to choose which of the domain users will have administrator privileges.
f. If the **Create new database structure** option is selected, the **Create WebHelp Administrator Account** section becomes available. Here you can set the administrator account data. The administrator is able to moderate new posts and manage WebHelp users.

   The same database can be used to store comments for multiple **WebHelp with Feedback** deployments. If a topic is available in multiple deployments and there are comments associated with it, you can choose to display the comments in all deployments that share the database. To do this, select the **Display comments from other products** option. In the **Display comments from** section, a list with the deployments sharing the same database is displayed. Select the deployments allowed to share common feedback.

   Note: You can restrict the displayed comments of a product depending on its version. If you have two products that use the same database and you restrict one of them to display comments starting from a certain version, the comments of the other product are also displayed from the specified version onwards.
g. Press **Next Step**.
h. Remove the installation folder from your web server.

   Important: When you publish subsequent iterations of your **WebHelp with Feedback** system, you will not upload the `/install` folder in the output, as you only need it uploaded the first time you create the installation. On subsequent uploads, you will just upload the other output files.
i. In your Web browser, go to your **WebHelp with Feedback** system main page.

Testing Your WebHelp with Feedback System

To test your system, create a user and post a comment. Check to see if the notification emails are delivered to your email inbox.

Note: To read debug messages generated by the system:

1. Enable *JavaScript* logging by doing one of the following:
   - Open the `log.js` file, locate the `var log= new Log(Level.NONE);` line, and change the logging level to: `Level.INFO`, `Level.DEBUG`, `Level.WARN`, or `Level.ERROR`.
   - Append `?log=true` to the WebHelp URL.
2. Inspect the PHP and Apache server log files.

Documentation Product ID and Version

When you run a **WebHelp with Feedback** transformation scenario, by default you are prompted for a documentation product ID and version number. This is needed when multiple WebHelp systems are deployed on the same server. Think of your WebHelp output as a *product*. If you have three different WebHelp outputs, you have three different *products* (each with their own unique documentation product ID). This identifier is included in a configuration file so that comments are tied to a particular output (product ID and version number).

Note: The **WebHelp with Feedback** installation includes a configuration option (**Display comments from other products**) that allows you to choose to have comments visible in other specified *products*.

Related Information:

Managing Users and Comments in a Feedback-Enabled System on page 1052

Refreshing the Content of a Feedback-Enabled System

It is common to update the content of an existing installation of a **WebHelp with Feedback** system on a regular basis. In this case, reinstalling the whole system is not a viable option since it might result in the loss of the comments associated with your topics. Also, reconfiguring the system every time you want to refresh it may be time consuming.

Fortunately, you can refresh just the content without losing the comments or the initial system configuration. To do so, follow these steps:

1. Execute the transformation scenario that produces the *WebHelp with Feedback* output directory.
2. Go to the output directory (specified in the **Output** tab of the transformation scenario), locate the `\feedback\resources\php\config\config.php` file, and delete it.
3. Locate the `\feedback\install` directory and delete it.
4. Copy the remaining structure of the output folder and paste it into your *WebHelp with Feedback* system installation directory, overwriting the existing content.

Managing Users and Comments in a Feedback-Enabled System

When you installed the **WebHelp with Feedback** system the first time (assuming the **Create new database structure** option was selected), you should have been prompted to create an administrator account (or a user named *administrator* was created by default). As an administrator, you have access to manage comments posted in your feedback-enabled WebHelp system. You can also manage the user information (such as role, status, or notification options).

To manage comments and user information, follow these steps:

1. At the bottom of each specific topic there is a **Comments** navigation bar and on the right side there is a **Log in** button. Click this button and log in with your administrator credentials. This gives you access to an **Admin Panel** button.
2. Click the **Admin Panel** button to display an administration page.

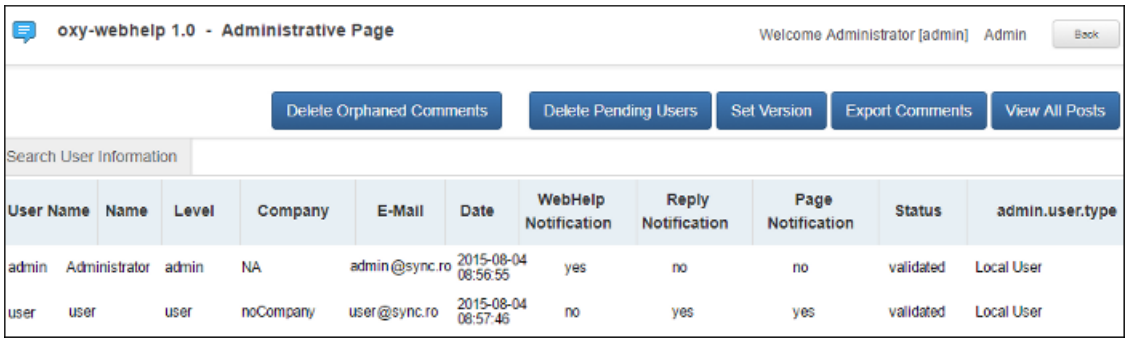


Figure 562: Administrative Page

3. Use this page to manage the following options:

Delete Orphaned Comments

Allows you to delete comments that are no longer associated with a topic in your WebHelp system.

Delete Pending Users

Allows you to delete user accounts that you do not wish to activate.

View All Posts

Allows you to view all the comments that are associated with topics in your WebHelp system.

Export Comments

Allows you to export all posts associated with topics in your WebHelp system into an XML file.

Set Version

Use this action to display comments starting with a particular version.

Manage User Information

To edit the details for a user, click on the corresponding row. This opens a window that allows you to customize the following information associated with the user:

Name

The full name of the user.

Level

Use this field to modify the privilege level (role) for the selected user. You can choose from the following:

- **User** - Regular user, able to post comments and receive e-mail notifications.
- **Moderator** - In addition to the regular **User** rights, this type of user has access to the **Admin Panel** where a moderator can view, delete, export comments, and set the version of the feedback-enabled WebHelp system.
- **Admin** - Full administrative privileges. Can manage WebHelp-specific settings, users, and their comments.

Company

The name of the organization associated with the user.

E-Mail

The contact email address for the user. This is also the address where the WebHelp system sends notifications.

WebHelp Notification

When selected, the user receives notifications when comments are posted anywhere in your feedback-enabled WebHelp system.

Reply Notification

When selected, the user receives notifications when comments are posted as a reply to one of their comments.

Page Notification

When selected, the user receives notifications when comments are posted on a topic where they previously posted a comment.

Date

The date the user registered is displayed.

Status

Use this drop-down list to change the status of the user. You can choose from the following:

- **Created** - The user is created but does not yet have any rights for the feedback-enabled WebHelp system.
- **Validated** - The user is able to use the feedback-enabled WebHelp system.
- **Suspended** - The user has no rights for the feedback-enabled WebHelp system.

Warning: The key used for identifying the page a comment is attached to is the relative file path to the output page. Since the output file and folder names mirror the source, any change to the file name (or its folder) in the source will affect the comments associated with that WebHelp page. If you change the file name or path, the comment history for that topic will become orphaned (a change to the topic ID does not affect the comment history).

Context-Sensitive WebHelp Classic System

Context-sensitive help systems assist users by providing specific informational topics for certain components of a user interface, such as a button or window. This mechanism works based on mappings between a unique ID defined in the topic and a corresponding HTML page.

Generating Context-Sensitive Help

When WebHelp Classic output is generated, the transformation process produces an XML mapping file called `context-help-map.xml` and copies it in the output folder of the transformation. This XML file maps an ID to a corresponding HTML page through an `appContext` element, as in the following example:

```
<map productID="oxy-webhelp" productVersion="1.1">
  <appContext helpID="myapp-functionid1" path="tasks/app-help1.html"/>
  <appContext helpID="myapp-functionid2" path="tasks/app-help1.html"/>
    . . .
</map>
```

The possible attributes are as follows:

`helpID`

A Unique ID provided by a topic from two possible sources (`resourceid` element or the `id` attribute that is set on the topic root element):

`resourceid`

The `resourceid` element is mapped into the `appContext` element and can be specified in either the `topicref` within a *DITA map* or in a `prolog` within a DITA topic. The `resourceid` element accepts the following attributes:

- **`appname`** - A name for the external application that references the topic. If this attribute is not specified, its value is considered to be empty (" ").
- **`appid`** - An ID used by an application to identify the topic.
- **`id`** - Specifies a value that is used by a specific application to identify the topic, but this attribute is ignored if an **`appid`** attribute is used. Also, starting with DITA 1.3, the **`id`** attribute was deprecated in favor of the **`appid`** attribute.

Note: Multiple `appid` values can be associated with a single `appname` value (and multiple `appname` values can be associated with a single `appid` value), but the values for both attributes work in combination to specify a specific ID for a specific application, and therefore each combination of values for the `appid` and `appname` attributes should be unique within the context of a single *root map*. For example, suppose that you need two different functions of an application to both open the same WebHelp page.

Example: `resourceid` Specified in a DITA Map

The `resourceid` element can be specified in a `topicmeta` element within a `topicref`.

```
<map title="App Help">
  <topicref href="app-help1.dita" type="task">
     <topicmeta>
       <resourceid appname="myapp" appid="functionid1"/>
       <resourceid appname="myapp" appid="functionid2"/>
     </topicmeta>
  </topicref>
</map>
```

Example: `resourceid` Specified in a DITA Topic

The `resourceid` element can be specified in a `prolog` element within a DITA topic.

```
<task id="app-help1">
  <title>My App Help</title>
  <prolog>
    <resourceid appname="myapp" appid="functionid1"/>
    <resourceid appname="myapp" appid="functionid2"/>
  </prolog>
...
</task>
```

For more information about the `resourceid` element, see DITA Specifications: <resourceid>.

`id`

If a `resourceid` element is not declared in the *DITA map* or DITA topic (as described above), the `id` attribute that is set on the topic root element is mapped into the `appContext` element.

Important: You should ensure that these defined IDs are unique in the context of the entire DITA project. If the IDs are not unique, the transformation scenario will display warning messages in the transformation console output and the help system will not work properly.

`path`

The path to a corresponding WebHelp page. This path is relative to the location of the `context-help-map.xml` mapping file.

`productID` (Applicable only if you are using the WebHelp Classic with Feedback transformation scenario)

The ID of the product for your documentation project.

`productVersion` (Applicable only if you are using the WebHelp Classic with Feedback transformation scenario)

The version of the product for your documentation project.

There are two ways of implementing context-sensitive help in your system:

- The XML mapping file can be loaded by a PHP script on the server side. The script receives the `contextId` value and will look it up in the XML file.
- Invoke one of the WebHelp system files `index.html` or `index_frames.html` and pass the `contextId` parameter with a specific value. The WebHelp system will automatically open the help page associated with the value of the `contextId` parameter.

  Note: The `contextId` parameter is not case sensitive.

The following example will open a *frameless* version of the WebHelp system showing the page associated with the ID `dialog1ID`:

```
index.html?contextId=dialog1ID
```

The following example will open a *frameset* version of the WebHelp system showing the page associated with the ID `view1ID`:

```
index_frames.html?contextId=view1ID
```

Tip: You can use an *anchor* in the `contextId` parameter to jump to a specific section in a document. For example, `contextId=topicID#anchor`.

Context-Sensitive Queries

You can use the URL field in your browser to search for topics in a context-sensitive WebHelp system with the assistance of the following parameters:

- **contextId** - The WebHelp JavaScript engine will look for this value in the `context-help-map.xml` mapping file and load the corresponding help page.

  Note: You can use an *anchor* in the `contextId` parameter to jump to a specific section in a document. For example, `contextId=topicID#anchor`.
- **appname** - You can use this parameter in conjunction with `contextId` to search for this value in the corresponding *appname* attribute value in the mapping file.

  ```
  http://localhost/webhelp/index.html?contextId=topicID&appname=myApplication
  ```

Generating WebHelp Classic Output for DITA

The publishing process can be initiated from a transformation scenario within **Oxygen XML Editor/Author**, from a command line outside **Oxygen XML Editor/Author**, or from an integration server.

Running from Oxygen XML Editor/Author

To publish DITA content to WebHelp Classic output from a transformation scenario inside **Oxygen XML Editor/Author**, use one of the following procedures, depending on whether or not you want a feedback section in your output.

WebHelp Classic Output

To publish a *DITA map* as a **WebHelp Classic** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - **Templates Tab** - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - **Parameters Tab** - This tab includes numerous transformation parameters that can be set to customize your WebHelp system output.
   - **Filters Tab** - This tab allows you to filter certain content elements from the generated output.
   - **Advanced Tab** - This tab allows you to specify some advanced options for the transformation scenario.
   - **Output Tab** - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to process the transformation.

   When the **DITA Map WebHelp Classic** transformation is complete, the output is automatically opened in your default browser.

To further customize this transformation, you can edit various parameters, including the following most commonly used ones:

WebHelp Classic with Feedback Output

To publish a *DITA map* as a **WebHelp Classic with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - **Templates Tab** - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - **Parameters Tab** - This tab includes numerous transformation parameters that can be set to customize your WebHelp system output.
   - **Filters Tab** - This tab allows you to filter certain content elements from the generated output.
   - **Advanced Tab** - This tab allows you to specify some advanced options for the transformation scenario.
   - **Output Tab** - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Classic with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

For more information about the feedback-enabled WebHelp system, watch our video demonstration:

https://www.youtube.com/embed/eoQ2uxHvppE

Running from Command Line

To publish to the **WebHelp Classic** output from a command line outside of **Oxygen XML Editor/Author**, you can use the `dita` startup script that comes bundled with *DITA Open Toolkit* distribution.

Required Arguments for the *dita* Command Startup Script:

`DITA-OT-DIR on page 1622\bin\[executable] -i [path_to_input.ditamap] -f [transformation_type]`

executable

Windows - The `dita.bat` script located in: `DITA-OT-DIR on page 1622\bin\`.

Linux/Mac OS X - The `dita` script file located in: `DITA-OT-DIR on page 1622/bin/`.

-i / -input

Specifies the master file for your DITA documentation project. Typically this is a DITA map.

-f / -format

Specifies the transformation type. The **Oxygen XML WebHelp Plugin** contributes the following transformation types for DITA:

- **webhelp** - The transformation that produces **WebHelp Classic** output for desktop.
- **webhelp-feedback** - The transformation that produces feedback-enabled **WebHelp Classic with Feedback** for desktop.

Additional Options or Parameters:

You can also use DITA-OT options to modify the command behavior or additional configuration parameters that are contributed by the **Oxygen XML WebHelp Plugin**.

`DITA-OT-DIR on page 1622\bin\[executable] -i [path_to_input.ditamap] -f [transformation_type] [option] -D[parameter=value]`

Command Line Examples:

- **Windows:** `dita.bat -i c:\mySample.ditamap -f webhelp-responsive -o c:\output -Dwebhelp.logo.image=C:\images\myLogo.jpg`
- **Linux/Mac OS X:** `dita -i C:/mySample.ditamap -f webhelp-responsive -o C:/output -Dwebhelp.logo.image=C:/images/myLogo.jpg`

Additional WebHelp Parameters for DITA

You can append the following parameters to the command line that runs the transformation:

`-Dwebhelp.copyright` (not available for WebHelp Responsive systems)

Adds a small copyright text that appears at the end of the **Table of Contents** pane.

`-Dwebhelp.custom.resources`

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

`-Dwebhelp.favicon`

The file path that points to an image to be used as a *favicon* in the WebHelp output.

`-Dwebhelp.footer.file` (not available for WebHelp Responsive systems)

Path to an XML file that includes the footer content for your WebHelp output pages. You can use this parameter to integrate social media features (such as widgets for Facebook™, Twitter™, Google Analytics, or Google+™). The file must be well-formed, each widget must be in separate `div` or `span` element, and the code for each `script` element is included in an XML comment (also, the start and end tags for the XML comment must be on a separate line). The following code exert is an example for adding a Facebook™ widget:

```
<div id="facebook">
  <div id="fb-root"/>
  <script>
    <!-- (function(d, s, id) { var js, fjs = d.getElementsByTagName(s)[0];
      if (d.getElementById(id)) return;
      js = d.createElement(s); js.id = id;
      js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
      fjs.parentNode.insertBefore(js, fjs); }
       (document, 'script', 'facebook-jssdk')); -->
    </script>
    <div data-share="true" data-show-faces="true" data-action="like"
       data-layout="standard" class="fb-like"/>
</div>
```

-Dwebhelp.footer.include (not available for WebHelp Responsive systems)

Specifies whether or not to include footer in each WebHelp page. Possible values: `yes`, no. If set to no, no footer is added to the WebHelp pages. If set to `yes` and the `webhelp.footer.file` parameter has a value, then the content of that file is used as footer. If the `webhelp.footer.file` has no value then a default **Oxygen** footer is inserted in each WebHelp page.

-Dwebhelp.google.search.results

A file path that specifies the location of a well-formed XHTML file containing the Google Custom Search Engine element `gcse:searchresults-only`. You can use all supported attributes for this element. It is recommend to set the `linkTarget` attribute to `frm` for frameless (*iframe*) version of WebHelp or to `contentWin` for the frameset version of WebHelp. The default value for this attribute is `_blank` and the search results will be loaded in a new window. If this parameter is not specified, the following code will be used `<gcse:searchresults-only linkTarget="frm"></gcse:searchresults-only>`

-Dwebhelp.google.search.script

A file path that specifies the location of a well-formed XHTML file containing the Custom Search Engine script from Google.

-Dwebhelp.logo.image.target.url

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

-Dwebhelp.logo.image

Specifies a path to an image displayed as a logo in the left side of the output header.

-Dwebhelp.product.id (available only for Feedback-enabled systems)

This parameter specifies a short name for the documentation target, or product (for example, `mobile-phone-user-guide`, `hvac-installation-guide`).

Note: You can deploy documentation for multiple products on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

-Dwebhelp.product.version (available only for Feedback-enabled systems)

Specifies the documentation version number (for example, 1.0, 2.5, etc.). New user comments are bound to this version.

Note: Multiple documentation versions can be deployed on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

-Dwebhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

-Dwebhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

-Dwebhelp.show.changes.and.comments

When set to `yes`, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

-Dwebhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

-Dwebhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq`

element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

`-Dwebhelp.sitemap.priority`

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

`-Dwebhelp.skin.css` (available only for WebHelp Classic and WebHelp Classic with Feedback systems)

Path to a CSS file that sets the style theme in the WebHelp Classic output. It can be one of the predefined skin CSS from the *`DITA-OT-DIR`*`/plugins/com.oxygenxml.webhelp.classic/predefined-skins` directory, or it can be a custom skin CSS generated with the Oxygen Skin Builder web application.

Parameters Specific to WebHelp Responsive Output (available only for WebHelp Responsive and WebHelp Responsive with Feedback systems)

`-Dwebhelp.default.collection.type.sequence`

Specifies if the **sequence** value will be used by default when the `collection-type` attribute is not specified. This option is helpful if you want to have *Next* and *Previous* navigational buttons generated for all HTML pages. Allowed values are **no** (default) and **yes**.

`-Dwebhelp.enable.search.autocomplete`

Specifies if the *Autocomplete* feature is enabled in the WebHelp search text field. The default value is `yes`.

`-Dwebhelp.fragment.after.body`

In the generated output it displays a given XHTML fragment after the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.after.logo_and_title`

In the generated output it displays a given XHTML fragment after the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.after.main.page.search`

In the generated output it displays a given XHTML fragment after the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.after.toc_or_tiles`

In the generated output it displays a given XHTML fragment after the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.after.top_menu`

In the generated output it displays a given XHTML fragment after the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.before.body`

In the generated output it displays a given XHTML fragment before the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.before.logo_and_title`

In the generated output it displays a given XHTML fragment before the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.before.main.page.search`

In the generated output it displays a given XHTML fragment before the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.before.toc_or_tiles`

In the generated output it displays a given XHTML fragment before the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

`-Dwebhelp.fragment.before.top_menu`

In the generated output it displays a given XHTML fragment before the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

-Dwebhelp.fragment.footer

In the generated output it displays a given XHTML fragment as the page footer. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

-Dwebhelp.fragment.head

In the generated output it inserts a given XHTML fragment in the <head> element. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

-Dwebhelp.fragment.welcome

In the generated output it displays a given XHTML fragment as a welcome message (or title). The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

-Dwebhelp.merge.nested.topics.related.links

Specifies if the related links from nested topics will be merged with the links in the parent topic. Thus the links will be moved from the topic content to the related links component and all of the links from the same group (for example, *Related Tasks*, *Related References*, *Related Information*) are merged into a single group. The default value is yes.

-Dwebhelp.publishing.template.descriptor

Specifies the name of the descriptor to be loaded from the WebHelp Responsive template package. If it is not specified, the first encountered descriptor will be automatically loaded.

-Dwebhelp.publishing.template

Specifies the path to the ZIP archive (or root folder) that contains your custom WebHelp Responsive template.

-Dwebhelp.search.enable.pagination

Specifies whether or not search results will be displayed on multiple pages. Allowed values are yes or no.

-Dwebhelp.search.page.numberOfItems

Specifies the number of search results items displayed on each page. This parameter is only used when the **webhelp.search.enable.pagination** parameter is enabled.

-Dwebhelp.show.breadcrumb

Specifies if the breadcrumb component will be presented in the output. The default value is yes.

-Dwebhelp.show.child.links

Specifies if child links will be generated in the output for all topics that have subtopics. The default value is no.

-Dwebhelp.show.indexterms.link

Specifies if an icon that links to the index will be presented in the output. The default value is yes.

-Dwebhelp.show.main.page.tiles

Specifies if the tiles component will be presented in the main page of the output. For a *tree* style layout, this parameter should be set to no.

-Dwebhelp.show.main.page.toc

Specifies if the table of contents will be presented in the main page of the output. The default value is yes.

-Dwebhelp.show.navigation.links

Specifies if navigation links will be presented in the output. The default value is yes.

-Dwebhelp.show.print.link

Specifies if a print link or icon will be presented within each topic in the output. The default value is yes.

-Dwebhelp.show.publication.toc

Specifies if a table of contents will be presented on the left side of each topic in the output. The default value is yes.

-Dwebhelp.show.topic.toc

Specifies if a topic table of contents will be presented on the right side of each topic in the output. This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted. The default value is yes.

-Dwebhelp.show.top.menu

Specifies if a menu will be presented at the topic of the main page in the output. The default value is `yes`.

-Dwebhelp.publication.toc.hide.chunked.topics

Specifies if the table of contents will contain links for *chunked* topics. The default value is `yes`.

-Dwebhelp.publication.toc.links

Specifies which links will be included in the table of contents. The possible values are:

- **chapter** (default) - The TOC will include links for the current topic, its children, its siblings, and its direct ancestor (including the direct ancestor's siblings), and the parent chapter.
- **topic** - The TOC will only include links for the current topic and its direct children.
- **all** - The TOC will include all links.

-Dwebhelp.publication.toc.tooltip.position

By default, if a topic contains a `shortdesc` element, its content is displayed in a tooltip when the user hovers over its link in the table of contents. This parameter controls whether or not this tooltip is displayed and its position relative to the link. The possible values are:

- **left** (default)
- **right**
- **top**
- **bottom**
- **hidden** - The tooltip will not be displayed.

-Dwebhelp.top.menu.depth

Specifies the maximum depth level of the topics that will be included in the top menu. The default value is `3`. A value of `0` means that the menu has unlimited depth.

-Dwebhelp.topic.collapsible.elements.initial.state

Specifies the initial state of collapsible elements (tables with titles, nested topics with titles, sections with titles, index term groups). The possible values are `collapsed` or `expanded` (default value).

Note: Note that the `fix.external.refs.com.oxygenxml` parameter is not supported. This parameter is normally used to specify whether or not the application tries to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references.

Further Customization

If you need to further customize the transformation process, you can append other DITA-OT parameters as well. Any parameter that you want to append must follow the `-D` model of the above parameters. For example, to append the `args.csspath` parameter, use:

```
-Dargs.csspath=[CSS_FILE_PATH]
```

where `[CSS_FILE_PATH]` is the location of the directory that contains the CSS file.

Related Information:

DITA-OT Parameter Reference

Running from an Integration Server

Oxygen XML Editor plugin can be processed from an automatic publishing system, such as *Jenkins* or *Travis*.

Automating DITA to WebHelp Output with Jenkins

To integrate WebHelp output with the Jenkins continuous integration tool, follow these steps:

1. Create a Maven project to incorporate the DITA-OT that already integrates Oxygen XML Editor plugin.
2. Go to the root of your Maven project and edit the `pom.xml` file to include the following fragment:

```
<properties>
  <oxygen-webhelp>${basedir}/tools/DITA-OT2.5.2/
       plugins/com.oxygenxml.webhelp.responsive</oxygen-webhelp>
</properties>
```

```
<plugin>
  <artifactId>exec-maven-plugin</artifactId>
  <groupId>org.codehaus.mojo</groupId>
  <executions>
    <execution><!-- Run our version calculation script -->
      <id>Version Calculation</id>
      <phase>generate-sources</phase>
      <goals>
        <goal>exec</goal>
      </goals>
      <configuration>
        <executable>${oxygen-webhelp}/ditaWebhelp.bat</executable>
      </configuration>
    </execution>
  </executions>
</plugin>
```

Note: In the fragment above it is assumed that you are using DITA-OT version 2.5.4. If you are using another version, please adjust the path accordingly.

3. Go to the Jenkins top page and create a new Jenkins job. Configure this job to suit your particular requirements, such as the build frequency and location of the Maven project.

Automating DITA to WebHelp Output with Travis CI

This topic assumes you have a DITA project hosted on a GitHub public or private repository.

The goal of this tutorial is to help you setup a Travis continuous integration job that automatically publishes your DITA project to GitHub pages after every commit. The published website will contain a feedback link on each page that would allow a contributor to easily suggest changes to the documentation by creating a pull request on GitHub with just a few clicks.

Enable the Travis CI Build

1. Sign in to Travis CI with your GitHub account, accepting the GitHub access permissions confirmation.
2. Once you are signed in, and you have synchronized your GitHub repositories, go to your profile page and enable Travis CI for the repository you want to build.

Configure the Travis CI Build in your GitHub Project

1. Checkout your GitHub project locally.
2. Copy the `.travis` folder from here to the root directory of your project.
3. In the root of your GitHub project, add a file called `.travis.yml` with the following content:

```
language: dita
install:
  - echo "Installed"
script:
  - sh .travis/publish.sh
after_success:
  - sh .travis/deploy.sh
env:
  global:
    - DITAMAP=/path/to/your/ditamap/file
    - DITAVAL=/path/to/your/ditaval/file
    - ANT_OPTS=-Xmx1024M
```

Note: Replace `/path/to/your/ditamap/file` and `/path/to/your/ditaval/file` with the appropriate paths to your *DITA map* and `ditaval` files.

4. Create a GitHub personal access token by following this procedure.
5. Define an environment variable in the repository settings that has the name `GH_TOKEN` and the value equal with the GitHub personal access token created earlier.

Register Your License Key

1. Edit your `.gitignore` file (or create it if it does not already exist) and add the following line:

```
licenseKey.txt
```

2. Copy your WebHelp license to the root of your GitHub project in a file called `licenseKey.txt`.

   Important: The `licenseKey.txt` file should not be committed to GitHub as it contains a license key that is issued only to you.

3. Encrypt the license key file and **add** it to the `.travis.yml` configuration file. This way only the Travis CI server will be able to decrypt it during the build process.

Commit to GitHub

1. Commit the following files and folders and push the commit to GitHub:

```
git add .gitignore licenseKey.txt.enc .travis.yml .travis/
git commit -m "Set up the Travis CI publishing system"
git push
```

2. Create a `gh-pages` branch in your GitHub project where the WebHelp output will be published. You can follow the procedure here.

Generating WebHelp Classic Output for DocBook

The publishing process can be initiated from a transformation scenario within **Oxygen XML Editor/Author** or from a command line outside **Oxygen XML Editor/Author**.

Running from Oxygen XML Editor/Author

To publish DocBook content to WebHelp Classic output from a transformation scenario inside **Oxygen XML Editor/Author**, use one of the following procedures, depending on whether or not you want a feedback section in your output.

WebHelp Classic Output

To publish a DocBook document as a **WebHelp Classic** system, follow these steps:

1. Click the **Configure Transformation Scenario(s)** action from the toolbar.
2. Select the **DocBook WebHelp Classic** scenario from the **DocBook 4** or **DocBook 5** section.
3. Click **Apply associated**.

   When the **DocBook WebHelp Classic** transformation is complete, the output is automatically opened in your default browser.

WebHelp Classic with Feedback Output

To publish a DocBook document as a **WebHelp Classic with Feedback** system, follow these steps:

1. Click **Configure Transformation Scenarios**.
2. Select the **DocBook WebHelp Classic with Feedback** scenario from the **DocBook 4** or **DocBook 5** section.
3. Click **Apply associated**.
4. Enter the documentation product ID and the documentation version.

   When the **DocBook WebHelp Classic with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment. For more information, see Deploying a Feedback-Enabled System on page 1050.

For more information about the feedback-enabled WebHelp system, watch our video demonstration:

https://www.youtube.com/embed/eoQ2uxHvppE

Running from Command Line

To run a DocBook to WebHelp transformation outside of **Oxygen XML Editor/Author**, use the following script file:

- **Windows** - `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\docbook.bat`
- **Linux/Mac OS X** - `[DocBook XSL directory]/com.oxygenxml.webhelp.classic/docbook.sh`

Before running the script to generate output, you must customize it to specify various paths and transformation type. To do this, open the script file and edit the following variables:

- **JVM_INSTALL_DIR** - Specifies the path to the Java Virtual Machine installation directory on your disk.
- **ANT_INSTALL_DIR** - Specifies the path to the installation directory of Ant.

- **SAXON_6_DIR** - Specifies the path to the installation directory of Saxon 6.5.5.
- **SAXON_9_DIR** - Specifies the path to the installation directory of Saxon 9.1.0.8.
- **DOCBOOK_XSL_DIR** - Specifies the path to the installation directory of the DocBook XSL distribution.
- **TRANSTYPE** - Specifies the type of the transformation you want to apply. The **Oxygen XML WebHelp Plugin** contributes the following transformation types for DocBook:
  - **webhelp** - The transformation that produces **WebHelp Classic** output for desktop.
  - **webhelp-feedback** - The transformation that produces feedback-enabled **WebHelp Classic with Feedback** for desktop.
- **INPUT_DIR** - Specifies the path to the input directory, containing the input XML file.
- **XML_INPUT_FILE** - Specifies the name of the input XML file.
- **OUTPUT_DIR** - Specifies the path to the output directory where the transformation output is generated.
- **DOCBOOK_XSL_DIR_URL** - Specifies the path to the directory of the DocBook XSL distribution in URL format.

You can also add additional configuration parameters that are contributed by the **Oxygen XML WebHelp Plugin**.

Additional WebHelp Parameters for DocBook

You can use various parameters in the command line to customize the transformation. Some of the most commonly used parameters include:

`-Dargs.default.language`

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

`-Dclean.output`

Deletes all files from the output folder before the transformation is performed (only `no` and `yes` values are valid and the default value is `no`).

`-Dl10n.gentext.default.language`

This parameter is used to identify the correct stemmer that differs from language to language. For example, for English the value of this parameter is `en` or for French it is `fr`, and so on.

`-Duse.stemming`

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

`-Dwebhelp.copyright`

Adds a small copyright text that appears at the end of the **Table of Contents** pane.

`-Dwebhelp.custom.resources`

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

`-Dwebhelp.favicon`

The file path that points to an image to be used as a *favicon* in the WebHelp output.

`-Dwebhelp.footer.file`

Path to an XML file that includes the footer content for your WebHelp output pages. You can use this parameter to integrate social media features (such as widgets for Facebook™, Twitter™, Google Analytics, or Google+™). The file must be well-formed, each widget must be in separate `div` or `span` element, and the code for each `script` element is included in an XML comment (also, the start and end tags for the XML comment must be on a separate line). The following code exert is an example for adding a Facebook™ widget:

```
<div id="facebook">
  <div id="fb-root"/>
  <script>
    <!-- (function(d, s, id) { var js, fjs = d.getElementsByTagName(s)[0];
      if (d.getElementById(id)) return;
      js = d.createElement(s); js.id = id;
      js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
      fjs.parentNode.insertBefore(js, fjs); }
       (document, 'script', 'facebook-jssdk')); -->
    </script>
    <div data-share="true" data-show-faces="true" data-action="like"
       data-layout="standard" class="fb-like"/>
</div>
```

-Dwebhelp.footer.include

Specifies whether or not to include footer in each WebHelp page. Possible values: `yes`, no. If set to no, no footer is added to the WebHelp pages. If set to `yes` and the `webhelp.footer.file` parameter has a value, then the content of that file is used as footer. If the `webhelp.footer.file` has no value then a default **Oxygen** footer is inserted in each WebHelp page.

-Dwebhelp.logo.image.target.url

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

-Dwebhelp.logo.image

Specifies a path to an image displayed as a logo in the left side of the output header.

-Dwebhelp.product.id (available only for Feedback-enabled systems)

This parameter specifies a short name for the documentation target, or product (for example, `mobile-phone-user-guide`, `hvac-installation-guide`).

Note: You can deploy documentation for multiple products on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

-Dwebhelp.product.version (available only for Feedback-enabled systems)

Specifies the documentation version number (for example, 1.0, 2.5, etc.). New user comments are bound to this version.

Note: Multiple documentation versions can be deployed on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

-Dwebhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

-Dwebhelp.skin.css

Path to a CSS file that sets the style theme in the WebHelp Classic output. It can be one of the predefined skin CSS from the `OXYGEN_INSTALL_DIR\frameworks\docbook\xsl\com.oxygenxml.webhelp.classic\predefined-skins` directory, or it can be a custom skin CSS generated with the Oxygen Skin Builder web application.

If you need to further customize your transformation, other DocBook XSL parameters can be appended. Any parameter that you want to append must follow the `-D` model of the above parameters. For example, you can append the `html.stylesheet` parameter in the following form:

```
-Dhtml.stylesheet=/path/to/directory/of/stylesheet.css
```

Customizing WebHelp Classic Output

Oxygen XML WebHelp provides support for customizing the **WebHelp Classic** output to suit your specific needs. The **WebHelp Classic** type of output is designed for desktop systems and features a familiar *tri-pane* layout. You can use this system to publish DITA and DocBook document types. The **WebHelp Classic with Feedback** variant allows your users to add comments to your output.

To change the overall appearance of the **WebHelp Classic** output, you can use the visual WebHelp Skin Builder tool, which does not require knowledge of CSS language. If you are familiar with CSS and coding, you can style your WebHelp output through your own custom stylesheets. You can also customize your output by modifying option and parameters in the transformation scenario.

This section includes topics that explain various ways to customize your WebHelp system output, such as how to improve the appearance of the Table of Contents, add logo images in the title area, integrate with social media, add custom headers and footers, and much more.

Adding Custom HTML Content in WebHelp Classic Output

You can add custom HTML content in the WebHelp Classic output by inserting it in a well-formed XML file that will be referenced in the transformation. This content may include references to additional JavaScript, CSS, and other types of resources, or such resources can be inserted inline within the HTML content that is inserted in the XML file.

Using Oxygen XML Editor/Author

To include custom HTML content in the WebHelp Classic output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Insert the HTML content in a well-formed XML file considering the following notes:
   - **Well-Formedness** - If the file is not a *Well-formed XML* document (or fragments are not well-formed), the transformation will fail.

     A common use case is if you want to include several `script` or `link` elements. In this case, the XML fragment has multiple root elements and to make it well-formed, you can wrap it in an `html` element. This element tag will be filtered out and only its children will be copied to the output documents. Similarly, you can wrap your content in `head`, `body`, `html/head`, or `html/body` elements.
   - **Referencing Resources in the XML File** - You can include references to local resources (such as JavaScript or CSS files) by using the predefined `${oxygen-webhelp-output-dir}` macro to specify their paths relative to the output directory:

     ```
     <html>
       <script type="text/javascript" src="${oxygen-webhelp-output-dir}/js/test.js"/>
       <link rel="stylesheet" type="text/css"
             href="${oxygen-webhelp-output-dir}/css/test.css" />
     </html>
     ```

     To copy the referenced resources to the output directory, follow the procedure in: Copying Additional Resources to Output Directory.
   - **Inline JavaScript or CSS Content** - If you want to include inline JavaScript or CSS content in the XML file, it is important to place this content inside an XML comment, as in the following examples:

     JavaScript:

     ```
     <script type="text/javascript">
       <!--
         /* Include JavaScript code here. */

         function myFunction() {
           return true;
         }
       -->
     </script>
     ```

     CSS:

     ```
     <style>
       <!--
         /* Include CSS style rules here. */

         *{
           color:red
         }
       -->
     </style>
     ```
2. Edit the WebHelp Classic transformation scenario.
3. Go to the **Parameters** tab.
4. Edit the value of the `webhelp.head.script` parameter and set it to reference the URL of the XML file created in step 1. Your additional content will be included at the end of the `head` element of your output document.

   Note: If you want to include the content in the `body` element, use the `webhelp.body.script` parameter instead.
5. Click **OK** to save the changes and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To include custom HTML content in the WebHelp Classic output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Insert the HTML content in a well-formed XML file considering the following notes:
   - **Well-Formedness** - If the file is not a *Well-formed XML* document (or fragments are not well-formed), the transformation will fail.

     A common use case is if you want to include several `script` or `link` elements. In this case, the XML fragment has multiple root elements and to make it well-formed, you can wrap it in an `html` element. This element tag will be filtered out and only its children will be copied to the output documents. Similarly, you can wrap your content in `head`, `body`, `html/head`, or `html/body` elements.
   - **Referencing Resources in the XML File** - You can include references to local resources (such as JavaScript or CSS files) by using the predefined `${oxygen-webhelp-output-dir}` macro to specify their paths relative to the output directory:

     ```
     <html>
       <script type="text/javascript" src="${oxygen-webhelp-output-dir}/js/test.js"/>
       <link rel="stylesheet" type="text/css"
             href="${oxygen-webhelp-output-dir}/css/test.css" />
     </html>
     ```

     To copy the referenced resources to the output directory, follow the procedure in: Copying Additional Resources to Output Directory.
   - **Inline JavaScript or CSS Content** - If you want to include inline JavaScript or CSS content in the XML file, it is important to place this content inside an XML comment, as in the following examples:

     JavaScript:

     ```
     <script type="text/javascript">
       <!--
         /* Include JavaScript code here. */

         function myFunction() {
           return true;
         }
       -->
     </script>
     ```

     CSS:

     ```
     <style>
       <!--
         /* Include CSS style rules here. */

         *{
           color:red
         }
       -->
     </style>
     ```
2. Use the `webhelp.head.script` parameter in your transformation script and set its value to reference the URL of the XML file created in step 1. Your additional content will be included at the end of the `head` element of your output document.

   Note: If you want to include the content in the `body` element, use the `webhelp.body.script` parameter instead.
3. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

```
dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.head.script=c:\myFile.xml
```

- **Mac OS X/ Linux:**

```
dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.head.script=C:/myFile.xml
```

Related Information:

Copying Additional Resources to Output Directory

Adding a Favicon in WebHelp Systems

You can add a custom *favicon* to your WebHelp output by simply using a parameter in the transformation scenario to point to your *favicon* image. This is available for DITA and DocBook WebHelp output using **WebHelp Classic** or **WebHelp Classic with Feedback** transformations.

Using Oxygen XML Editor/Author

To add a *favicon* to your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit the WebHelp transformation scenario and open the **Parameters** tab.
2. Locate the `webhelp.favicon` parameter and enter the file path that points to the image that will be use as the *favicon*.
3. Run the transformation scenario.

   Result: Browsers that provide *favicon* support will display the *favicon* (typically in the browser's address bar, in the list of bookmarks, and in the history).

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a *favicon* to your WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Specify the file path that points to the image that will be use as the *favicon* using the `webhelp.favicon` parameter.
2. Execute the transformation script.

   Result: Browsers that provide *favicon* support will display the *favicon* (typically in the browser's address bar, in the list of bookmarks, and in the history).

For example:

- **Windows:**

```
dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.favicon=c:\myFavicon.jpg
```

- **Mac OS X/ Linux:**

```
dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.favicon=C:/myFavicon.jpg
```

Adding a Logo Image in the Title Area

You can customize **WebHelp Classic** output to include a logo in the title area. It will be displayed before the publication title. You can also specify a URL that can be used to send users to a specific website when they click the logo image.

This customization can be done using a transformation scenario from within **Oxygen XML Editor/Author** or using a command line script outside of **Oxygen XML Editor/Author**.

Using Oxygen XML Editor/Author

To add a logo in the title area of your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit a **WebHelp Classic** transformation scenario, then open the **Parameters** tab.
2. Specify the path to your logo in the `webhelp.logo.image` parameter.
3. If you also want to add a link to your website when you click the logo image, set the URL in the `webhelp.logo.image.target.url` parameter.
4. Run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a logo in the title area of your WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Specify the path to your logo using the `webhelp.logo.image` parameter.
2. If you also want to add a link to your website when you click the logo image, set the URL using the `webhelp.logo.image.target.url` parameter.
3. Execute the transformation script.

For example:

- **Windows:**

  ```
  dita.bat -f webhelp -Dwebhelp.logo.image=c:\myLogo.jpg -
  Dwebhelp.logo.image.target.url=http://sample-site.com
  ```
- **Mac OS X/ Linux:**

  ```
  dita -f webhelp -Dwebhelp.logo.image=C:/myLogo.jpg -
  Dwebhelp.logo.image.target.url=http://sample-site.com
  ```

Adding Video and Audio Objects in DITA WebHelp Classic

You can insert references to video and audio media resources (such as videos, audio clips, or embedded HTML frames) in your DITA topics and then publish them to WebHelp output. The media objects can be played directly in all HTML5-based outputs, including WebHelp systems.

To add media objects in the WebHelp output generated from DITA documents, follow the procedures below.

Adding Videos to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the video through one of the following methods:
   - Use the **Insert Media Object** toolbar action.
   - Drag (or copy) the video file from your system explorer or the **Navigator** view and drop (or paste) it into your document.
   - Manually add an `object` element, as in one of the following examples:

     ```
     <object outputclass="video" type="video/mp4" data="MyVideo.mp4"/>
     ```

     or, instead of the `data` attribute, you can specify the video using a parameter like this:

     ```
     <object outputclass="video">
       <param name="src" value="videos/MyVideo.mp4"/>
     </object>
     ```
2. Apply a **DITA to WebHelp** transformation to obtain the output.

Result: The transformation converts the `object` element to an HTML5 `video` element.

```
<video controls="controls"><source type="video/mp4" src="MyVideo.mp4"></source>
</video>
```

Adding Audio Clips to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the audio clip through one of the following methods:
   - Use the **Insert Media Object** toolbar action.
   - Drag (or copy) the audio file from your system explorer or the **Navigator** view and drop (or paste) it into your document.
   - Manually add an `object` element, as in one of the following examples:

     ```
     <object outputclass="audio" type="audio/mpeg" data="MyClip.mp3"/>
     ```

     or, instead of the `data` attribute, you can specify the video using a parameter like this:

     ```
     <object outputclass="audio">
       <param name="src" value="audio/MyClip.mp3"/>
     </object>
     ```
2. Apply a **DITA to WebHelp** transformation to obtain the output.

   Result: The transformation converts the `object` element to an HTML5 `audio` element.

   ```
   <audio controls="controls"><source type="audio/mpeg" src="MyClip.mp3"></source>
   </audio>
   ```

Adding Embedded HTML Frames (such as YouTube videos) to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the embedded object by using the **Insert Media Object** toolbar action or by manually adding an `object` element, as in one of the following examples:

   ```
   <object outputclass="iframe" data="https://www.youtube.com/embed/m_vv2s5Trn4"/>
   ```

   or, instead of the `data` attribute, you can specify the object using a parameter like this:

   ```
   <object outputclass="iframe">
     <param name="src" value="http://www.youtube.com/embed/m_vv2s5Trn4"/>
   </object>
   ```
2. If you want the video to be allowed to play in full screen mode once the document is converted to XHTML output, also add an `allowfullscreen` parameter and set its value to **true**:

   ```
   <object outputclass="iframe" data="https://www.youtube.com/embed/m_vv2s5Trn4"/>
     <param name="allowfullscreen" value="true"/>
   </object>
   ```

   Tip: If you copy the embed code from the source and paste it into the **Insert Media** dialog box (see the specific instructions: here), the `allowfullscreen` parameter will automatically be added and all you have to do is set the value to **true**.
3. Apply a **DITA to WebHelp** transformation to obtain the output.

   Result: The transformation converts the `object` element to an HTML5 `iframe` element.

   ```
   <iframe controls="controls" src="https://www.youtube.com/embed/m_vv2s5Trn4">
   </iframe>
   ```

For more information, see the following video demonstration:

https://www.youtube.com/embed/llX11gS4WaU

Related Information:

Adding Video, Audio, and Embedded HTML Resources in DITA Topics on page 1511

Adding Videos in DocBook WebHelp Classic Output

You can insert references to videos in your DocBook topics and then publish them to **WebHelp Classic** output. The videos can be played directly in all HTML5-based outputs, including WebHelp systems.

To add videos in the **WebHelp Classic** output generated from DocBook documents, follow these steps:

1. Edit the DocBook document and reference the video using an `mediaobject` element, as in the following example:

```
<mediaobject>
  <videoobject>
    <videodata fileref="http://www.youtube.com/watch/v/VideoName"/>
  </videoobject>
</mediaobject>
```

2. Apply a *WebHelp* or *WebHelp with Feedback* transformation scenario to obtain the output.

Changing Number Styles for Ordered Lists

Ordered lists (`ol`) are usually numbered in XHTML output using numerals. If you want to change the numbering to alphabetical, follow these steps:

1. Define a custom `outputclass` value and set it as an attribute of the ordered list, as in the following example:

```
<ol outputclass="number-alpha">
    <li>A</li>
    <li>B</li>
    <li>C</li>
</ol>
```

2. Add the following code snippet in a custom CSS file:

```
ol.number-alpha{
    list-style-type:lower-alpha;
}
```

3. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   a. For a DITA transformation, set the `args.css` parameter to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   b. For a DocBook transformation, set the `html.stylesheet` parameter to the path of your custom CSS file.
4. Run the transformation scenario.

Changing Element Scoring in Search Results

The WebHelp **Search** feature is enhanced with a rating mechanism that computes scores for every page that matches the search criteria. HTML tag elements are assigned a scoring value and these values are evaluated for the search results. The WebHelp directory includes a properties file that defines the scoring values for tag elements and this file can be edited to customize the values according to your needs.

To edit the scoring values of HTML tag element for enhancing WebHelp search results, follow these steps:

1. Edit the scoring properties file for DITA or DocBook WebHelp systems. The properties file includes instructions and examples to help you with your customization.
   a) For DITA WebHelp Classic systems, edit the following file: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.classic\indexer\scoring.properties`.
   b) For DocBook WebHelp system, edit the following file: `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\indexer\scoring.properties`.

   The values that can be edited in the `scoring.properties` file:

```
h1 = 10
h2 = 9
h3 = 8
h4 = 7
h5 = 6
h6 = 5
b = 5
strong = 5
em = 3
i=3
u=3
div.toc=-10
```

```
title=20
div.ignore=ignored
meta_keywords = 20
meta_indexterms = 20
meta_description = 25
shortdesc=25
```

2. Save your changes to the file.
3. Re-run your WebHelp transformation.

Changing the Icons in a WebHelp Classic Table of Contents

You can change the icons that appear in a WebHelp Classic table of contents by assigning new image files in a custom CSS file. By default, these icons are defined with the following CSS codes (the first example is the icon that appears for a collapsed menu and the second for an expanded menu):

```
.hasSubMenuClosed{
    background: url('../img/book_closed16.png') no-repeat;
    padding-left: 16px;
    cursor: pointer;
}
```

```
.hasSubMenuOpened{
    background: url('../img/book_opened16.png') no-repeat;
    padding-left: 16px;
    cursor: pointer;
}
```

Using Oxygen XML Editor/Author

To assign other icons and use a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a custom CSS file that assigns your desired icons to the `.hasSubMenuClosed` and `.hasSubMenuOpened` properties.

   ```
   .hasSubMenuClosed{
       background: url('TOC-my-closed-button.png') no-repeat;
   }
   ```

   ```
   .hasSubMenuOpened{
       background: url('TOC-my-opened-button.png') no-repeat;
   }
   ```

2. It is recommended that you store the image files in the same directory as the default icons.
   - For DITA transformations: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\img\`.
   - For DocBook transformations: *[OXYGEN_INSTALL_DIR]*`\frameworks\docbook\xsl\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\img\`.
3. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   - For a DITA transformation, set the `args.css` parameter to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For a DocBook transformation, set the `html.stylesheet` parameter to the path of your custom CSS file.
4. Run the WebHelp transformation scenario to generate the output.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To assign other icons and use a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create a custom CSS file that assigns your desired icons to the `.hasSubMenuClosed` and `.hasSubMenuOpened` properties.

```
.hasSubMenuClosed{
    background: url('TOC-my-closed-button.png') no-repeat;
}
```

```
.hasSubMenuOpened{
    background: url('TOC-my-opened-button.png') no-repeat;
}
```

2. It is recommended that you store the image files in the same directory as the default icons.
   - For DITA transformations: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\img\`.
   - For DocBook transformations: `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\img\`.
3. Reference your custom CSS file:
   - For DITA transformations, use the `args.css` parameter in your transformation script and set its value to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For DocBook transformations, use the `html.stylesheet` parameter in your transformation script and set its value to the path of your custom CSS file.
4. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.css=c:\myFile.css -Dargs.copycss=yes
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.css=C:/myFile.css -Dargs.copycss=yes
  ```

Copying Additional Resources to Output Directory

You can copy additional resources (such as JavaScript, CSS or other resources) to the output directory of a WebHelp system by using the `webhelp.custom.resources` parameter.

Using Oxygen XML Editor/Author

To copy additional resources to the output directory using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Place all your resources in the same directory.
2. Edit the WebHelp transformation scenario, then open the **Parameters** tab.
3. Edit the value for the `webhelp.custom.resources` parameter and set it to the absolute path of the directory in step 1.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

   Result: All files from the new directory will be copied to the root of the WebHelp output directory.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To copy additional resources to the output directory using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Place all your resources in the same directory.
2. Specify the absolute path to that directory using the `webhelp.custom.resources` parameter.
3. Execute the transformation script.

   Result: All files from the new directory will be copied to the root of the WebHelp output directory.

For example:

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp-responsive -
  Dwebhelp.custom.resources=c:\resources
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp-responsive -Dwebhelp.custom.resources=C:/
  resources
  ```

Customizing the Appearance of Selected Items in the Table of Contents

The appearance of selected items in the table of contents of WebHelp Classic output can be enhanced.

For example, to highlight the background of the selected item, follow these steps:

1. Locate the `toc.css` file in the following directory:
   a. For DITA transformations: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\css`.
   b. For DocBook transformations: `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\css`.
2. Edit that CSS file, find the `menuItemSelected` class, and change the value of the `background` property.
3. Run the transformation.

Note: You can also overwrite the same value from your own custom CSS and then specify the path to your CSS in the transformation scenario by doing one of the following:

- For DITA transformations, use the `args.css` parameter and set its value to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
- For DocBook transformations, use the `html.stylesheet` parameter and set its value to the path of your custom CSS file.

Customizing WebHelp Output Through CSS Styling

The most common way to customize the look and style of your WebHelp output is to use custom CSS styling. This method can be used to make small, simple styling changes or more advanced, precise changes. To implement the styling in your WebHelp output, you simply need to create the custom CSS file and reference it in your transformation scenario or script. This custom file will be the final CSS to be applied so its content will override the styles in the other pre-existing CSS files.

Using the CSS Inspector to Identify Content for Custom CSS File

You can use your browser's CSS inspector to identify the pertinent code in the current CSS files and you can even make changes directly in the CSS inspector to test the results so that you know exactly what content to use in your custom CSS file.

In most popular browsers (such as Chrome, Firefox, and Edge), you can access the CSS inspector by using **F12** or by selecting **Inspect Element** (or simply **Inspect**) from the contextual menu.

Tip: When using Safari on Mac OS X, you must first enable the Develop menu by going to the Advanced settings and selecting **Show Develop menu in menu bar**. Then you can select **Show Web Inspector** from the Develop menu or click **Command + Option + I**.

Referencing the Custom CSS Using Oxygen XML Editor/Author

To use a custom CSS to style WebHelp output and use a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create your custom CSS file.
2. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   - For a DITA transformation, set the `args.css` parameter to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For a DocBook transformation, set the `html.stylesheet` parameter to the path of your custom CSS file.
3. Run the WebHelp transformation scenario to generate the output.

Referencing the Custom CSS Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To use a custom CSS to style WebHelp output and use a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create your custom CSS file.
2. Reference your custom CSS file:
   - For DITA transformations, use the `args.css` parameter in your transformation script and set its value to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For DocBook transformations, use the `html.stylesheet` parameter in your transformation script and set its value to the path of your custom CSS file.
3. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.css=c:\myFile.css -
  Dargs.copycss=yes
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.css=C:/myFile.css -
  Dargs.copycss=yes
  ```

Disable Caching in WebHelp Classic Output

In cases where a set of WebHelp Classic pages need to be updated on a regular basis to deliver the latest version of the documentation, the WebHelp pages should always be requested from the server upon re-loading it in a Web browser on the client side, rather than re-using an outdated *cached* version in the browser.

To disable caching in WebHelp Classic output, follow this procedure:

1. Edit the following XSL file for DITA or DocBook WebHelp systems:
   - For DITA WebHelp systems, edit the following file: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\xsl\createMainFiles.xsl`.
   - For DocBook WebHelp system, edit the following file: *[OXYGEN_INSTALL_DIR]*`\frameworks\docbook\xsl\com.oxygenxml.webhelp.classic\xsl\createMainFiles.xsl`.
2. Locate the following template in the XSL file: `<xsl:template name-"create-toc-common-file">` and add the following code snippet:

```
<meta http-equiv="Pragma" content="no-cache" />
```

```
<meta http-equiv="Expires" content="-1" />
```

Note: The code should look like this:

```
  <html>
    <head>
      <xsl:if test="$withFrames">
      <base target="contentwin"/>
      </xsl:if>
      <meta http-equiv="Content-Type" content="text/html; charset=utf-8"/>
           <!-- Disable caching of WebHelp pages in web browser. -->
      <meta http-equiv="Pragma" content="no-cache" />
      <meta http-equiv="Expires" content="-1" />
....
```

3. Save your changes to the file.
4. Re-run your WebHelp transformation scenario.

Excluding Certain DITA Topics from Search Results

There are several ways to exclude certain DITA resources from your WebHelp system's search results. This is useful if you have topics in your *DITA map* structure that you do not want to be included in search results for your WebHelp system. The first method involves setting a parameter in the WebHelp transformation scenario and the second involves setting an attribute for each DITA topic reference that you want to exclude.

Transformation Parameter Method

To exclude DITA topics from WebHelp search results using a transformation parameter, follow these steps:

1. Create a simple text file that will contain your excluded file patterns. Each pattern must be on a new line. The patterns are considered to be relative to the output directory and they accept wildcards such as `'*'` (matches zero or more characters) or `'?'` (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

   Example: Suppose that in your project, you want to exclude all files located in the `resources` directory and all files located in the `topics` directory that have a `.bak` file extension. You could create a simple text file (for example, named `exclude.properties`), and add the following lines:

   ```
   resources/*
   topics/*.bak
   ```

2. Edit the WebHelp transformation scenario and open the **Parameters** tab.
3. Set the `webhelp.search.custom.excludes.file` parameter to specify the path to the file that contains the excluded file patterns (for example, `exclude.properties` in step 1).
4. Run the transformation scenario.

Search Attribute Method

The WebHelp **Search** engine does not index DITA topics that have the `@search` attribute set to no.

To exclude DITA topics from WebHelp search results using this attribute, follow these steps:

1. Edit the *DITA map* and for any `topicref` that you want to exclude from search results, set the `search` attribute to no.

   For example:

   ```
   <topicref href="../topics/internal-topic1.dita" search="no"/>
   ```

2. Save your changes to the *DITA map*.
3. Run your WebHelp system transformation scenario.

Flagging DITA Content in WebHelp Output

Flagging content in WebHelp output involves defining a set of images that will be used for marking content across your information set.

To flag DITA content, you need to create a filter file that defines properties that will be applied on elements to be flagged. Generally, flagging is supported for *block elements* (such as paragraphs), but not for phrase-level elements within a paragraph. This ensures that the images that will flag the content are easily scanned by the reader, instead of being buried in text.

Using Oxygen XML Editor/Author

To flag content in the DITA Map to WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a DITA filter file in the directory where you want to add the file. Give the file a descriptive name, such as `audience-flag-build.ditaval`.
2. Define the property of the element you want to be flagged. For example, if you want to flag elements that have the `audience` attribute set to `programmer`, the content of the DITAVAL file should look like the following example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <val>
     <prop att="audience" val="programmer" action="flag"
    img="D:\resource\delta.gif" alt="sample alt text"/>
   </val>
   ```

   Note that for an element to be flagged, at least one attribute-value pair needs to have a property declared in the DITAVAL file.
3. Edit a **DITA Map to WebHelp** transformation scenario.
4. Specify the DITAVAL file in the **Filters** tab of the transformation scenario.
5. Run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To flag content in the DITA Map to WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create a DITA filter file in the directory where you want to add the file. Give the file a descriptive name, such as `audience-flag-build.ditaval`.
2. Define the property of the element you want to be flagged. For example, if you want to flag elements that have the `audience` attribute set to `programmer`, the content of the DITAVAL file should look like the following example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <val>
     <prop att="audience" val="programmer" action="flag"
    img="D:\resource\delta.gif" alt="sample alt text"/>
   </val>
   ```

   Note that for an element to be flagged, at least one attribute-value pair needs to have a property declared in the DITAVAL file.
3. Use the `args.filter` parameter in your transformation script and set its value to the path of the DITAVAL file.
4. Execute the transformation script.

For example:

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.filter=c:\myFile.ditaval
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.filter=C:/myFile.ditaval
  ```

Integrating Social Media and Google Tools in the WebHelp Classic Output

Oxygen XML Editor plugin includes support for integrating some of the most popular social media sites in WebHelp output.

How to Add a Facebook Like Button in WebHelp Classic Output

It is possible to integrate Facebook™ into your **WebHelp Classic** output and the widget will appear in the footer sections of your WebHelp page.

Using Oxygen XML Editor/Author

To add a Facebook™ *Like* widget to your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Facebook Developers website.
2. Fill-in the displayed form, then click the **Get Code** button.
3. Copy the two code snippets and paste them into a `<div>` element inside an XML file called `facebook-widget.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="facebook">
    <div id="fb-root"/>
    <script>
        <!--
            (function(d, s, id) {
        var js, fjs = d.getElementsByTagName(s)[0];
        if (d.getElementById(id)) return;
        js = d.createElement(s); js.id = id;
        js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
        fjs.parentNode.insertBefore(js, fjs);
        }(document, 'script', 'facebook-jssdk'));
        -->
    </script>
    <div class="fb-like" data-layout="standard" data-action="like"
        data-show-faces="true" data-share="true"/>
</div>
```

4. In **Oxygen XML Editor/Author**, click the **Configure Transformation Scenario(s)** action from the toolbar.
5. Select an existing WebHelp Classic transformation scenario (depending on your needs, it may be with or without feedback) and click the **Duplicate** button to open the **Edit Scenario** dialog box.
6. Switch to the **Parameters** tab and edit the `webhelp.footer.file` parameter to reference the `facebook-widget.xml` file that you created earlier.
7. Click **Ok** and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a Facebook™ *Like* widget to your WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Facebook Developers website.
2. Fill-in the displayed form, then click the **Get Code** button.
3. Copy the two code snippets and paste them into a `<div>` element inside an XML file called `facebook-widget.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

The content of the XML file should look like this:

```
<div id="facebook">
    <div id="fb-root"/>
    <script>
        <!--
            (function(d, s, id) {
        var js, fjs = d.getElementsByTagName(s)[0];
        if (d.getElementById(id)) return;
        js = d.createElement(s); js.id = id;
        js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
        fjs.parentNode.insertBefore(js, fjs);
        }(document, 'script', 'facebook-jssdk'));
        -->
    </script>
    <div class="fb-like" data-layout="standard" data-action="like"
        data-show-faces="true" data-share="true"/>
</div>
```

4. Use the `webhelp.footer.file` parameter in your transformation script and set its value to reference the `facebook-widget.xml` file that you created earlier.
5. Execute the transformation script.

   For example:

   - **Windows:**

     ```
     dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.footer.file=c:\facebook-widget.xml
     ```
   - **Mac OS X/ Linux:**

     ```
     dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.footer.file=C:/facebook-widget.xml
     ```

How to Add a Google+ Button in WebHelp Classic Output

It is possible to integrate *Google* into your **WebHelp Classic** output and the widget will appear in the footer section of your WebHelp page.

Using Oxygen XML Editor/Author

To add a *Google+* widget to your WebHelp Classic output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Developers website.
2. Fill-in the displayed form. The preview area on the right side displays the code and a preview of the widget.
3. Copy the code snippet displayed in the preview area and paste it into a `div` element inside an XML file called `google-plus-button.xml`. Make sure that the content of the file is well-formed. The content of the XML file should look like this:

   ```
   <div id="google-plus">
     <!-- Place this tag in your head or just before your close body tag. -->
     <script src="https://apis.google.com/js/platform.js" async defer></script>

     <!-- Place this tag where you want the +1 button to render. -->
     <div class="g-plusone" data-annotation="inline" data-width="300"></div>
   </div>
   ```
4. In **Oxygen XML Editor/Author**, click the **Configure Transformation Scenario(s)** action from the toolbar.
5. Select an existing WebHelp Responsive transformation scenario (depending on your needs, it may be with or without feedback) and click the **Duplicate** button to open the **Edit Scenario** dialog box.
6. Switch to the **Parameters** tab and edit the `webhelp.footer.file` parameter to reference the `google-plus-button.xml` file that you created earlier.
7. Click **Ok** and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a *Google+* widget to your WebHelp Classic output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Developers website.
2. Fill-in the displayed form. The preview area on the right side displays the code and a preview of the widget.
3. Copy the code snippet displayed in the preview area and paste it into a `div` element inside an XML file called `google-plus-button.xml`. Make sure that the content of the file is well-formed. The content of the XML file should look like this:

```
<div id="google-plus">
  <!-- Place this tag in your head or just before your close body tag. -->
  <script src="https://apis.google.com/js/platform.js" async defer></script>

  <!-- Place this tag where you want the +1 button to render. -->
  <div class="g-plusone" data-annotation="inline" data-width="300"></div>
</div>
```

4. Use the `webhelp.footer.file` parameter in your transformation script and set its value to reference the `google-plus-button.xml` file that you created earlier.
5. Execute the transformation script.

   For example:

   - **Windows:**

     ```
     dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.footer.file=c:\google-plus-button.xml
     ```
   - **Mac OS X/ Linux:**

     ```
     dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.footer.file=C:/google-plus-button.xml
     ```

How to Add Tweet Button in WebHelp Classic Output

It is possible to integrate *Twitter* into your **WebHelp Classic** output and the widget will appear in the footer section of your WebHelp page.

Using Oxygen XML Editor/Author

To add a Twitter™ *Tweet* widget to your WebHelp Classic output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Tweet button generator page.
2. Fill-in the displayed form. The **Preview and code** area displays the code that you will need.
3. Copy the code snippet displayed in the **Preview and code** area and paste it into a `div` element inside an XML file called `tweet-button.xml`. Make sure you follow these rules:

   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="twitter">
  <a href="https://twitter.com/share" class="twitter-share-button">Tweet</a>
  <script>
    <!--
      !function (d, s, id) {
      var
      js, fjs = d.getElementsByTagName(s)[0], p = /^http:/.test(d.location)
 ? 'http': 'https';
      if (! d.getElementById(id)) {
      js = d.createElement(s);
      js.id = id;
      js.src = p + '://platform.twitter.com/widgets.js';
      fjs.parentNode.insertBefore(js, fjs);
      }
```

```
      }
      (document,
      'script', 'twitter-wjs');
     -->
  </script>
</div>
```

4. In **Oxygen XML Editor/Author**, click the **Configure Transformation Scenario(s)** action from the toolbar.
5. Select an existing WebHelp Responsive transformation scenario (depending on your needs, it may be with or without feedback) and click the **Duplicate** button to open the **Edit Scenario** dialog box.
6. Switch to the **Parameters** tab and edit the `webhelp.footer.file` parameter to reference the `tweet-button.xml` file that you created earlier.
7. Click **Ok** and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a Twitter™ *Tweet* widget to your WebHelp Classic output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Tweet button generator page.
2. Fill-in the displayed form. The **Preview and code** area displays the code that you will need.
3. Copy the code snippet displayed in the **Preview and code** area and paste it into a `div` element inside an XML file called `tweet-button.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="twitter">
  <a href="https://twitter.com/share" class="twitter-share-button">Tweet</a>
  <script>
    <!--
      !function (d, s, id) {
      var
      js, fjs = d.getElementsByTagName(s)[0], p = /^http:/.test(d.location)
 ? 'http': 'https';
      if (! d.getElementById(id)) {
      js = d.createElement(s);
      js.id = id;
      js.src = p + '://platform.twitter.com/widgets.js';
      fjs.parentNode.insertBefore(js, fjs);
      }
      }
      (document,
      'script', 'twitter-wjs');
     -->
  </script>
</div>
```

4. Use the `webhelp.footer.file` parameter in your transformation script and set its value to reference the `tweet-button.xml` file that you created earlier.
5. Execute the transformation script.

   For example:

   - **Windows:**

     ```
     dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.footer.file=c:\tweet-button.xml
     ```

   - **Mac OS X/ Linux:**

```
dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.footer.file=C:/tweet-
button.xml
```

How to Integrate Google Analytics in WebHelp Classic Output

You can use *Google Analytics* to track and report site data for your **WebHelp Classic** output.

Using Oxygen XML Editor/Author

To integrate *Google Analytics* into your WebHelp Classic output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a new Google Analytics account (if you do not already have one) and log on.
2. Choose the Analytics solution that best fits the needs of your website.
3. Follow the on-screen instructions to obtain a **Tracking Code** that contains your *Tracking ID*. A **Tracking Code** looks like this:

```
<script>
 (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
 (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
 m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
 })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

 ga('create', 'UA-XXXXXXXX-X', 'auto');
 ga('send', 'pageview');
</script>
```

4. Save the Tracking Code (obtained in the previous step) in a new XML file called `googleAnalytics.xml`. Note that the file should only contain the tracking code.
5. In **Oxygen XML Editor/Author**, click the **Configure Transformation Scenario(s)** action from the toolbar.
6. Select an existing WebHelp Responsive transformation scenario (depending on your needs, it may be with or without feedback) and click the **Duplicate** button to open the **Edit Scenario** dialog box.
7. Switch to the **Parameters** tab and edit the `webhelp.footer.file` parameter to reference the `googleAnalytics.html` file that you created earlier.
8. Click **Ok** and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To integrate *Google Analytics* into your WebHelp Classic output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create a new Google Analytics account (if you do not already have one) and log on.
2. Choose the Analytics solution that best fits the needs of your website.
3. Follow the on-screen instructions to obtain a **Tracking Code** that contains your *Tracking ID*. A **Tracking Code** looks like this:

```
<script>
 (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
 (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
 m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
 })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

 ga('create', 'UA-XXXXXXXX-X', 'auto');
 ga('send', 'pageview');
</script>
```

4. Save the Tracking Code (obtained in the previous step) in a new XML file called `googleAnalytics.xml`. Note that the file should only contain the tracking code.
5. Use the `webhelp.footer.file` parameter in your transformation script and set its value to reference the `googleAnalytics.html` file that you created earlier.

6. Execute the transformation script.

   For example:

   - **Windows:**

     ```
     dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.footer.file=c:
     \googleAnalytics.xml
     ```
   - **Mac OS X/ Linux:**

     ```
     dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.footer.file=C:/
     googleAnalytics.xml
     ```

How to Integrate Google Search in WebHelp Classic Output

It is possible to integrate the *Google Search Engine* into your **WebHelp Classic** output and you can specify where you want the results to appear in your WebHelp page.

Using Oxygen XML Editor/Author

To integrate the *Google Search Engine* into your WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Custom Search Engine page using your Google account.
2. Select the **Create a custom search engine** button.
3. Follow the on-screen instructions to create a search engine for your site. At the end of this process you should obtain a code snippet that looks like this:

   ```
   <script>
    (function()  {
     var cx =
       '000888210889775888983:8mn4x_mf-yg';
     var gcse = document.createElement('script');
     gcse.type = 'text/javascript';
     gcse.async = true;
     gcse.src = (document.location.protocol == 'https:' ?
       'https:' : 'http:') +         '//www.google.com/cse/cse.js?cx=' + cx;
     var s = document.getElementsByTagName('script')[0];
     s.parentNode.insertBefore(gcse, s);
    }
    )();
   </script>
   ```
4. Save the script into a well-formed HTML file called `googlecse.html`.
5. In **Oxygen XML Editor/Author**, click the **Configure Transformation Scenario(s)** action from the toolbar.
6. Select an existing WebHelp Responsive transformation scenario (depending on your needs, it may be with or without feedback) and click the **Duplicate** button to open the **Edit Scenario** dialog box.
7. Switch to the **Parameters** tab and edit the `webhelp.google.search.script` parameter to reference the `googlecse.html` file that you created earlier.
8. You can also use the `webhelp.google.search.results` parameter to choose where to display the search results.

   a. Create an HTML file with the following content: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName-"searchQuery"></div>` (you must use the HTML5 version for the GCSE). For more information about other supported attributes, see Google Custom Search: Supported Attributes.

   b. Set the value of the `webhelp.google.search.results` parameter to the file path of the file you just created. If this parameter is not specified, the following code is used: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName="searchQuery"></div>`.
9. Click **Ok** and run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To integrate the *Google Search Engine* into your WebHelp Classic output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Custom Search Engine page using your Google account.
2. Select the **Create a custom search engine** button.
3. Follow the on-screen instructions to create a search engine for your site. At the end of this process you should obtain a code snippet that looks like this:

```
<script>
 (function()  {
  var cx =
    '000888210889775888983:8mn4x_mf-yg';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ?
    'https:' : 'http:') +         '//www.google.com/cse/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
 }
 )();
</script>
```

4. Save the script into a well-formed HTML file called `googlecse.html`.
5. Use the `webhelp.google.search.script` parameter in your transformation script and set its value to reference the `googlecse.html` file that you created earlier.
6. You can also use the `webhelp.google.search.results` parameter to choose where to display the search results.
   a. Create an HTML file with the following content: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName-"searchQuery"></div>` (you must use the HTML5 version for the GCSE). For more information about other supported attributes, see Google Custom Search: Supported Attributes.
   b. Set the value of the `webhelp.google.search.results` parameter to the file path of the file you just created. If this parameter is not specified, the following code is used: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName="searchQuery"></div>`.
7. Execute the transformation script.

   For example:

   - **Windows:**

     ```
     dita.bat -i c:\mySample.ditamap -f webhelp -Dwebhelp.google.search.script=c:\googlecse.html -Dwebhelp.google.search.results=c:\myFile.html
     ```

   - **Mac OS X/ Linux:**

     ```
     dita -i C:/mySample.ditamap -f webhelp -Dwebhelp.google.search.script=C:/googlecse.html -Dwebhelp.google.search.results=C:/myFile.html
     ```

Localization in WebHelp Classic Output

This section contains topics that explain the localization support for DITA or DocBook WebHelp Classic transformations.

Localizing Email Notifications of WebHelp Classic with Feedback Output

The feedback-enabled WebHelp systems use emails to notify users when comments are posted. These emails are based on templates stored in the WebHelp directory. The default messages are in English, French, German, and Japanese. These messages are copied into the WebHelp system deployment directory during the execution of the corresponding transformation scenario.

Using Oxygen XML Editor/Author

To change the language of the emails for WebHelp Classic with Feedback output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create the following directory, depending on your framework:
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
   - **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
2. Copy all English template files from the following directory (depending on your framework) and paste them into the directory you just created.
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\en`
   - **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\en`
3. Edit the HTML files from the following directory (depending on your framework) and translate the content into your language.
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
   - **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
4. Edit a **WebHelp Classic with Feedback** transformation scenario and open the **Parameters** tab.
5. In the **Parameters** tab, look for the `args.default.language` parameter and set its value to the appropriate language code (for example, `nl` for Dutch).

   Note: If you set the parameter to a value such as `LanguageCode-CountryCode` (for example, `en-us`), the transformation scenario will only use the language code.
6. Run the transformation scenario.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To change the language of the emails for WebHelp Classic with Feedback output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create the following directory, depending on your framework:
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
   - **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
2. Copy all English template files from the following directory (depending on your framework) and paste them into the directory you just created.
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\en`

- **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\en`

3. Edit the HTML files from the following directory (depending on your framework) and translate the content into your language.
   - **DITA:** *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
   - **DocBook:** `[DocBook XSL directory]\com.oxygenxml.webhelp.classic\oxygen-webhelp\resources\php\templates\[Language code]` (where the *Language code* is the 2-digit code, such as *nl* for Dutch)
4. Use the `args.default.language` parameter in your transformation script and set its value to the appropriate language code (for example, `nl` for Dutch).

   Note: If you set the parameter to a value such as `LanguageCode-CountryCode` (for example, `en-us`), the transformation scenario will only use the language code.
5. Execute the transformation script.

For example, a DITA to WebHelp Classic with Feedback script might look like this:

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp-feedback -Dargs.default.language=nl
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp-feedback -Dargs.default.language=nl
  ```

Localizing the Interface of DITA Map to WebHelp Classic Output

Static labels used in the WebHelp output are stored in translation files that have the *strings-lang1-lang2.xml* name format, where *lang1* and *lang2* are ISO language codes. For example, the US English labels are kept in the *strings-en-us.xml* file.

These translation files are collected from two locations:

- *DITA-OT-DIR*`/xsl/common` folder - DITA-OT's default translations.
- *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` folder - These translations are contributed by the WebHelp plugin and extend the default ones provided by DITA-OT. The labels defined in this folder take precedence over the DITA-OT default ones.

  Important: If you need to customize the translation labels, you should do this by updating the translation files found in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` folder.

Using Oxygen XML Editor/Author

To localize the interface of the DITA Map to WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Look for the *strings-[lang1]-[lang2].xml* file in *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` directory (for example, the Canadian French file would be: *strings-fr-ca.xml*). If it does not exist, use the following procedure to create one:
   a. Create a new `strings-fr-ca.xml` file in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` directory.
   b. Copy all the labels found in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization/strings-en-us.xml` and paste them into the newly created file.
   c. Copy all the labels found in the `DITA-OT_DIR/xsl/common/strings-en-us.xml` and paste them into the newly created file.
2. Translate all the labels from the above language file. Labels are stored in XML elements that have the following format: `<str name="Label name">Caption</str>`.

3. Run the predefined transformation scenario called **Run DITA-OT Integrator** from the **Apply Transformation Scenario(s)** or **Configure Transformation Scenario(s)** dialog box. If the *integrator* is not visible, select the **Show all scenarios** action that is available in the **Settings** drop-down menu.
4. Make sure that the new XML file that you created is listed in the file *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization/strings.xml`. For example, the Canadian French file would be listed as: `<lang xml:lang="fr-ca" filename="strings-fr-ca.xml"/>`.
5. Edit any of the **DITA Map to WebHelp** transformation scenarios (with or without feedback) and set the `args.default.language` parameter to the code of the language you want to localize (for example, *fr-ca* for Canadian French).
6. Run the transformation scenario to produce the WebHelp output.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To localize the interface of the DITA Map to WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Look for the *strings-[lang1]-[lang2].xml* file in *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` directory (for example, the Canadian French file would be: *strings-fr-ca.xml*). If it does not exist, use the following procedure to create one:
   a. Create a new `strings-fr-ca.xml` file in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` directory.
   b. Copy all the labels found in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization/strings-en-us.xml` and paste them into the newly created file.
   c. Copy all the labels found in the `DITA-OT_DIR/xsl/common/strings-en-us.xml` and paste them into the newly created file.
2. Translate all the labels from the above language file. Labels are stored in XML elements that have the following format: `<str name="Label name">Caption</str>`.
3. In the home directory of the DITA Open Toolkit, run the `startcmd.bat` script on Windows or `startcmd.sh` script on Linux/Mac OS X. In the displayed command line interface console, run `ant -f integrator.xml`.
4. Make sure that the new XML file that you created is listed in the file *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization/strings.xml`. For example, the Canadian French file would be listed as: `<lang xml:lang="fr-ca" filename="strings-fr-ca.xml"/>`.
5. Use the `args.default.language` parameter in your transformation script and set its value to the appropriate language code (for example, *fr-ca* for Canadian French).
6. Execute the transformation script.

For example:

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp-responsive -Dargs.default.language=fr-ca
  ```

- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp-responsive -Dargs.default.language=fr-ca
  ```

Related Information:
Indexing Japanese Content in WebHelp Classic on page 1032

Localizing the Interface of DocBook to WebHelp Classic Output

Static labels that are used in the WebHelp output are kept in translation files in the `[DocBook XSL directory]/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` folder. Translation files have the *strings-lang1-lang2.xml* name format, where *lang1* and *lang2* are ISO language codes. For example, the US English text is kept in the *strings-en-us.xml* file.

To localize the interface of the WebHelp output for DocBook transformations, follow these steps:

1. Look for the *strings-[lang1]-[lang2].xml* file in `[DocBook XSL directory]/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization` directory (for example, the Canadian French file would be: *strings-fr-ca.xml*). If it does not exist, create one starting from the *strings-en-us.xml* file.
2. Translate all the labels from the above language file. Labels are stored in XML elements that have the following format: `<str name="Label name">Caption</str>`.
3. Make sure that the new XML file that you created in the previous two steps is listed in the file `[DocBook XSL directory]/com.oxygenxml.webhelp.classic/oxygen-webhelp/resources/localization/strings.xml`. In our example for the Canadian French file, it should be listed as: `<lang xml:lang="fr-ca" filename="strings-fr-ca.xml"/>`.
4. Edit any of the DocBook to WebHelp transformation scenarios (with or without feedback) and set the **l10n.gentext.default.language** parameter to the code of the language you want to localize (for example, *fr-ca* for Canadian French).
5. Run the transformation scenario to produce the WebHelp output.

Related Information:
Indexing Japanese Content in WebHelp Classic on page 1032

Indexing Japanese Content in WebHelp Classic

To optimize the indexing of Japanese content in WebHelp pages, the Lucene Kuromoji Japanese analyzer can be used. This analyzer is included in the **Oxygen XML Editor/Author** installation kit.

Using Oxygen XML Editor/Author

To activate the Japanese indexing in your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Set the language for your content to Japanese (depending on your framework):
   - **DITA:** Edit a **DITA to WebHelp** transformation scenario and in the **Parameters** tab, set the value of the `args.default.language` parameter to `ja-jp`.

     Note: Alternatively, you could set the `xml:lang` attribute on the root of the *DITA map* and the referenced topics to `ja-jp`. Another alternative for DITA output is to use the `webhelp.search.japanese.dictionary` parameter to specify a path to a Japanese dictionary that will be used by the *Kuromoji* morphological engine.
   - **DocBook:** Edit a **DocBook to WebHelp** transformation scenario and in the **Parameters** tab, set the value of the `l10n.gentext.default.language` parameter to `ja`.
2. Run the WebHelp transformation scenario to generate the output.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To activate the Japanese indexing in your WebHelp output using a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Set the language for your content to Japanese (depending on your framework):
   - **DITA:** Use the `args.default.language` parameter in your transformation script and set its value to `ja-jp`.

     Note: Alternatively, you could set the `xml:lang` attribute on the root of the *DITA map* and the referenced topics to `ja-jp`. Another alternative for DITA output is to use the `webhelp.search.japanese.dictionary` parameter to specify a path to a Japanese dictionary that will be used by the *Kuromoji* morphological engine.
   - **DocBook:** Use the `l10n.gentext.default.language` parameter in your transformation script and set its value to `ja`.
2. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.default.language=ja-jp
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.default.language=ja-jp
  ```

Related Information:

Localizing the Interface of DITA Map to WebHelp Classic Output

Localizing the Interface of DocBook to WebHelp Classic Output on page 1032

Activating Support for Right-to-Left (RTL) Languages

To activate support for RTL (right-to-left) languages in WebHelp output, edit the *DITA map* and set the `xml:lang` attribute on its root element (`map`). The corresponding attribute value can be set for following RTL languages:

- `ar-eg` - Arabic
- `he-il` - Hebrew
- `ur-pk` - Urdu

Optimizing Search Results in WebHelp Classic

A **DITA Map WebHelp** transformation scenario can be configured to produce a `sitemap.xml` file that is used by search engines to aid crawling and indexing mechanisms. A *sitemap* lists all pages of a WebHelp system and allows webmasters to provide additional information about each page, such as the date it was last updated, change frequency, and importance of each page in relation to other pages in your WebHelp deployment.

The structure of the `sitemap.xml` file looks like this:

```
<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9">
  <url>
    <loc>http://www.example.com/topics/introduction.html</loc>
    <lastmod>2014-10-24</lastmod>
    <changefreq>weekly</changefreq>
    <priority>0.5</priority>
  </url>
  <url>
    <loc>http://www.example.com/topics/care.html#care</loc>
    <lastmod>2014-10-24</lastmod>
    <changefreq>weekly</changefreq>
    <priority>0.5</priority>
  </url>
   .  .  .
</urlset>
```

Each page has a `<url>` element structure containing additional information, such as:

- **loc** - the URL of the page. This URL must begin with the protocol (such as `http`), if required by your web server. It is constructed from the value of the `webhelp.sitemap.base.url` parameter from the transformation scenario and the relative path to the page (collected from the `href` attribute of a `topicref` element in the *DITA map*).

  Note: The value must have fewer than 2,048 characters.

- **lastmod** (optional) - the date when the page was last modified. The date format is `YYYY-MM-DD`.
- **changefreq** (optional) - indicates how frequently the page is likely to change. This value provides general information to assist search engines, but may not correlate exactly to how often they crawl the page. Valid values are: `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, and `never`. The first time the `sitemap.xml` file is generated, the value is set based upon the value of the `webhelp.sitemap.change.frequency` parameter in the DITA WebHelp transformation scenario. You can change the value in each `url` element by editing the `sitemap.xml` file.

  Note: The value `always` should be used to describe documents that change each time they are accessed. The value `never` should be used to describe archived URLs.
- **priority** (optional) - the priority of this page relative to other pages on your site. Valid values range from 0.0 to 1.0. This value does not affect how your pages are compared to pages on other sites. It only lets the search engines know which pages you deem most important for the crawlers. The first time the `sitemap.xml` file is generated, the value is set based upon the value of the `webhelp.sitemap.priority` parameter in the DITA WebHelp transformation scenario. You can change the value in each `url` element by editing the `sitemap.xml` file.

Creating and Editing the `sitemap.xml` File

Follow these steps to produce a `sitemap.xml` file for your WebHelp system, which can then be edited to fine-tune search engine optimization:

1. **Edit** the transformation scenario you currently use for obtaining your WebHelp output. This opens the **Edit DITA Scenario** dialog box.
2. Open the **Parameters** tab and set a value for the following parameters:
   - **webhelp.sitemap.base.url** - the URL of the location where your WebHelp system is deployed

     Note: This parameter is required for Oxygen XML Editor plugin to generate the `sitemap.xml` file.
   - **webhelp.sitemap.change.frequency** - how frequently the WebHelp pages are likely to change (accepted values are: `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, and `never`)
   - **webhelp.sitemap.priority** - the priority of each page (value ranging from 0.0 to 1.0)
3. Run the transformation scenario.
4. Look for the `sitemap.xml` file in the transformation's output folder. Edit the file to fine-tune the parameters of each page, according to your needs.

Overriding XSLT Processing Step of DITA WebHelp Classic Transformations

Since WebHelp output is primarily obtained by running XSLT transformations over the DITA input files (through the **DITA Map WebHelp Classic** transformation scenarios), one customization method would be to override the default XSLT templates that are used by the WebHelp transformations.

There are two methods available to override the XSLT stylesheets implied by the WebHelp transformation.

- The first method is to use one of the **WebHelp XSLT-import extension points** that allow you to import an XSLT stylesheet so that it becomes part of the normal build. This method uses the same mechanism as the DITA-OT XSLT-import extension points. Note that this method will affect all the outputs generated with the WebHelp system.
- The second method implies that you will create a DITA-OT extension plugin with a custom *transtype* and use an Ant build file to define the transformation process. The main difference from the first customization method is that you will not affect all WebHelp transformations. Only the transformations that use the declared plugin *transtype* will be affected.

WebHelp Classic XSLT-Import and XSLT-Parameter Extension Points

The WebHelp XSLT-Import extension points allows you to extend the XSLT stylesheets associated with some of the WebHelp transformation steps. The DITA-OT plug-in installer adds an XSLT import statement in the default WebHelp XSLT so that the XSLT stylesheet referenced by the extension point becomes part of the normal build.

Example:

```
<plugin id="com.oxygenxml.webhelp.classic.extension">
  <feature extension="com.oxygenxml.webhelp.classic.xsl.dita2webhelp"
           file="xsl/fixup.xsl"/>
```

```
</plugin>
```

Attention: The customizations you make by using this extension point will affect all WebHelp transformations. If you want to have a customization that is only available for a certain transformation, please use the Overriding a WebHelp XSLT Stylesheet from an Ant Build File method.

XSLT-Import Extension Points

The following extension points are available:

com.oxygenxml.webhelp.classic.xsl.dita2webhelp

Extension point to override the XSLT stylesheet (`dita2webhelpImpl.xsl`) that produces an HTML file for each DITA topic. The path to this stylesheet is: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.classic\xsl\dita\desktop\dita2webhelpImpl.xsl`

com.oxygenxml.webhelp.classic.xsl.createMainFiles

Extension point to override the XSLT stylesheet (`createMainFilesImpl.xsl`) that produces the WebHelp main HTML page (`index.html`). The path to this stylesheet is: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.classic\xsl\dita\desktop\createMainFilesImpl.xsl`

com.oxygenxml.webhelp.classic.xsl.createTocXML

Extension point to override the XSLT stylesheet (`tocDita.xsl`) that produces the `toc.xml` file. This file contains information extracted from the *DITA map* and it is mainly used to construct the WebHelp Table of Contents and navigational links. The path to this stylesheet is: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.classic\xsl\dita\tocDita.xsl`.

XSLT-Parameter Extension Points

If your customization stylesheet declares one or more XSLT parameters and you want to control their values from the transformation scenario, you can use one of the following XSLT parameter extension points:

com.oxygenxml.webhelp.classic.xsl.dita2webhelp.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.classic.xsl.dita2webhelp** extension point.

com.oxygenxml.webhelp.classic.xsl.createMainFiles.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.classic.xsl.createMainFiles** extension point.

com.oxygenxml.webhelp.classic.xsl.createTocXML.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.classic.xsl.createTocXML** extension point.

Related Information:

[DITA-OT] XSLT-Import Extension Points

[DITA-OT] XSLT-Parameter Extension Points

Overriding a WebHelp Classic XSLT Stylesheet from an Ant Build File

To create a WebHelp XSLT customization that is only available for a certain DITA OT transformation, the extension plugin should declare a custom *transtype*. The WebHelp XSLT stylesheets can be overridden from an ANT file provided by the DITA-OT extension plugin. From the Ant target associated with the plugin, you will specify a custom XSLT stylesheet that imports the original WebHelp stylesheet and add some customization templates.

The following procedure explains how to create a DITA-OT extension plugin that uses this extension method:

1. In the *`DITA-OT-DIR`*`\plugins\` folder, create a folder for this plugin (for example, `com.oxygenxml.webhelp.classic.custom`).
2. Create a **plugin.xml** file (in the folder you created in step 1) that specifies a new DITA-OT `transtype` and the build file associated with the plugin. For example:

```
<plugin id="com.oxygenxml.webhelp.classic.custom">
    <feature extension="dita.conductor.target.relative" file="integrator.xml"/>
    <transtype name="webhelp-classic-custom" extends="webhelp"
      desc="WebHelp Classic Customization"/>
```

```
</plugin>
```

3. Create the **integrator.xml** file that will import the actual plugin Ant build file.

```
<project basedir="." name="Webhelp Classic Customization">
    <import file="build.xml"/>
</project>
```

4. Create the **build.xml** file that overrides the value of properties associated with the XSLT stylesheets used to produce HTML files. The following Ant properties can be overridden to specify your customization stylesheets:

   `args.wh.classic.topic.xsl`

   Specify this property if you want to customize the XSLT stylesheet used to produce an HTML file for each topic.

   `args.wh.classic.create.main.files.xsl`

   Specify this property if you want to customize the XSLT stylesheet used to produce the main HTML files.

   `args.wh.classic.createTocXML.xsl`

   Specify this property if you want to customize the XSLT stylesheet used to produce the *toc.xml* file. The toc.xml file contains information extracted from DITA map and it is mainly used to create the WebHelp TOC.

   For example, to customize a WebHelp Classic transformation type, the build file should look like:

```
<project basedir="." name="Webhelp Classic Customization">
 <target name="dita2webhelp-classic-custom">
   <!--
     Override this property if you want to customize the XSLT stylesheet
     used to produce an HTML file for each topic
   -->
   <property
     name="args.wh.classic.topic.xsl"
     value="${dita.plugin.com.oxygenxml.webhelp.classic.custom.dir}
                                              /xsl/dita2webhelpCustom.xsl"/>
   <!--
     Override this property if you want to customize the XSLT stylesheet
     used to produce the main HTML file.
   -->
   <property
     name="args.wh.classic.create.main.files.xsl"
     value="${dita.plugin.com.oxygenxml.webhelp.classic.custom.dir}
                                             /xsl/createMainFilesCustom.xsl"/>
   <!--
     Override this property if you want to customize the XSLT stylesheet
     used to produce the toc.xml file.
   -->
   <property
     name="args.wh.classic.createTocXML.xsl"
     value="${dita.plugin.com.oxygenxml.webhelp.classic.custom.dir}
                                             /xsl/createTocXMLCustom.xsl"/>
   <!--
     You need to delegate the build target:
     * dita2webhelp - for WebHelp Classic
   -->
   <antcall target="dita2webhelp"/>
 </target>
</project>
```

5. Create an **xsl** directory in the plugin customization directory (that you created in step 1) to store the customized XSLT stylesheets.
6. Now that the extension plugin is created, install it in the DITA Open Toolkit.

Referencing the WebHelp XSLT Stylesheets from Your Customizations

Note that your customization stylesheets should import the original stylesheets that they override. To reference the WebHelp stylesheets, you can use the **plugin:com.oxygenxml.dita-ot.plugin.webhelp** prefix. This prefix is rewritten by an XML catalog to the WebHelp root directory.

Customizing the `dita2webhelp.xsl` Stylesheet

The XSLT stylesheet that customizes the WebHelp **dita2webhelp.xsl** stylesheet should look like:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
   xmlns:xs="http://www.w3.org/2001/XMLSchema"
   xmlns:math="http://www.w3.org/2005/xpath-functions/math"
   exclude-result-prefixes="xs math"
   version="2.0">
   <!--
     Import the original stylesheet used to produce an HTML file for each topic.
```

```
    -->
    <xsl:import href="plugin:com.oxygenxml.webhelp.classic:xsl/
                                        dita/classic/dita2webhelp.xsl"/>
    <!--
      Please add your customization templates here.
    -->
</xsl:stylesheet>
```

You need to import the following XSLT stylesheet:

```
<xsl:import href="plugin:com.oxygenxml.webhelp.classic:xsl/dita/desktop/
dita2webhelp.xsl"/>
```

Customizing the `createMainFiles.xsl` Stylesheet

The XSLT stylesheet that customizes the WebHelp **createMainFiles.xsl** stylesheet should look like:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:math="http://www.w3.org/2005/xpath-functions/math"
    exclude-result-prefixes="xs math"
    version="2.0">
    <!--
        Import the original stylesheet used to produce the main HTML file.
    -->
    <xsl:import href="plugin:com.oxygenxml.webhelp.classic:xsl/dita/
                                            desktop/createMainFiles.xsl"/>
    <!--
        Please add your customization templates here.
    -->

</xsl:stylesheet>
```

You need to import the following XSLT stylesheet:

```
<xsl:import href="plugin:com.oxygenxml.webhelp.classic:xsl/dita/desktop/
createMainFiles.xsl"/>
```

Customizing the `tocDita.xsl` File

The XSLT stylesheet that customizes the WebHelp **tocDita.xsl** stylesheet should look like:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:xs="http://www.w3.org/2001/XMLSchema"
    xmlns:math="http://www.w3.org/2005/xpath-functions/math"
    exclude-result-prefixes="xs math"
    version="2.0">
    <!--
        Import the original stylesheet used to produce the toc.xml file.
    -->
    <xsl:import href="plugin:com.oxygenxml.webhelp.classic:xsl/dita/tocDita.xsl"/>
    <!--
        Please add your customization templates here.
    -->
</xsl:stylesheet>
```

Publishing WebHelp Classic Output on a SharePoint Site

Since WebHelp output must be published locally, on the same machine where the WebHelp process is running, to publish your files directly to a SharePoint library you need to map a network drive to connect to SharePoint and change your file extensions to `.aspx`, as described in the steps below.

Using Oxygen XML Editor/Author

To publish WebHelp Classic output on a SharePoint site and use a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Map a network drive to connect to your SharePoint library. For more information, see: https://support.microsoft.com/en-us/kb/2616712.
2. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   - For a DITA transformation, set the `args.outext` parameter to `.aspx`.
   - For a DocBook transformation, set the `html.ext` parameter to `.aspx`.
3. Run the WebHelp transformation scenario to generate the output.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To publish WebHelp Classic output on a SharePoint site and use a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Map a network drive to connect to your SharePoint library. For more information, see: https://support.microsoft.com/en-us/kb/2616712.
2. Use the following parameter to change your file extensions to `.aspx`:
   - For DITA transformations, use the `args.outext` parameter in your transformation script and set its value to `.aspx`.
   - For DocBook transformations, use the `html.ext` parameter in your transformation script and set its value to `.aspx`.
3. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.outext=.aspx
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.outext=.aspx
  ```

Removing the *Previous*/*Next* Links from WebHelp Classic Output

The **Previous** and **Next** links that are created at the top area of each WebHelp Classic page can be hidden with a CSS code.

Using Oxygen XML Editor/Author

To remove these links from WebHelp Classic output and use a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a custom CSS file and add the following CSS code:

   ```
   .navparent, .navprev, .navnext {
       visibility:hidden;
   }
   ```
2. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   - For a DITA transformation, set the `args.css` parameter to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For a DocBook transformation, set the `html.stylesheet` parameter to the path of your custom CSS file.
3. Run the WebHelp transformation scenario to generate the output.

Using a Script Outside of Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To remove these links from WebHelp Classic output and use a script outside of **Oxygen XML Editor/Author**, follow this procedure:

1. Create a custom CSS file and add the following CSS code:

```
.navparent, .navprev, .navnext {
    visibility:hidden;
}
```

2. Reference your custom CSS file:
   - For DITA transformations, use the `args.css` parameter in your transformation script and set its value to the path of your custom CSS file. Also, set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
   - For DocBook transformations, use the `html.stylesheet` parameter in your transformation script and set its value to the path of your custom CSS file.
3. Execute the transformation script.

For example, a DITA script might look like this::

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp -Dargs.css=c:\myFile.css -
  Dargs.copycss=yes
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp -Dargs.css=C:/myFile.css -
  Dargs.copycss=yes
  ```

WebHelp Skin Builder

The **WebHelp Skin Builder** is a simple, easy-to-use tool, specially designed to assist users to visually customize the look and feel of the WebHelp output. It is implemented as an online tool hosted on the **Oxygen XML** website and allows you to experiment with various styles and colors over a documentation sample.

To be able to use the **Skin Builder**, you need:

- An Internet connection and unrestricted access to **Oxygen XML** website.
- A late version web browser.

To start the **Skin Builder**, do one of the following:

- For DocBook or DITA WebHelp systems, use a web browser to go to https://www.oxygenxml.com/webhelp-skin-builder.
- For DITA WebHelp systems, you can click the **Online preview** link in the **Skins tab** of a DITA OT transformation scenario. In the upper section of the preview, click the **Select Skin** button, then choose **Customize Skin**.

Skin Builder Layout

The left side panel of the **Skin Builder** is divided into 3 sections:

- **Actions** - Contains the following two buttons:
  - **Import** - Opens an **Import CSS** dialog box that allows you to load a CSS stylesheet and apply it over the documentation sample.
  - **Export** - Saves all properties as a CSS file.
- **Settings** - Includes a **Highlight selection** option that helps you identify the areas affected by a particular element customization.
  - When hovering an item in the customizable elements menu, the affected sample area is highlighted with a dotted blue border.
  - When an item in the customizable elements menu is selected, the affected sample area is highlighted with a solid red border.
- **Customize** - Provides a series of customizable elements organized under four main categories:
  - Header
  - TOC Area

- Vertical Splitter
- Content

For each customizable element, you can alter properties such as background color or font face. Any alteration made in the customizable elements menu is applied in real time over the sample area.

Creating a Customization Skin

1. You can start with one of the predefined skins or a CSS stylesheet applied over the sample using the **Import** button.
2. Use the elements in the **Customize** section to set properties that modify the look of the skin. By default, all customizable elements display a single property, but you can make more visible by clicking the **+Add** button and choosing from the available properties.

   Note: If you want to revert a particular property to its initial value, press the **Reset** button.
3. When you are happy with the skin customizations you have made, press the **Export** button. All settings will be saved in a CSS file.

Applying a Custom Skin to a DITA Map to WebHelp Classic Transformation Scenario

1. Start Oxygen XML Editor plugin.
2. Load the *DITA map* you want to produce as a WebHelp output.
3. Edit a **DITA Map to WebHelp** transformation scenario. Set the previously exported CSS file in the **Custom** section of the **Skins** tab.
4. Run the transformation to obtain the WebHelp output.

Apply a Customization Skin to a DocBook to WebHelp Classic Transformation Scenario

1. Start Oxygen XML Editor plugin.
2. Load the DocBook file you want to produce as a WebHelp output.
3. In the **Parameters** tab, set the `webhelp.skin.css` parameter to point to the previously exported CSS.
4. To customize the logo, use the following parameters: webhelp.logo.image and webhelp.logo.image.target.url.
5. Run the transformation to obtain the WebHelp output.

For more information about using the WebHelp Skin Builder, watch our video demonstration:

https://www.youtube.com/embed/32PGX--PQx0

Related Information:

Skins Tab (DITA OT Transformations) on page 1582

WebHelp Responsive Output

The **WebHelp Responsive** features a very flexible layout, is designed to adapt to any screen size to provide an optimal viewing and interaction experience. It is based upon the *Bootstrap* responsive front-end framework and is available for DITA document types.

The **WebHelp Responsive with Feedback** variant also includes a feedback system that allows your users to add comments and allows you to manage and reply to them.

WebHelp Responsive output can be generated by using the **DITA Map WebHelp Responsive** or **DITA Map WebHelp Responsive with Feedback** transformation scenario.

WebHelp Responsive Output Layout and Features

This section contains information about the layout and features of the WebHelp Responsive output.

HTML5 Responsive Pages

You can select from several different styles of layouts (for example, by default, you can select either a *tiles* or *tree* style of layout). Furthermore, each of these layouts include a collection of skins that you can choose from, or you can customize your own.

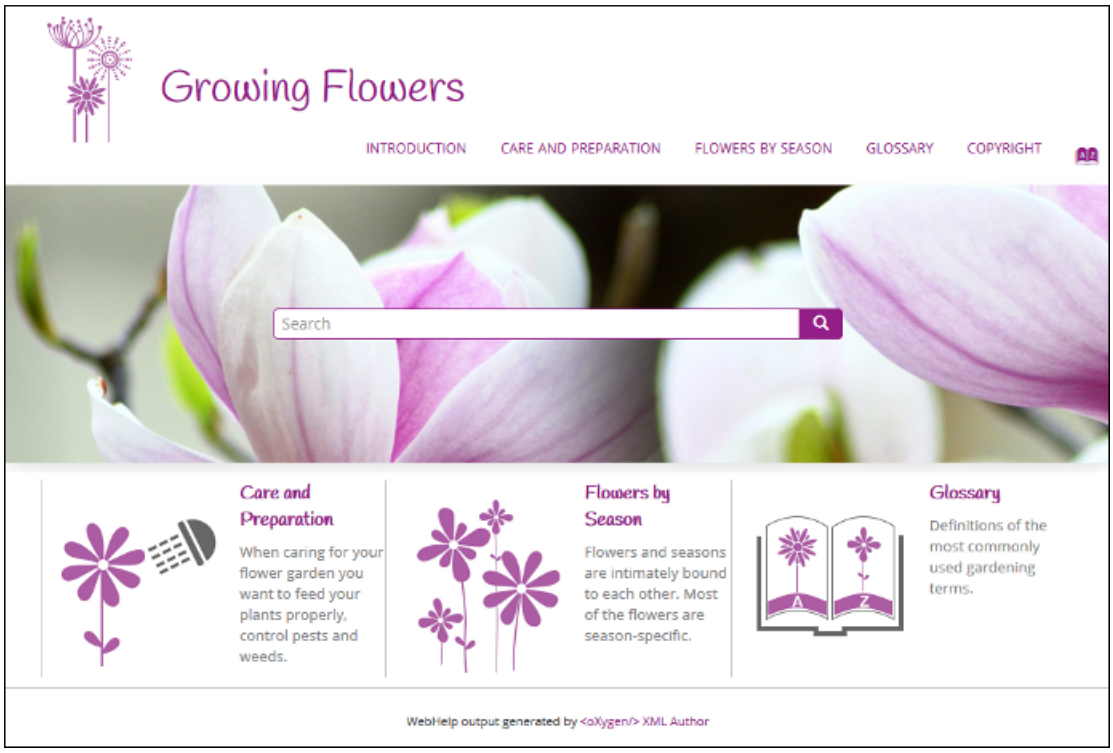


Figure 563: WebHelp Responsive Output on a Normal Screen

Figure 564: WebHelp Responsive Output on a Narrow Screen

Main Page

The *Main Page* is the home page generated in the WebHelp Responsive output. The main function of the home page is to display top level information and provide links that help you easily navigate to any of the top level topics of the publication. These links can be rendered in either a *Tiles* or *Tree* style of layout. The main page also consists of various other components, such as a logo, title, menu, search field, or index link.

Main Page - Tiles Layout

In the *tiles* presentation mode, a tile component is created for each chapter (first level topic) in the publication. The tile presents a link to the topic and its short description.

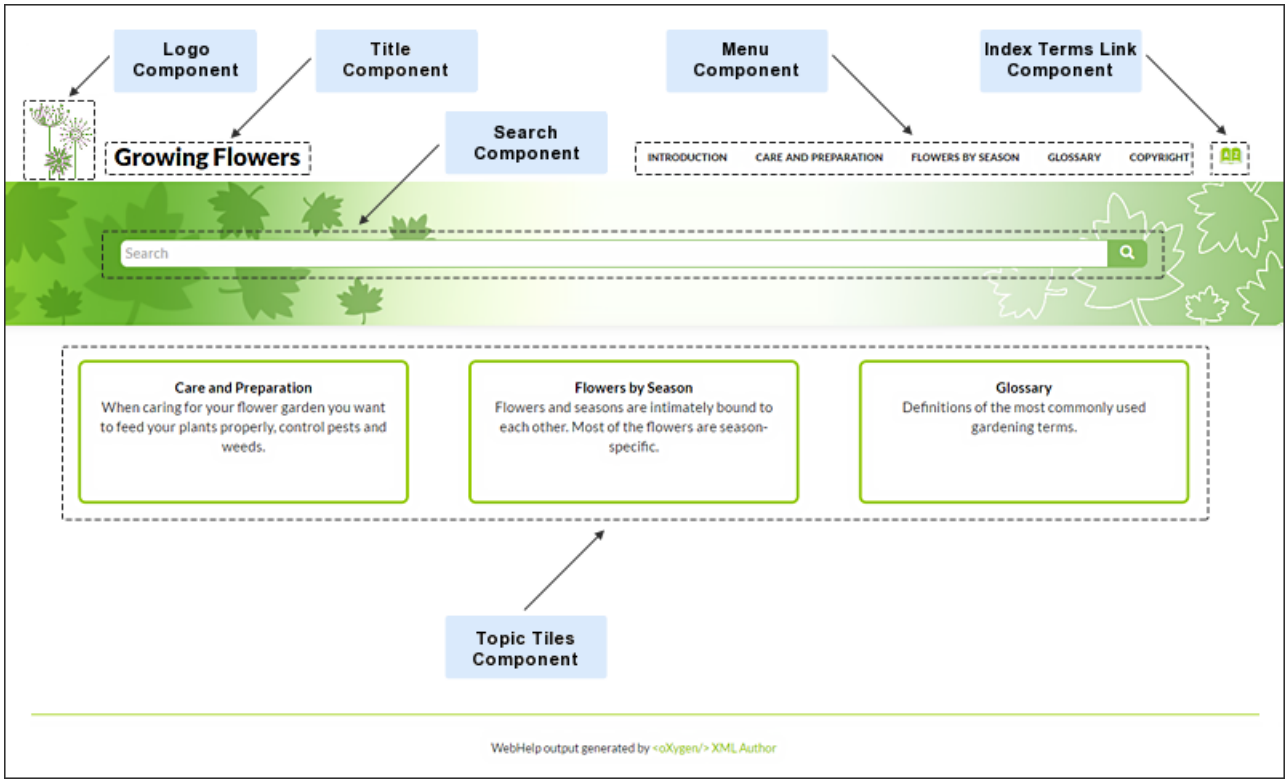


Figure 565: Main Page - Tiles Layout

Main Page - Tree Layout

In the *tree* presentation mode, links to the first and second level topics in the publication are displayed using a tree-like component.

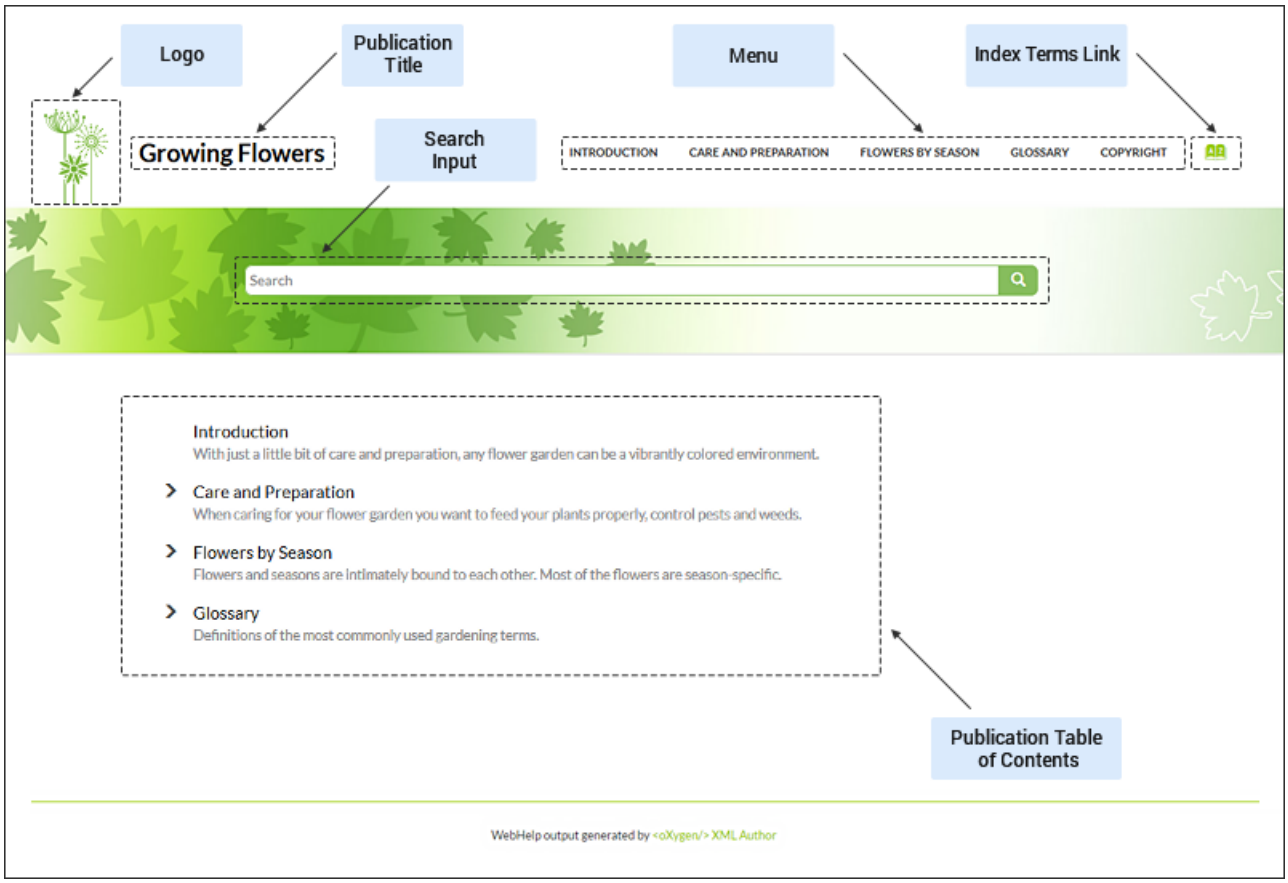


Figure 566: Main Page - Tree Layout

Main Page Components

The layout components displayed in the main page are:

Publication Title

The title of the publication. It is usually taken from the DITA map title.

Logo

Displays a logo associated with the publication. Additionally you can set a target URL that will be opened when you click on the logo image.

The logo image can be specified using the webhelp.logo.image transformation parameter. For target URL use the webhelp.logo.image.target.url parameter.

Menu

Helps you to navigate to your documentation. This component presents a set of links to all topics from your publication. For information about customizing the menu, see How to Customize the Menu on page 1089 topic.

Index terms link

Presents a link to the index terms page. You can control if this component is displayed by using the webhelp.show.indexterms.link parameter.

Search query input

Input text field allowing you to easily enter your search queries.

Tiles area

This section contains a tile for each root topic of the published documentation.

Topic Tile

A tile associated with a main topic. Each topic tile has three sections that corresponds to the topic title, short description, and image.

Topic Tile Title

Presents the navigation title of the associated topic.

Topic Tile Short Description

Presents the short description of the topic. It may be collected either from the topic or from the DITA map topic meta.

Topic Tile Image

Presents an image associated with the topic. The image association is done in the DITA map.

Tree area

An area containing topic titles from first and second level of your publication.

Page Footer

WebHelp Responsive output footer.

Topic Page

The *Topic Page* is the page generated for each DITA topic in the WebHelp Responsive output. The HTML pages produced for each topic consist of the topic content along with various other additional components, such as a title, menu, navigation breadcrumb, print icon, or side table of contents.

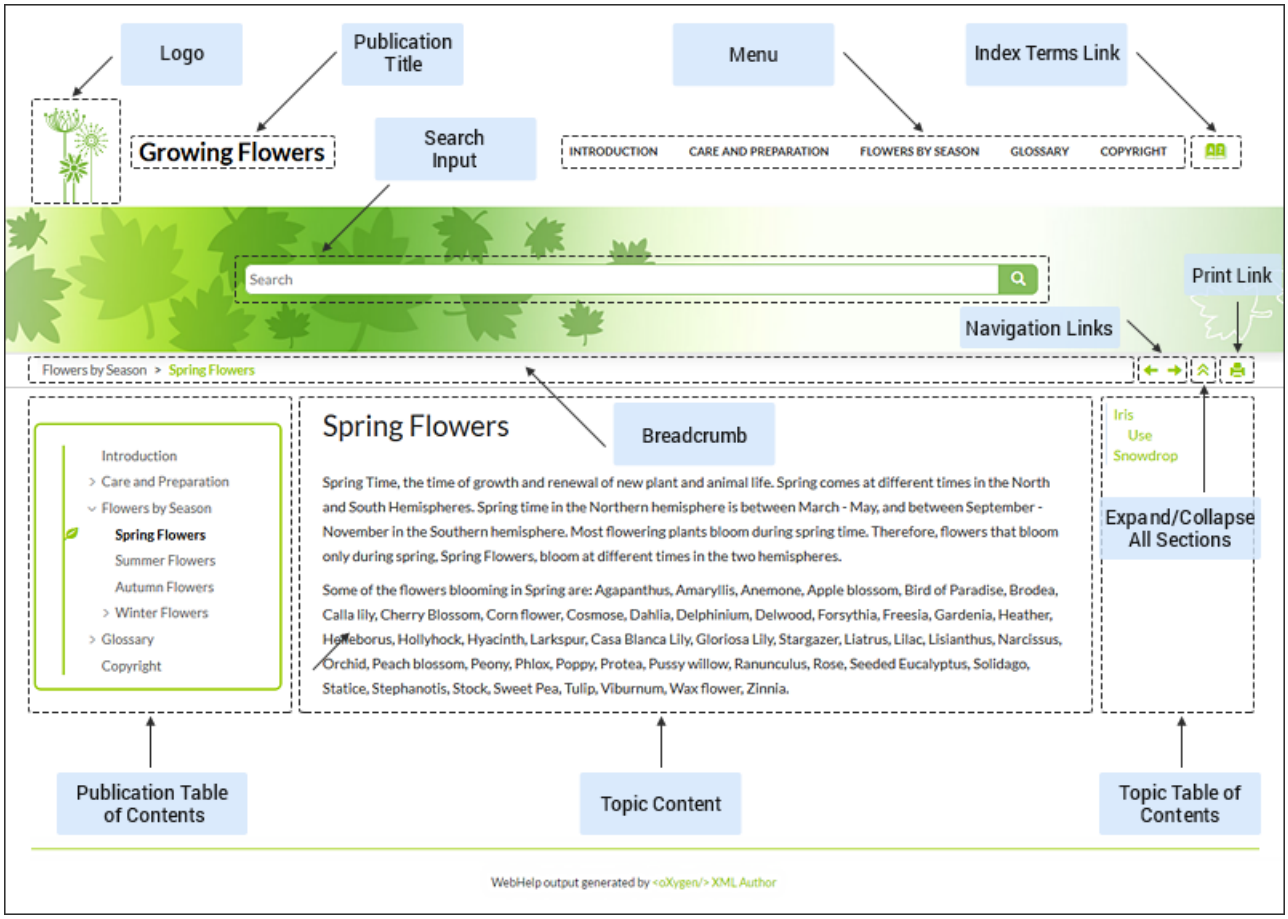


Figure 567: Topic Page

Topic Page Components

The layout components displayed in this page are:

Publication Title

The title of the publication. It is usually taken from the DITA map title.

Logo

Displays a logo associated with the publication. Additionally you can set a target URL that will be opened when you click on the logo image.

The logo image can be specified using the webhelp.logo.image transformation parameter. For target URL use the webhelp.logo.image.target.url parameter.

Menu

Helps you to navigate to your documentation. This component presents a set of links to all topics from your publication. For information about customizing the menu, see How to Customize the Menu on page 1089 topic.

Index terms link

Presents a link to the index terms page. You can control if this component is displayed by using the webhelp.show.indexterms.link parameter.

Print Icon

A print icon that opens the print dialog box for your particular browser.

Search query input

Input text field allowing you to easily enter your search queries.

Topic Content

Presents the content of the associated DITA topic.

Breadcrumb

Presents the path of the current displayed DITA topic in documentation.

Publication Table of Contents

A Table of Content for the publication displayed in the left side.

Topic Table of Contents

A Table of Content for the topic displayed on the right side. This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted.

Expand/Collapse Sections Icon

Icon that expands or collapses sections listed in the side table of contents within a topic.

Page Footer

WebHelp Responsive output footer.

Search Page

The *Search Page* presents search results in the WebHelp Responsive output. The HTML page consists of a search results component along with various other additional components, such as a title, menu, or index link.

When you enter search terms in the **Search** field, the results are displayed in a results page. When you click on a result, the topic is opened in the main pane and the search results are highlighted. If you want to remove the colored highlights, click the **Toggle Highlights** button at the top-right side of the page. The **Search** field also includes an *autocomplete* feature.

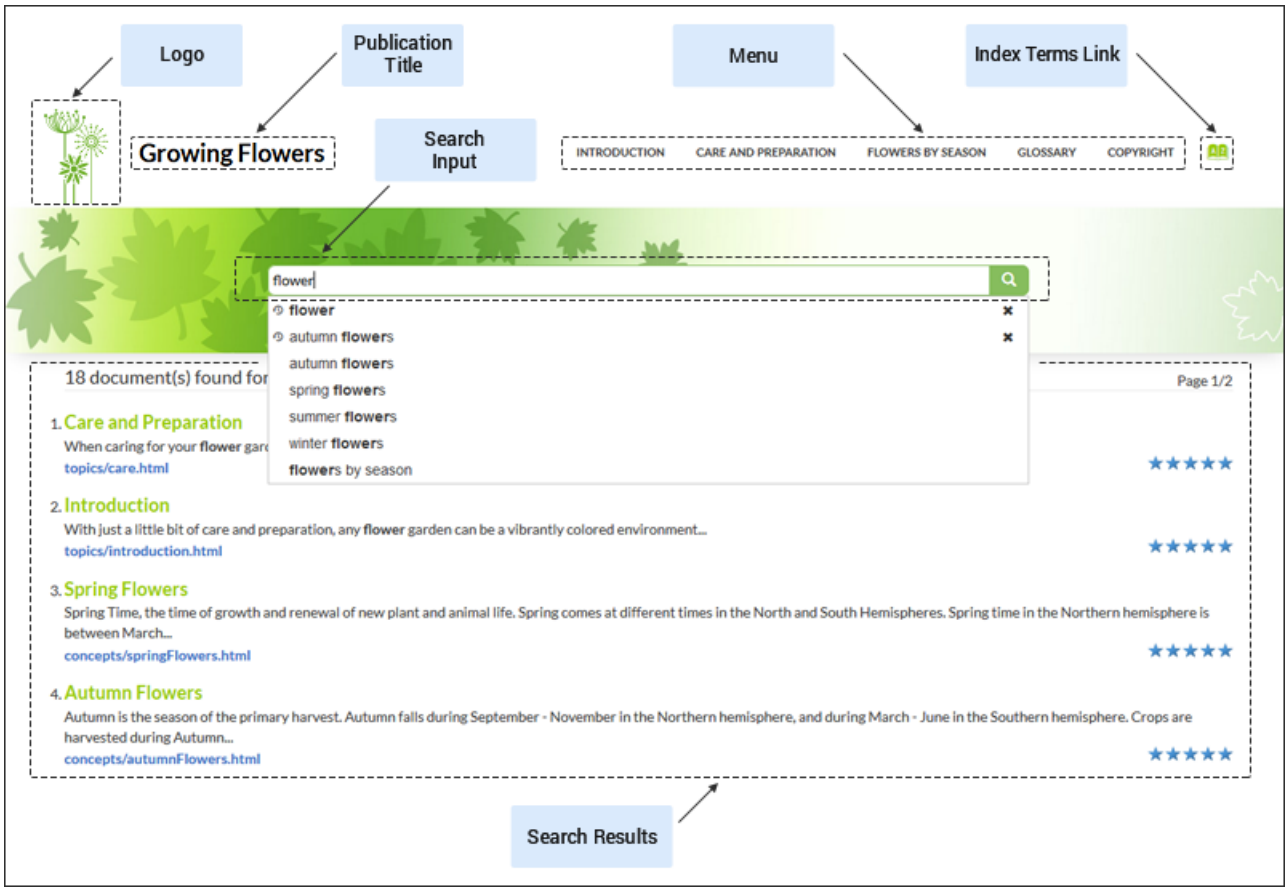


Figure 568: Search Results Page

Autocomplete Suggestions in the Search Text Field

When you are typing in the search text field, proposals are presented to help you to compute the search query. The information proposed when you are typing is collected from:

- The search queries from the history of the previous searches.
- The titles collected from your documentation.
- Documentation index terms and keywords. For example, in a DITA topic, the keywords and index terms are specified in the topic prolog section like this:

```
<prolog>
  <metadata>
 <keywords><indexterm>databases</indexterm></keywords>
 <keyword>installing</keyword>
 <keyword>uninstalling</keyword>
    <keyword>prerequisites</keyword>
  </metadata>
</prolog>
```

Missing Terms

If you enter multiple search terms (other than *stop words*), for any result that the search engine found at least one term but not one or more of the other terms, the **Missing** terms will be listed below each result.

Search Page Components

The layout components displayed in the search page are:

Publication Title

The title of the publication. It is usually taken from the DITA map title.

Logo

Displays a logo associated with the publication. Additionally you can set a target URL that will be opened when you click on the logo image.

The logo image can be specified using the webhelp.logo.image transformation parameter. For target URL use the webhelp.logo.image.target.url parameter.

Menu

Helps you to navigate to your documentation. This component presents a set of links to all topics from your publication. For information about customizing the menu, see How to Customize the Menu on page 1089 topic.

Index terms link

Presents a link to the index terms page. You can control if this component is displayed by using the webhelp.show.indexterms.link parameter.

Search query input

Input text field allowing you to easily enter your search queries.

Search results area

This section is where the search results are displayed.

Page Footer

WebHelp Responsive output footer.

Index Terms Page

The *Index Terms Page* page consists of an index terms section along with various other additional components, such as a title, menu, or search field.

An alphabet that contains the first letter of the documentation index terms is generated at the top of the index page. Each letter represents a link to a specific indices section. The indexes are presented in multiple columns to make it easier to read this page.

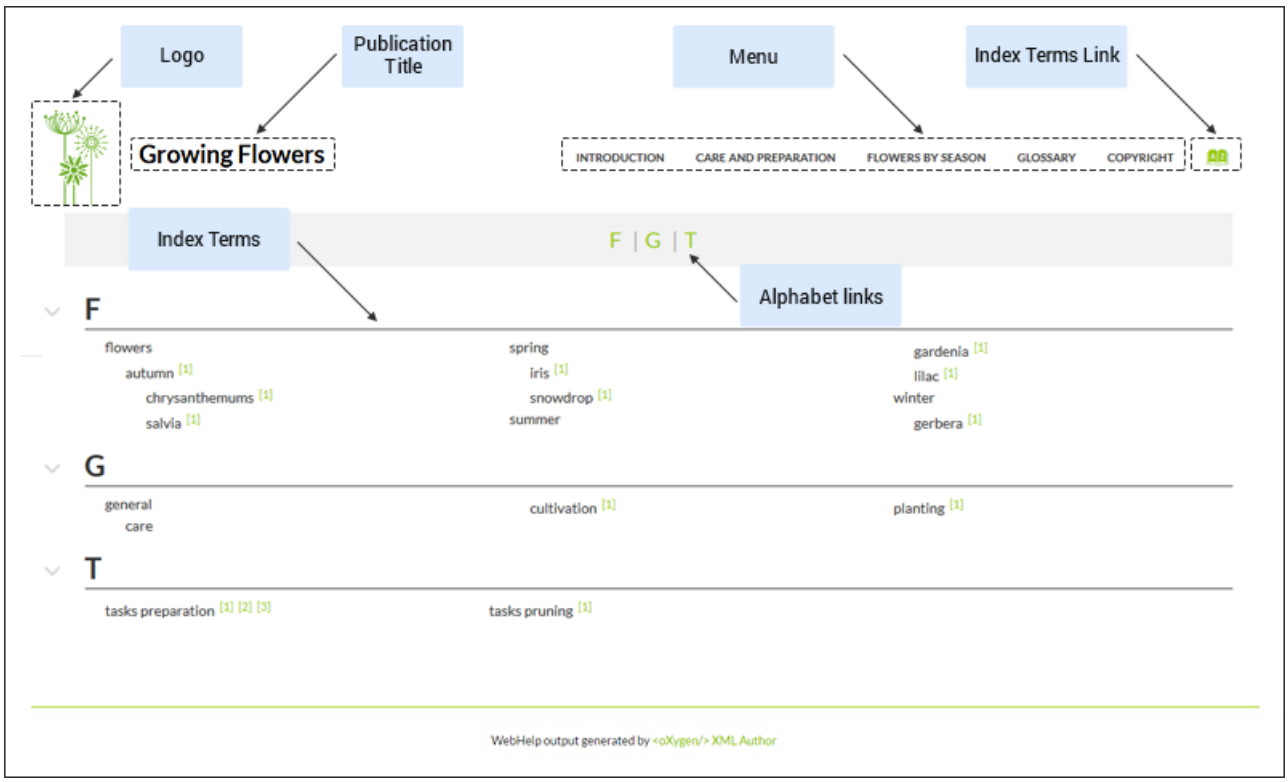


Figure 569: Index Terms Page

Index Terms Page Components

The layout components displayed in this page are:

Publication Title

The title of the publication. It is usually taken from the DITA map title.

Logo

Displays a logo associated with the publication. Additionally you can set a target URL that will be opened when you click on the logo image.

The logo image can be specified using the webhelp.logo.image transformation parameter. For target URL use the webhelp.logo.image.target.url parameter.

Menu

Helps you to navigate to your documentation. This component presents a set of links to all topics from your publication. For information about customizing the menu, see How to Customize the Menu on page 1089 topic.

Index terms link

Presents a link to the index terms page. You can control if this component is displayed by using the webhelp.show.indexterms.link parameter.

Index Terms Alphabet

An alphabet that contains the first letter of index terms. Each letter represents a link to a specific indices section.

Index Term First Letter

The first letter of the index.

Page Footer

WebHelp Responsive output footer.

Search Engine

Search engine has two main components:

Search indexer

It is also known as a **spider**. This component is active when you publish your documentation to WebHelp and it is responsible for creating the *search index*. This component traverses all HTML pages (for DITA topics) to gather information.

Search interface

This component is an interface between the user and the *search index*. It helps the user to search through the *search index* and displays results in the search page.

Search Rules

Rules that are applied during a search include:

- You can use quotes to perform an exact search for multiple word phrases (for example, *"grow flowers"* will only return results if both words are found consecutively and exactly as they are typed in the search field). This type of search is known as a *phrase search*.
- *Boolean Search* is supported using the following operators: *and*, *or*, *not*. When there are two adjacent search terms without an operator, *or* is used as the default search operator (for example, *grow flowers* is the same as *grow or flowers*).
- The space character separates keywords (an expression such as *grow flowers* counts as two separate keywords: *grow* and *flowers*).
- `indexterm` and `keywords` DITA elements are an effective way to increase the ranking of a page (for example, content inside a *keywords* element weighs more than an *H1* HTML element).
- Words composed by merging two or more words with colon (":"), minus ("-"), underline ("_"), or dot (".") characters count as a single word.
- Your search terms should contain two or more characters (note that stop words will be ignored). This rule does not apply to CJK (Chinese, Japanese, Korean) languages.

5-Star Rating Mechanism and Sorting

The **Search** feature is also enhanced with a rating mechanism that computes scores for every result that matches the search criteria. These scores are then translated into a 5-star rating scheme and the stars are displayed to the right of each result. The search results are sorted depending on the following:

- Search entries that satisfy the phrase search criterion are presented first.
- The number of keywords found in a single page (the higher the number, the better).
- The context (for example, a word found in a title scores better than a word found in unformatted text). The search ranking order, sorted by relevance is as follows:
  - The search term is included in a meta keyword
  - The search term is in the title of the page
  - The search term is in bold text in a paragraph
  - The search term is in normal text in a paragraph

Tag Element Scoring Values

HTML tag elements are also assigned a scoring value and these values are evaluated for the search results. For information about editing these values, see How to Change Element Scoring in Search Results on page 1096.

Excluded Terms

To improve performance, the **Search** feature excludes certain *stop words*. For example, the English version of such *stop words* include: *a, an, and, are, as, at, be, but, by, for, if, in, into, is, it, no, not, of, on, or, such, that, the, their, then, there, these, they, this, to, was, will, with*.

Feedback System

The **WebHelp Responsive with Feedback** variant contains a **Comments** section at the bottom of each topic. This section is where you can interact with users through a comment system. For information about deploying a feedback-enabled system, see Deploying a Feedback-Enabled System on page 1050.

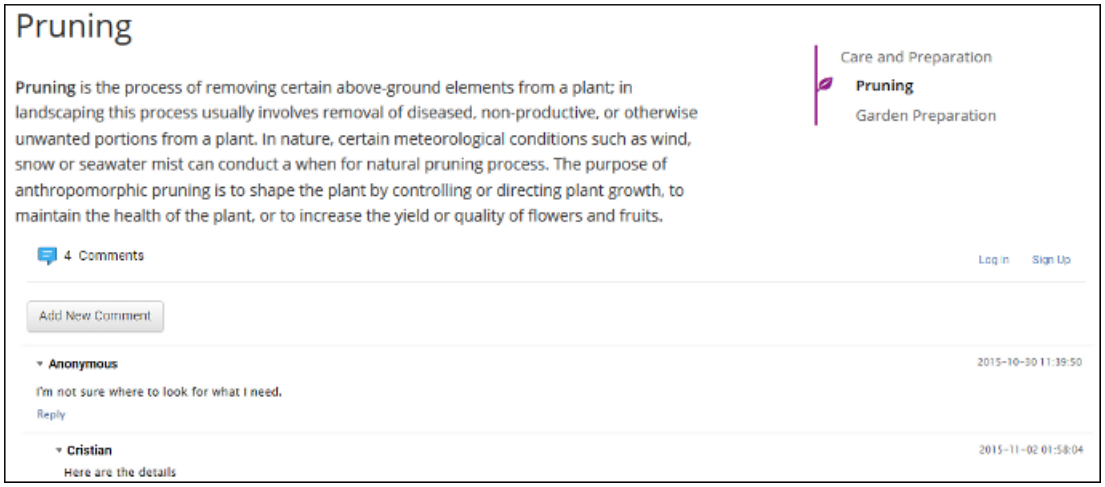


Figure 570: WebHelp Responsive with Feedback Comments Section

To add a new comment, click the **Add New Comment** button, or click **Reply** to add a comment to an existing thread. You can click on the **Log in** button on the right side of this bar to be authenticated as a user and your user name will be included in any comments that you add. If you do not have a user name, you can click on the **Sign Up** button to create a new user.

After you log in, your name and user name are displayed in the **Comments** bar, along with the **Log off** and **Edit** buttons. Click the **Edit** button to open the **User Profile** dialog box where you can customize the following options:

- **Your Name** - You can use this field to edit the initial name that you used to create your user profile.
- **Your email address** - You can use this field to edit the initial email address that you used to create your profile.
- You can choose to receive an email in the following situations:

    - When a comment is left on a page that you commented on.
    - When a comment is left on any topic in the WebHelp Classic system.
    - When a reply is left to one of my comments.
- **New Password** - Allows you to enter a new password for your user account.

  Note: The **Current Password** field from the top of the **User Profile** is mandatory if you want to save the changes you make.

If you are an administrator, you can manage user information and comments. For more information, see Managing Users and Comments in a Feedback-Enabled System on page 1052.

Related Information:

Deploying a Feedback-Enabled System on page 1050

Deploying a Feedback-Enabled System

System Requirements

The feedback-enabled WebHelp system requires a standard server deployment. You can request this from your server administrator and it requires the following system components:

- A Web server (such as *Apache Web Server*)
- A *MySQL* or *MariaDB* database server
- A database admin tool (such as *phpMyAdmin*)
- PHP Version 5.1.6 or later

The WebHelp system supports most of the recent versions of the following browsers: Chrome, Firefox, Edge, Internet Explorer, Safari, Opera.

Create WebHelp with Feedback Database

The **WebHelp with Feedback** system needs a database to store user details and the actual feedback, and a user added to it with all privileges. After this is created, you should have the following information:

- Database name
- Username
- Password

Exactly how you create the database and user depends on your web host and your particular needs.

Example:

The following procedure uses *phpMyAdmin* to create a MySQL database for the feedback system and a MySQL user with privileges for that database. The feedback system uses these credentials to connect to the database.

Using *phpMyAdmin* to create a database:

1. Access the *phpMyAdmin* instance running on your server.
2. Click *Databases* (in the right frame) and then create a *database*. You can give it any name you want (for example *comments*).
3. Create a user with connection privileges for this database.
4. Under *localhost*, in the right frame, click *Privileges* and then at the bottom of the page click the **reload the privileges** link.

Deploying the WebHelp with Feedback Output

If you have a web server configured with PHP and MySQL, you can deploy the **WebHelp with Feedback** output by following these steps:

1. Connect to your server using an FTP client.
2. Locate the home directory (from now on, referred to as *DOCUMENT_ROOT*) of your server.
3. Copy the transformation output folder into the `DOCUMENT_ROOT` folder.
4. Rename it to something relevant (for example, `myProductWebHelp`).

5. Open the output folder (for example, `http://[YOUR_SERVER]/myProductWebHelp/`). You are redirected to the installation wizard. Proceed with the installation as follows:
   a. Verify that the prerequisites are met.
   b. Press **Start Installation**.
   c. Configure the **Deployment Settings** section. Default values are provided, but you should adjust them as needed.

      Tip: You can change some of the options later. The installation creates a `config.php` file in `[OXYGEN_WEBHELP_INSTALL_DIR]/feedback/resources/php/config/config.php` where all your configuration options are stored.
   d. Configure the **MySql Database Connection Settings** section. Use the information (database name, username, password) from the Create WebHelp with Feedback Database section to fill-in the appropriate text boxes.

      Warning: Selecting the **Create new database structure** option will overwrite any existing data in the selected database, if it already exists. Therefore, it is useful the first time you install the **WebHelp with Feedback** system, but you do not want to select this option on subsequent deployments.
   e. If you are using a domain (such as *OpenLDAP* or *Active Directory*) to manage users in your organization, select the **Enable LDAP Autehntication** option. This will allow you to configure the LDAP server, which will provide information and credentials for users who will access the WebHelp system. Also, this will allow you to choose which of the domain users will have administrator privileges.
   f. If the **Create new database structure** option is selected, the **Create WebHelp Administrator Account** section becomes available. Here you can set the administrator account data. The administrator is able to moderate new posts and manage WebHelp users.

      The same database can be used to store comments for multiple **WebHelp with Feedback** deployments. If a topic is available in multiple deployments and there are comments associated with it, you can choose to display the comments in all deployments that share the database. To do this, select the **Display comments from other products** option. In the **Display comments from** section, a list with the deployments sharing the same database is displayed. Select the deployments allowed to share common feedback.

      Note: You can restrict the displayed comments of a product depending on its version. If you have two products that use the same database and you restrict one of them to display comments starting from a certain version, the comments of the other product are also displayed from the specified version onwards.
   g. Press **Next Step**.
   h. Remove the installation folder from your web server.

      Important: When you publish subsequent iterations of your **WebHelp with Feedback** system, you will not upload the `/install` folder in the output, as you only need it uploaded the first time you create the installation. On subsequent uploads, you will just upload the other output files.
   i. In your Web browser, go to your **WebHelp with Feedback** system main page.

Testing Your WebHelp with Feedback System

To test your system, create a user and post a comment. Check to see if the notification emails are delivered to your email inbox.

Note: To read debug messages generated by the system:

1. Enable *JavaScript* logging by doing one of the following:
   - Open the `log.js` file, locate the `var log= new Log(Level.NONE);` line, and change the logging level to: `Level.INFO`, `Level.DEBUG`, `Level.WARN`, or `Level.ERROR`.
   - Append `?log=true` to the WebHelp URL.
2. Inspect the PHP and Apache server log files.

Documentation Product ID and Version

When you run a **WebHelp with Feedback** transformation scenario, by default you are prompted for a documentation product ID and version number. This is needed when multiple WebHelp systems are deployed on the same server. Think of your WebHelp output as a *product*. If you have three different WebHelp outputs, you

have three different *products* (each with their own unique documentation product ID). This identifier is included in a configuration file so that comments are tied to a particular output (product ID and version number).

Note: The **WebHelp with Feedback** installation includes a configuration option (**Display comments from other products**) that allows you to choose to have comments visible in other specified *products*.

Related Information:

Managing Users and Comments in a Feedback-Enabled System on page 1052

Refreshing the Content of a Feedback-Enabled System

It is common to update the content of an existing installation of a **WebHelp with Feedback** system on a regular basis. In this case, reinstalling the whole system is not a viable option since it might result in the loss of the comments associated with your topics. Also, reconfiguring the system every time you want to refresh it may be time consuming.

Fortunately, you can refresh just the content without losing the comments or the initial system configuration. To do so, follow these steps:

1. Execute the transformation scenario that produces the *WebHelp with Feedback* output directory.
2. Go to the output directory (specified in the **Output** tab of the transformation scenario), locate the `\feedback\resources\php\config\config.php` file, and delete it.
3. Locate the `\feedback\install` directory and delete it.
4. Copy the remaining structure of the output folder and paste it into your *WebHelp with Feedback* system installation directory, overwriting the existing content.

Managing Users and Comments in a Feedback-Enabled System

When you installed the **WebHelp with Feedback** system the first time (assuming the **Create new database structure** option was selected), you should have been prompted to create an administrator account (or a user named *administrator* was created by default). As an administrator, you have access to manage comments posted in your feedback-enabled WebHelp system. You can also manage the user information (such as role, status, or notification options).

To manage comments and user information, follow these steps:

1. At the bottom of each specific topic there is a **Comments** navigation bar and on the right side there is a **Log in** button. Click this button and log in with your administrator credentials. This gives you access to an **Admin Panel** button.
2. Click the **Admin Panel** button to display an administration page.

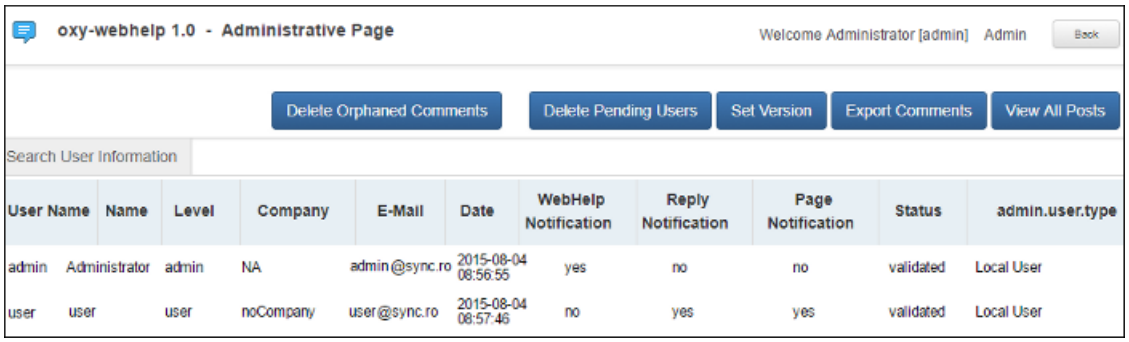


Figure 571: Administrative Page

3. Use this page to manage the following options:

Delete Orphaned Comments

Allows you to delete comments that are no longer associated with a topic in your WebHelp system.

Delete Pending Users

Allows you to delete user accounts that you do not wish to activate.

View All Posts

Allows you to view all the comments that are associated with topics in your WebHelp system.

Export Comments

Allows you to export all posts associated with topics in your WebHelp system into an XML file.

Set Version

Use this action to display comments starting with a particular version.

Manage User Information

To edit the details for a user, click on the corresponding row. This opens a window that allows you to customize the following information associated with the user:

Name

The full name of the user.

Level

Use this field to modify the privilege level (role) for the selected user. You can choose from the following:

- **User** - Regular user, able to post comments and receive e-mail notifications.
- **Moderator** - In addition to the regular **User** rights, this type of user has access to the **Admin Panel** where a moderator can view, delete, export comments, and set the version of the feedback-enabled WebHelp system.
- **Admin** - Full administrative privileges. Can manage WebHelp-specific settings, users, and their comments.

Company

The name of the organization associated with the user.

E-Mail

The contact email address for the user. This is also the address where the WebHelp system sends notifications.

WebHelp Notification

When selected, the user receives notifications when comments are posted anywhere in your feedback-enabled WebHelp system.

Reply Notification

When selected, the user receives notifications when comments are posted as a reply to one of their comments.

Page Notification

When selected, the user receives notifications when comments are posted on a topic where they previously posted a comment.

Date

The date the user registered is displayed.

Status

Use this drop-down list to change the status of the user. You can choose from the following:

- **Created** - The user is created but does not yet have any rights for the feedback-enabled WebHelp system.
- **Validated** - The user is able to use the feedback-enabled WebHelp system.
- **Suspended** - The user has no rights for the feedback-enabled WebHelp system.

Warning: The key used for identifying the page a comment is attached to is the relative file path to the output page. Since the output file and folder names mirror the source, any change to the file name (or its folder) in the source will affect the comments associated with that WebHelp page. If you change the file name or path, the comment history for that topic will become orphaned (a change to the topic ID does not affect the comment history).

Context-Sensitive Help System

Context-sensitive help systems assist users by providing specific informational topics for certain components of a user interface, such as a button or window. This mechanism works based on mappings between a unique ID defined in the topic and a corresponding HTML page.

Generating Context-Sensitive Help

When WebHelp Responsive output is generated, the transformation process produces an XML mapping file called `context-help-map.xml` and copies it in the output folder of the transformation. This XML file maps an ID to a corresponding HTML page through an `appContext` element, as in the following example:

```
<map productID="oxy-webhelp" productVersion="1.1">
  <appContext helpID="myapp-functionid1" path="tasks/app-help1.html"/>
  <appContext helpID="myapp-functionid2" path="tasks/app-help1.html"/>
    . . .
</map>
```

The possible attributes are as follows:

`helpID`

A Unique ID provided by a topic from two possible sources (`resourceid` element or `id` attribute):

`resourceid`

The `resourceid` element is mapped into the `appContext` element and can be specified in either the `topicref` within a *DITA map* or in a `prolog` within a DITA topic. The `resourceid` element accepts the following attributes:

- **`appname`** - A name for the external application that references the topic. If this attribute is not specified, its value is considered to be empty (" ").
- **`appid`** - An ID used by an application to identify the topic.
- **`id`** - Specifies a value that is used by a specific application to identify the topic, but this attribute is ignored if an **`appid`** attribute is used.

Note: Multiple `appid` values can be associated with a single `appname` value (and multiple `appname` values can be associated with a single `appid` value), but the values for both attributes work in combination to specify a specific ID for a specific application, and therefore each combination of values for the `appid` and `appname` attributes should be unique within the context of a single *root map*. For example, suppose that you need two different functions of an application to both open the same WebHelp page.

Example: `resourceid` Specified in a DITA Map

The `resourceid` element can be specified in a `topicmeta` element within a `topicref`.

```
<map title="App Help">
  <topicref href="app-help1.dita" type="task">
     <topicmeta>
       <resourceid appname="myapp" appid="functionid1"/>
       <resourceid appname="myapp" appid="functionid2"/>
     </topicmeta>
  </topicref>
</map>
```

Example: `resourceid` Specified in a DITA Topic

The `resourceid` element can be specified in a `prolog` element within a DITA topic.

```
<task id="app-help1">
  <title>My App Help</title>
  <prolog>
    <resourceid appname="myapp" appid="functionid1"/>
    <resourceid appname="myapp" appid="functionid2"/>
  </prolog>
...
</task>
```

For more information about the `resourceid` element, see DITA Specifications: <resourceid>.

`id`

If a `resourceid` element is not declared in the *DITA map* or DITA topic (as described above), the `id` attribute that is set on the topic root element is mapped into the `appContext` element.

Important: You should ensure that these defined IDs are unique in the context of the entire DITA project. If the IDs are not unique, the transformation scenario will display warning messages in the transformation console output and the help system will not work properly.

`path`

The path to a corresponding WebHelp page. This path is relative to the location of the `context-help-map.xml` mapping file.

`productID` (Applicable only if you are using the WebHelp Responsive with Feedback transformation scenario)

The ID of the product for your documentation project.

`productVersion` (Applicable only if you are using the WebHelp Responsive with Feedback transformation scenario)

The version of the product for your documentation project.

There are two ways of implementing context-sensitive help in your system:

- The XML mapping file can be loaded by a PHP script on the server side. The script receives the `contextId` value and will look it up in the XML file.
- Invoke the `index.html` WebHelp system file and pass the `contextId` parameter with a specific value. The WebHelp system will automatically open the help page associated with the value of the `contextId` parameter.

```
index.html?contextId=myDITATopic
```

Note: The `contextId` parameter is not case sensitive.

Context-Sensitive Queries

You can use the URL field in your browser to search for topics in a context-sensitive WebHelp system with the assistance of the following parameters:

- **contextId** - The WebHelp JavaScript engine will look for this value in the `context-help-map.xml` mapping file and load the corresponding help page.

  Note: You can use an *anchor* in the `contextId` parameter to jump to a specific section in a document. For example, `contextId=topicID#anchor`.
- **appname** - You can use this parameter in conjunction with `contextId` to search for this value in the corresponding *appname* attribute value in the mapping file.

```
http://localhost/webhelp/index.html?contextId=topicID&appname=myApplication
```

Another parameter indicates the search query:

- **searchQuery** - You can use this parameter to perform a search operation when WebHelp is loaded. For example, if you want to open WebHelp showing all search results for *growing flowers*, the URL should look like this: `http://localhost/webhelp/index.html?searchQuery=growing%20flowers`.

Publishing Templates

An *Oxygen Publishing Template* defines all aspects of the layout and styles for **WebHelp Responsive** output. It is a self-contained customization package stored as a ZIP archive or folder that can easily be shared with others. It provides the primary method for customizing the output.

Some possible customizations include:

- Add additional template resources to customize the output (such as logos, favicons, or CSS files).
- Change the layout of the main page or topic pages by customizing which components will be displayed and where they will be positioned in the page.
- Extend the default processing by specifying one or more XSLT extension points.
- Specify one or more transformation parameters to customize the output.

The following graphic is sample structure for an *Oxygen Publishing Template* package:

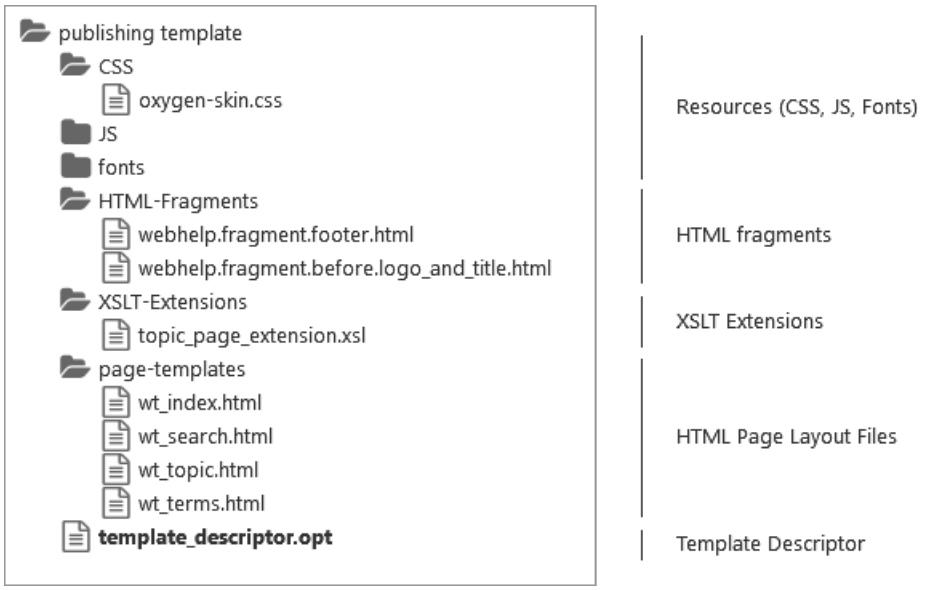


Figure 572: Oxygen Publishing Template Package

Related Information:

How to Create a Publishing Template on page 1084
How to Edit a Publishing Template on page 1084
How to Add a Publishing Template to the Publishing Templates Gallery on page 1084
How to Use a Publishing Template from Command Line on page 1084

Publishing Templates Gallery

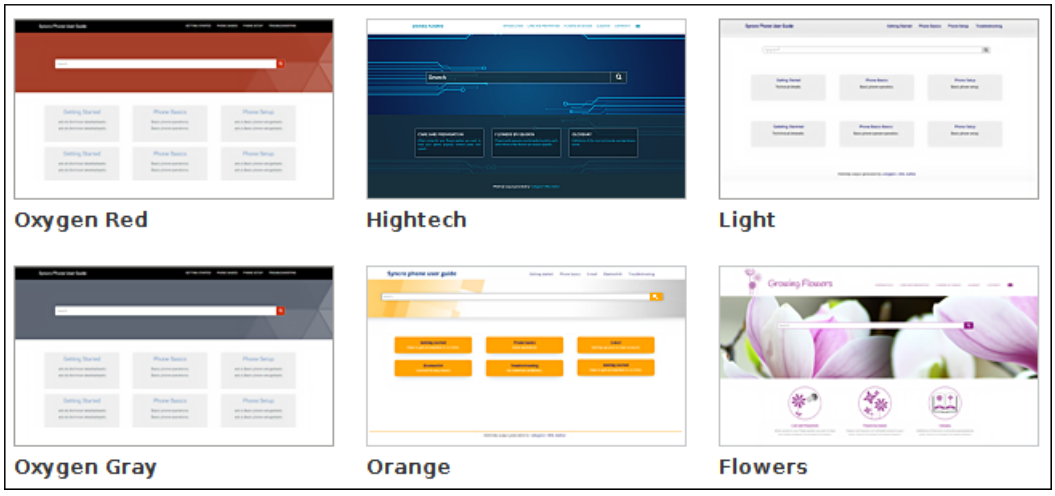
Oxygen XML Editor plugin comes bundled with a variety of built-in templates. You can use one of them to publish your documentation or as a starting point for a new publishing template.

Built-in Templates

There are two categories of templates, *Tiles* and *Tree*. You can see the built-in templates in the **Templates** tab when editing a WebHelp Responsive transformation scenario in **Oxygen XML Editor/Author**. Each one also includes an **Online preview** link that opens a webpage in your default browser that provides a sample of how the main page will look when that particular template is used to generate the output.

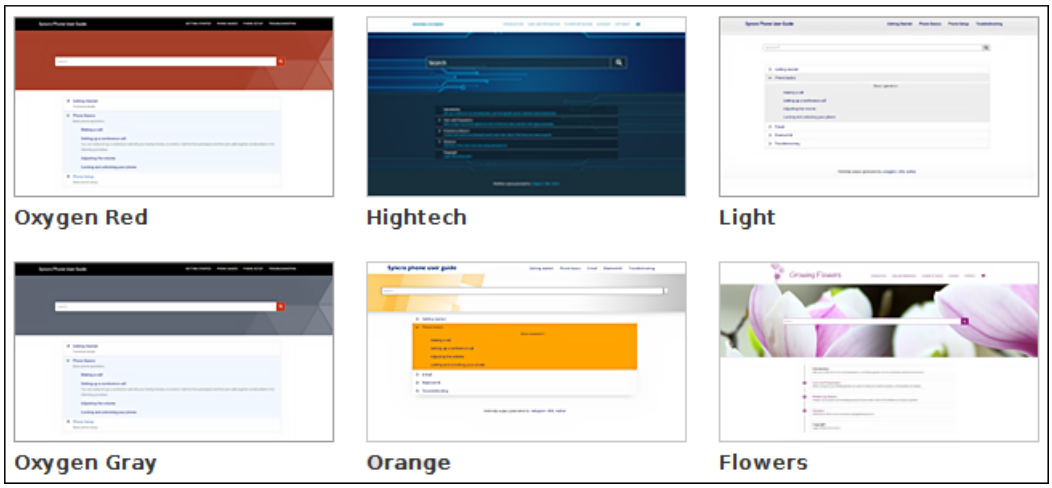
Tiles Templates

The main page in the WebHelp output presents a tile for each main topic (chapter) of the documentation.



Tree Templates

The main page in the WebHelp output presents a tree-like table of contents.



Built-in Templates Location

All built-in templates are stored in the following directory: *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/templates`.

Custom Templates

You can use a built-in template as a starting point for creating your own custom template. You can store all of your custom templates in a particular directory. Then, go to **Options** > **Preferences** > **DITA** > **Publishing** and add your directory to the list, and all the templates stored in that directory will be displayed in the preview pane in the transformation scenario's **Template** tab along with all the built-in templates.

Sharing Publishing Template

To share a publishing template with others, following these steps:

1. Copy your template in a new folder.
2. Go to **Options** > **Preferences** > **DITA** > **Publishing** and add that new folder to the list.
3. Switch the option as the bottom of that preferences page to **Project Options**.
4. Share your project file (`.xpr`).

Publishing Template Package Contents

An *Oxygen Publishing Template* package must contain a template descriptor file and some other resources (such as CSS files). All the template resources can be stored in either a ZIP archive or in a folder. It is recommended to use a ZIP archive because it is easier to share with others.

Template Descriptor File

Each publishing template includes a descriptor file that defines the meta-data associated with template. It is an XML file that defines all the resources included in a template (such as HTML page layout files, CSS, JS, fonts, and transformation parameters).

The template descriptor file must have the `.opt` file extension and must be located in the templates' root folder.

A template descriptor might look like this:

```
<publishing-template>
    <name>Flowers</name>

    <webhelp>
        <tags>
            <tag>tree</tag>
            <tag>light</tag>
        </tags>
        <preview-image file="flowers-tree.png"/>
```

```
        <!-- Resources (CSS, favicon, logo and others) -->
        <resources>
            <!-- Main CSS file -->
            <css file="flowers.css"/>

             <!-- Resources to copy to the output folder -->
            <fileset>
                <include name="resources/**/*"/>
                <exclude name="resources/**/.svn"/>
                <exclude name="resources/**/.git"/>
            </fileset>
        </resources>

        <parameters>
            <parameter name="webhelp.show.main.page.tiles" value="no"/>
            <parameter name="webhelp.show.main.page.toc" value="yes"/>
            <parameter name="webhelp.top.menu.depth" value="3"/>
        </parameters>
    </webhelp>
</publishing-template>
```

Tip: It is recommended to edit the template descriptor in **Oxygen XML Editor/Author** because it provides content completion and validation support.

Template Name and Description

Each template descriptor file requires a **name** element. This information is displayed as the name of the template in the transformation scenario dialog box.

Optionally, you can include a **description** and it displayed when the user hovers over the template in the transformation scenario dialog box.

```
<publishing-template>
    <name>Lorem Ipsum</name>
    <description>Lorem ipsum dolor sit amet, consectetur adipiscing elit</description>
    ...
```

Template Author

Optionally, you can include author information in the descriptor file and it displayed when the user hovers over the template in the transformation scenario dialog box. This information might be useful if users run into an issue or have questions about a certain template.

If you include the **author** element, a **name** is required and optionally you can include **email**, **organization**, and **organizationUrl** information.

```
<publishing-template>
    ...
    <author>
      <name>John Doe</name>
      <email>jdoe@example.com</email>
      <organization>ACME</organization>
      <organizationUrl>http://www.example.com/jdoe</organizationUrl>
    </author>
    ...
```

Webhelp Element

The **webhelp** element contains various details that define the WebHelp Responsive output. The elements that are allowed in this **webhelp** section specify the template tags, template preview image, resources (such as CSS, JS, fonts, logos), HTML page layout files, transformation parameters, HTML fragment extensions (used to add fragments to placeholders), or XSLT extensions.

```
    <webhelp>
        <tags>
          ...
        </tags>
        <preview-image file="MyPreview.png"/>

        <resources>
          ...
        </resources>

        <html-page-layouts>
          ...
        </html-page-layouts>
```

```
        <parameters>
          ...
        </parameters>
    </webhelp>
```

Template Tags

The **tags** section provides meta information about the template (such as layout type or color theme). Each **tag** is displayed at the top of the **Templates** tab window in the transformation scenario dialog box and they help the user filter and find particular templates.

```
<publishing-template>
    ...
    <webhelp>
      <tags>
        <tag>tree</tag>
        <tag>dark</tag>
      </tags>
```

Template Preview Image

The **preview-image** element is used to specify an image that will be displayed in the transformation scenario dialog box. It provides a visual representation of the template to help the user select the right template. The image dimensions should be `200 x 115` pixels and the supported image formats are: `JPEG`, `PNG`, or `GIF`.

You can also include an **online-preview-url** element to specify the URL of a published sample of your template. This will display an **Online preview** link inside the image in the transformation scenario dialog box and if the user clicks that link, it will open the specified URL in their default browser.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <preview-image file="ashes/ashes-tree.png"/>
      <online-preview-url=https://www.example.com/samples/tiles/ashes</online-preview-url>
```

Template Resources

The **resources** section of the descriptor file specifies a set of resources (CSS, JS, fonts, logos, etc.) that are used to customize various components in generated output. These resources will be copied to the output folder during the transformation process. At least one CSS file must be included, while the other types of resources are optional.

The types of resources that can be specified include:

- **CSS files** - One or more CSS files that will define the styles of all generated HTML pages.
- **Favicon** - You can specify the path to an image for the *favicon* associated with your website.
- **Logo** - You can specify the path to a logo image that will be displayed in the left side of the output header. Optionally, you can also specify a **target-url** that will redirect the user to the specified URL if they click the logo in the output.
- **Additional Resources (JS, Fonts)** - You can specify one or more sets of additional resources that will be copied to the output folder during the transformation process. These resources are specified with the **fileset** element and you can use one or more **include** and **exclude** elements. This semantic is similar to the ANT FileSet.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <resources>
          <css file="css/custom_styles.css"/>
          <css file="css/custom_fonts.css"/>

          <favicon file="images/favicon.png"/>

          <logo
           file="images/logo.png"
           target-url="http://www.example.com"/>

          <fileset>
              <include name="common/**/*"/>
              <include name="JS/**/*"/>
              <exclude name="**/*.svn"/>
```

```
            <exclude name="**/*.git"/>
        </fileset>
    </resources>
```

Note: All relative paths specified in the descriptor file are relative to the template root folder.

The resources specified in the template descriptor are copied to the following output folder: *[WebHelp_OUTPUT_DIR]*`/oxygen-webhelp/template`. The following graphic illustrates the mapping between the template resources and the location where they will be copied to the output folder:

Figure 573: Template Resources Mapping

HTML Page Layout Files

The HTML page layout files define the layout of the generated pages in the output. There are four types of pages (*main*, *search*, *topic*, *index*) and each type of page is a simple HTML file. Each type of page is defined inside an **html-page-layout-files** element in the descriptor file.

```
<publishing-template>
    ...
    <webhelp>
    ...
    <!-- HTML page layout files -->
    <html-page-layout-files>
      <page-layout-file page="main" file="page-templates/wt_index.html"/>
      <page-layout-file page="search" file="page-templates/wt_search.html"/>
      <page-layout-file page="topic" file="page-templates/wt_topic.html"/>
      <page-layout-file page="index-terms" file="page-templates/wt_terms.html"/>
    </html-page-layout-files>
```

These HTML files are not required in the descriptor file, but if you do use the **html-page-layout-files** element, you must specify all four types of pages (*main*, *search*, *topic*, *index*). If you do not specify these HTML page layout files, the files from the *[WebHelp_OUTPUT_DIR]*`/oxygen-webhelp/page-templates` folder will be used to define the layout of each type of page.

HTML Page Components

Each type of page contains various components that control the layout of that page. The rendering of each component depends on the context where it is placed and its content depends on the transformed *DITA map*.

Some of the components can be used in all four types of pages, while some are only available for certain pages. For instance, the *Publication Title* component can be used in all pages, but the *Navigation Breadcrumb* component can only be used in the **Topic Page**.

To include a component in the output of a particular type of page, you have to reference a specific element in that particular HTML file. All the elements associated with a component should belong to the `http://www.oxygenxml.com/webhelp/components` namespace.

Every component can contain custom content or reference another component. To specify where the component content will be located in the output, you can use the whc`:component_content` element as a descendant of

the component element. It can specify the location as before, after, or it can wrap the component content. The following snippet contains an example of each:

```
<whc:webhelp_search_input class="navbar-form wh_main_page_search"
       role="form" >
       <div class="custom-content-before">Enter search terms here:</div>
 <div class="custom-wrapper">
        <whc:component_content/>
 </div>
       <div class="custom-content-after">Results will be displayed in a new window.</div>
</whc:webhelp_search_input>
```

Main Page

The *Main Page* is the home page generated in the WebHelp Responsive output. The name of the HTML file that defines this page is `wt_index.html` and it is located in the following directory: *[WebHelp_OUTPUT_DIR]*`/oxygen-webhelp/page-templates`.

The main function of the home page is to display top level information and provide links that help you easily navigate to any of the top level topics of the publication. These links can be rendered in either a *Tiles* or *Tree* style of layout. The HTML page produced for the home page also consists of various other components, such as a logo, title, menu, search field, or index link.

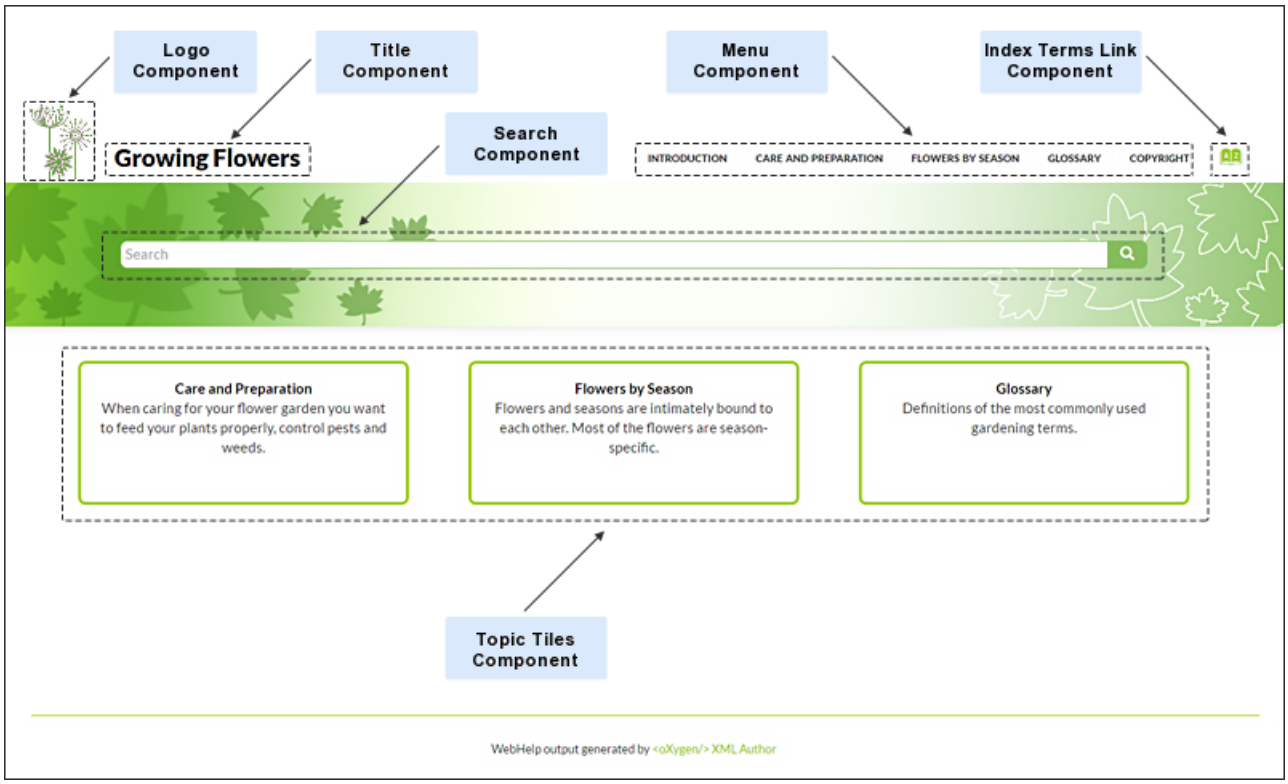


Figure 574: Examples of Main Page Components for a Tiles Style of Layout

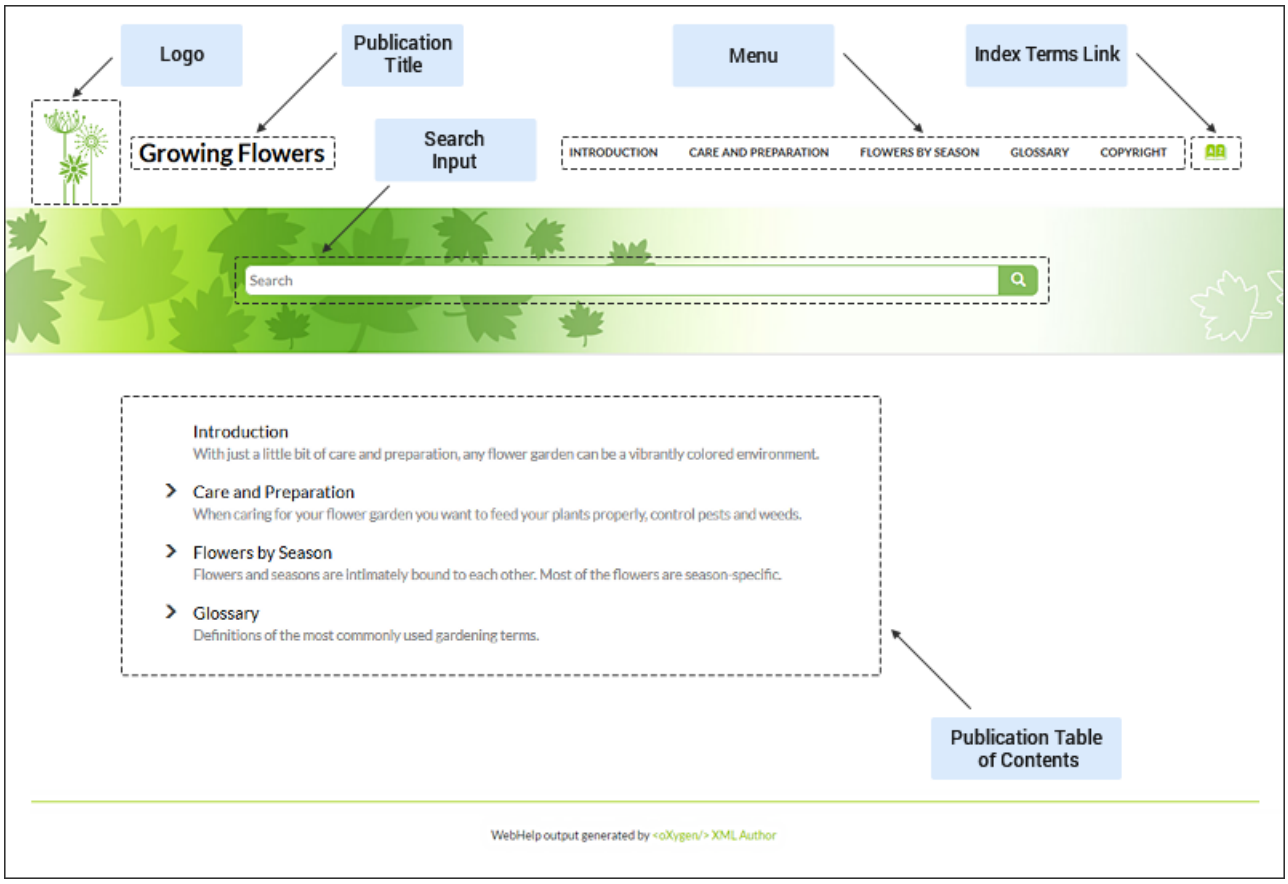


Figure 575: Examples of Main Page Components for a Tree Style of Layout

The following components can be referenced in the *Main Page* (`wt_index.html`) file:

Publication Title (`webhelp_publication_title`)

This component generates the publication title in the output. To generate this component, the `webhelp_publication_title` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_publication_title
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_publication_title`.

Publication Logo (`webhelp_logo`)

This component generates a logo image in the output. To generate this component, the `webhelp_logo` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_logo
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In addition, you must also specify the path of the logo image in the `webhelp.logo.image` transformation parameter (in the **Parameters** tab in the transformation scenario). You can set the `webhelp.logo.image.target.url` parameter to generate a link to a URL when you click the logo image.

In the output, you will find an element with the class: `wh_logo`.

Search Input (`webhelp_search_input`)

This component is used to generate the input widget associated with search function in the output. To generate this component, the `webhelp_search_input` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_search_input
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_search_input`.

Print Link (`webhelp_print_link`)

This component is used to generate a print icon that opens the print dialog box for your particular browser. To generate this component, the `webhelp_print_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_print_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_print_link`.

Main Page Menu (`webhelp_topics_menu`)

This component generates a menu with all the documentation topics. To generate this component, the `webhelp_topics_menu` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topics_menu
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topics_menu`.

You can control the maximum level of topics that will be included in the menu using the `webhelp.top.menu.depth` transformation parameter (in the **Parameters** tab of the transformation scenario).

For information about customizing the menu, see How to Customize the Menu on page 1089.

Main Page Topic Tiles (`webhelp_tiles`)

This component generates the tiles section in the main page. This section will contain a tile for each root topic of the published documentation. Each topic tile has three sections that corresponds to the topic title, short description, and image. To generate this component, the `webhelp_tiles` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_tiles
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_tiles`.

If you want to control the HTML structure that is generated for a WebHelp tile you can also specify the template for a tile by using the `whc:webhelp_tile` component, as in the following example:

```
<whc:webhelp_tile class="col-md-4">
  <!-- Place holder for tile's image -->
  <whc:webhelp_tile_image/>

  <div class="wh_tile_text">
    <!-- Place holder for tile's title -->
     <whc:webhelp_tile_title/>

     <!-- Place holder for tile's shordesc -->
     <whc:webhelp_tile_shortdesc/>
  </div>
</whc:webhelp_tile>
```

For information about customizing the tiles, see How to Configure the Tiles on the WebHelp Responsive Main Page on page 1091.

Main Page Table of Contents (`webhelp_main_page_toc`)

This component generates a simplified Table of Contents. It is simplified because it contains only two levels from the documentation hierarchy. To generate this component, the `webhelp_main_page_toc` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_main_page_toc
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_main_page_toc`.

Index Terms Link (`webhelp_indexterms_link`)

This component can be used to generate a link to the index terms page (`indexterms.html`). If the published documentation does not contains any index terms, then the link will not be generated. To generate this component, the `webhelp_indexterms_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_indexterms_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_indexterms_link`. This element will contain a link to the `indexterms.html` page.

Link to Skins Resources (`webhelp_skin_resources`)

This component can be used to add a link to resources for the current WebHelp skin (such as the CSS file). To generate this component, the `webhelp_skin_resources` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_skin_resources/>
```

In the output, you will find a link to the skin resources.

Topic Page

The *Topic Page* is the page generated for each DITA topic in the WebHelp Responsive output. The name of the HTML file that defines this page is `wt_topic.html` and it is located in the following directory: *`[WebHelp_OUTPUT_DIR]`*`/oxygen-webhelp/page-templates`.

The HTML pages produced for each topic consist of the topic content along with various other additional components, such as a title, menu, navigation breadcrumb, print icon, or side table of contents.

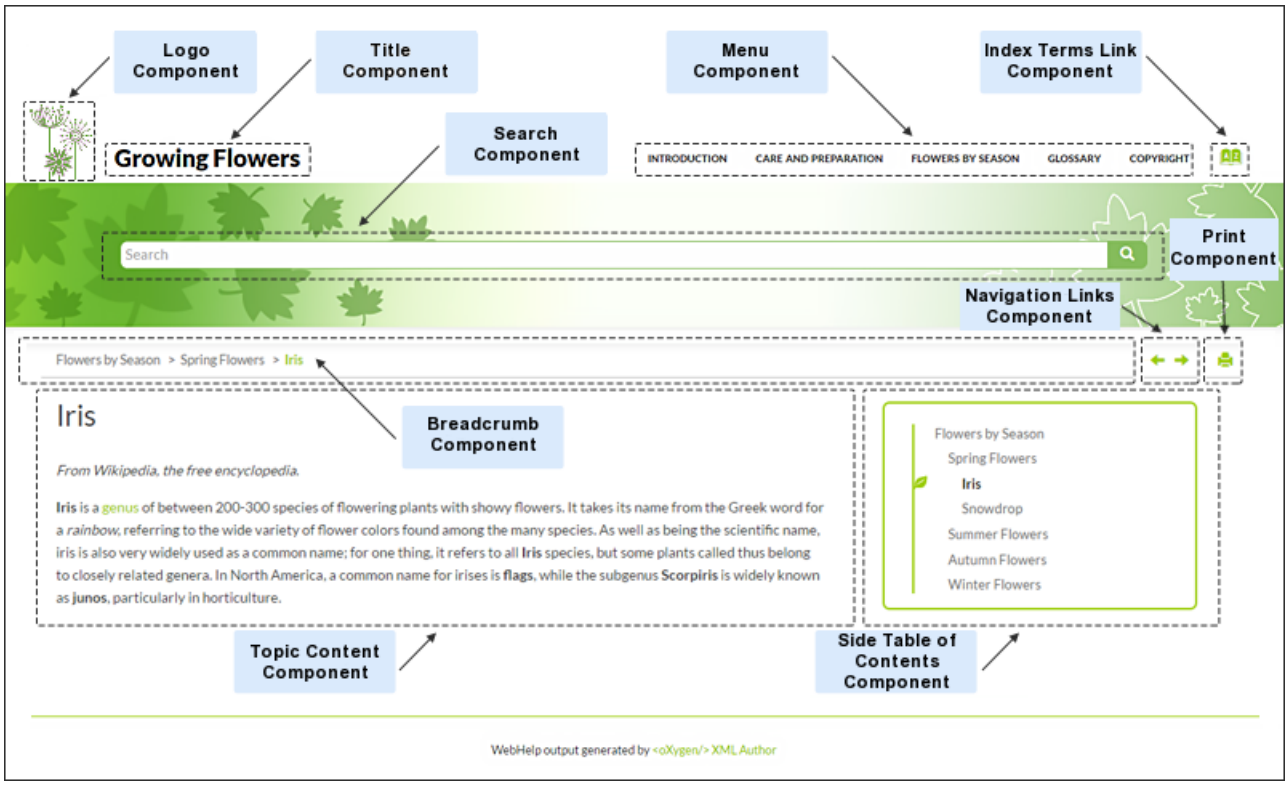


Figure 576: Examples of Topic Page Components

The following components can be referenced in the *Topic Page* (`wt_topic.html`) file:

Publication Title (`webhelp_publication_title`)

This component generates the publication title in the output. To generate this component, the `webhelp_publication_title` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_publication_title
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_publication_title`.

Publication Logo (`webhelp_logo`)

This component generates a logo image in the output. To generate this component, the `webhelp_logo` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_logo
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In addition, you must also specify the path of the logo image in the `webhelp.logo.image` transformation parameter (in the **Parameters** tab in the transformation scenario). You can set the `webhelp.logo.image.target.url` parameter to generate a link to a URL when you click the logo image.

In the output, you will find an element with the class: `wh_logo`.

Search Input (`webhelp_search_input`)

This component is used to generate the input widget associated with search function in the output. To generate this component, the `webhelp_search_input` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_search_input
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_search_input`.

Topic Breadcrumb (`webhelp_breadcrumb`)

This component generates a breadcrumb that displays the path of the current topic. To generate this component, the `webhelp_breadcrumb` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_breadcrumb
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_breadcrumb`. This element will contain a list with items that correspond to the topics in the path. The first item in the list has a link to the main page with the `home` class. The last item in the list corresponds to the current topic and has the `active` class set.

Navigation Links (`webhelp_navigation_links`)

This component generates navigation links to the next and previous topics. To generate this component, the `webhelp_navigation_links` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_navigation_links
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_navigation_links`. This element will contain the links to the next and previous topics.

Print Link (`webhelp_print_link`)

This component is used to generate a print icon that opens the print dialog box for your particular browser. To generate this component, the `webhelp_print_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_print_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_print_link`.

Topic Content (`webhelp_topic_content`)

This component generates the content of a topic and it represent the content of the HTML files as they are produced by the DITA-OT processor. To generate this component, the `webhelp_topic_content` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topic_content
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topic_content`.

Publication TOC (`webhelp_publication_toc`)

This component generates a mini table of contents for the current topic (on the left side). It will contain links to the children of current topic, its siblings, and all of its ancestors. To generate this component, the `webhelp_publication_toc` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_publication_toc
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_publication_toc`. This element will contain links to the topics that are close to the current topic.

Topic TOC (`webhelp_topic_toc`)

This component generates a topic table of contents for the current topic (on the right side). This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted. To generate this component, the `webhelp_topic_toc` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topic_toc
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topic_toc`. This element will contain links to the topics that are close to the current topic.

Expand/Collapse Sections (`webhelp_expand_collapse_sections`)

This component is used to generate an icon that expands or collapses sections listed in the side table of contents within a topic. To generate this component, the `webhelp_expand_collapse_sections` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_expand_collapse_sections
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `webhelp_expand_collapse_sections`.

Topic Feedback (`webhelp_feedback`)

This component generates a placeholder for where the comments section will be presented. To generate this component, the `webhelp_feedback` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_feedback
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

Main Page Menu (`webhelp_topics_menu`)

This component generates a menu with all the documentation topics. To generate this component, the `webhelp_topics_menu` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topics_menu
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topics_menu`.

You can control the maximum level of topics that will be included in the menu using the `webhelp.top.menu.depth` transformation parameter (in the **Parameters** tab of the transformation scenario).

For information about customizing the menu, see How to Customize the Menu on page 1089.

Index Terms Link (`webhelp_indexterms_link`)

This component can be used to generate a link to the index terms page (`indexterms.html`). If the published documentation does not contains any index terms, then the link will not be generated. To generate this component, the `webhelp_indexterms_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_indexterms_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_indexterms_link`. This element will contain a link to the `indexterms.html` page.

Child Links (`webhelp_child_links`)

For all topics with subtopics (child topics), this component generates a list of links to each child topic. To generate this component, the `webhelp_child_links` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_child_links
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

Related Links (`webhelp_related_links`)

For all topics that contain related links, this component generates a list of related links that will appear in the output. To generate this component, the `webhelp_related_links` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_related_links
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

Link to Skins Resources (`webhelp_skin_resources`)

This component can be used to add a link to resources for the current WebHelp skin (such as the CSS file). To generate this component, the `webhelp_skin_resources` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_skin_resources/>
```

In the output, you will find a link to the skin resources.

Search Results Page

The *Search Results Page* is the page generated that present search results in the WebHelp Responsive output. The name of the HTML file that defines this page is `wt_search.html` and it is located in the following directory: *`[WebHelp_OUTPUT_DIR]`*`/oxygen-webhelp/page-templates`.

The HTML page that is produced consists of a search results component along with various other additional components, such as a title, menu, or index link.

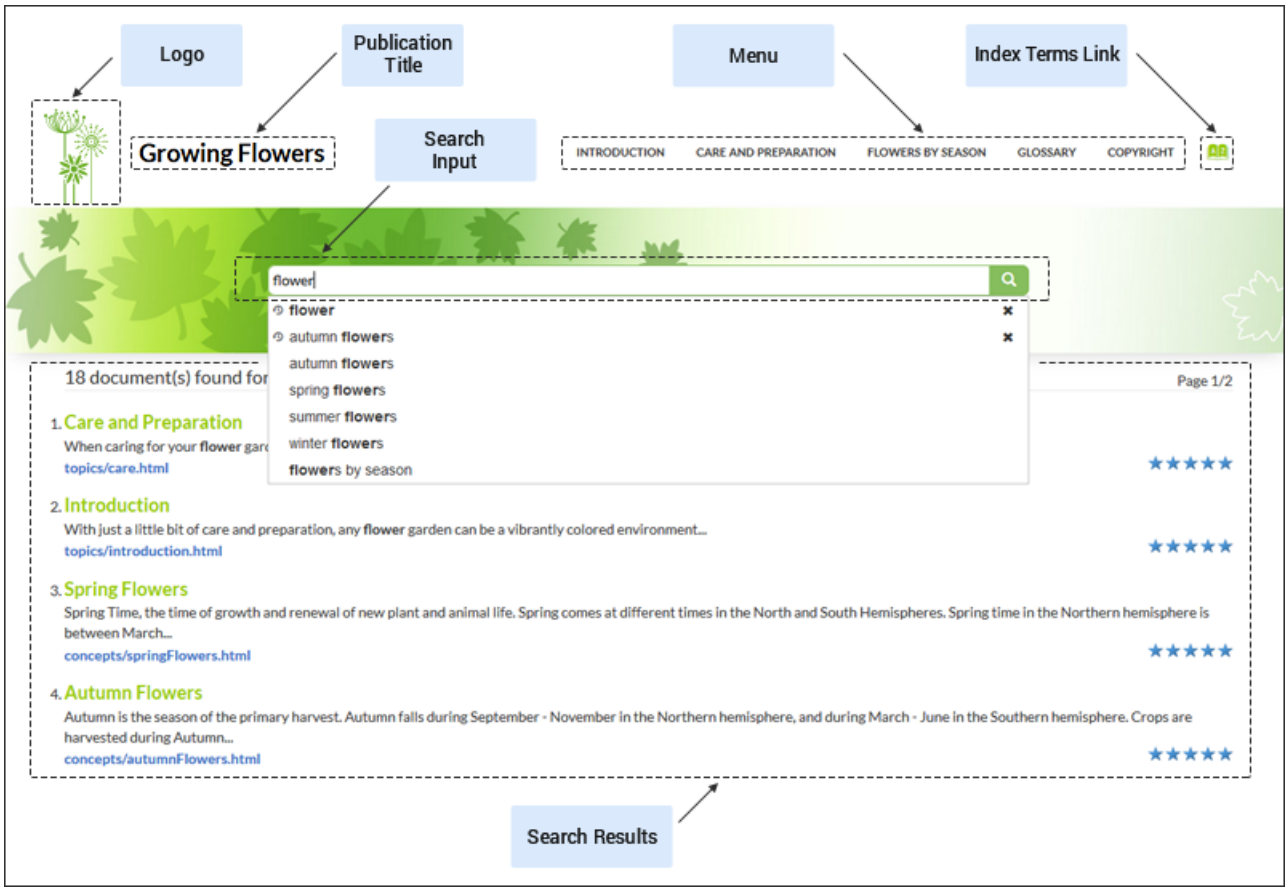


Figure 577: Examples of Search Results Page Components

The following components can be referenced in the *Search Results Page* (`wt_search.html`) file:

Publication Title (`webhelp_publication_title`)

This component generates the publication title in the output. To generate this component, the `webhelp_publication_title` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_publication_title
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_publication_title`.

Publication Logo (`webhelp_logo`)

This component generates a logo image in the output. To generate this component, the `webhelp_logo` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_logo
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In addition, you must also specify the path of the logo image in the `webhelp.logo.image` transformation parameter (in the **Parameters** tab in the transformation scenario). You can set the `webhelp.logo.image.target.url` parameter to generate a link to a URL when you click the logo image.

In the output, you will find an element with the class: `wh_logo`.

Search Input (`webhelp_search_input`)

This component is used to generate the input widget associated with search function in the output. To generate this component, the `webhelp_search_input` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_search_input
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_search_input`.

Search Results (`webhelp_search_results`)

This component is used to generate a placeholder to signal where the search results will be presented in the output. To generate this component, the `webhelp_search_results` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_search_results
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_search_results`.

Print Link (`webhelp_print_link`)

This component is used to generate a print icon that opens the print dialog box for your particular browser. To generate this component, the `webhelp_print_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_print_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_print_link`.

Main Page Menu (`webhelp_topics_menu`)

This component generates a menu with all the documentation topics. To generate this component, the `webhelp_topics_menu` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topics_menu
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topics_menu`.

You can control the maximum level of topics that will be included in the menu using the `webhelp.top.menu.depth` transformation parameter (in the **Parameters** tab of the transformation scenario).

For information about customizing the menu, see How to Customize the Menu on page 1089.

Index Terms Link (`webhelp_indexterms_link`)

This component can be used to generate a link to the index terms page (`indexterms.html`). If the published documentation does not contains any index terms, then the link will not be generated. To generate this component, the `webhelp_indexterms_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_indexterms_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_indexterms_link`. This element will contain a link to the `indexterms.html` page.

Link to Skins Resources (`webhelp_skin_resources`)

This component can be used to add a link to resources for the current WebHelp skin (such as the CSS file). To generate this component, the `webhelp_skin_resources` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_skin_resources/>
```

In the output, you will find a link to the skin resources.

Index Terms Page

The *Index Terms Page* is the page generated that presents index terms in the WebHelp Responsive output. The name of the HTML file that defines this page is `wt_terms.html` and it is located in the following directory: *`[WebHelp_OUTPUT_DIR]`*`/oxygen-webhelp/page-templates`.

The HTML page that is produced consists of an index terms section along with various other additional components, such as a title, menu, or search field.

An alphabet that contains the first letter of the documentation index terms is generated at the top of the index page. Each letter represents a link to a specific indices section.

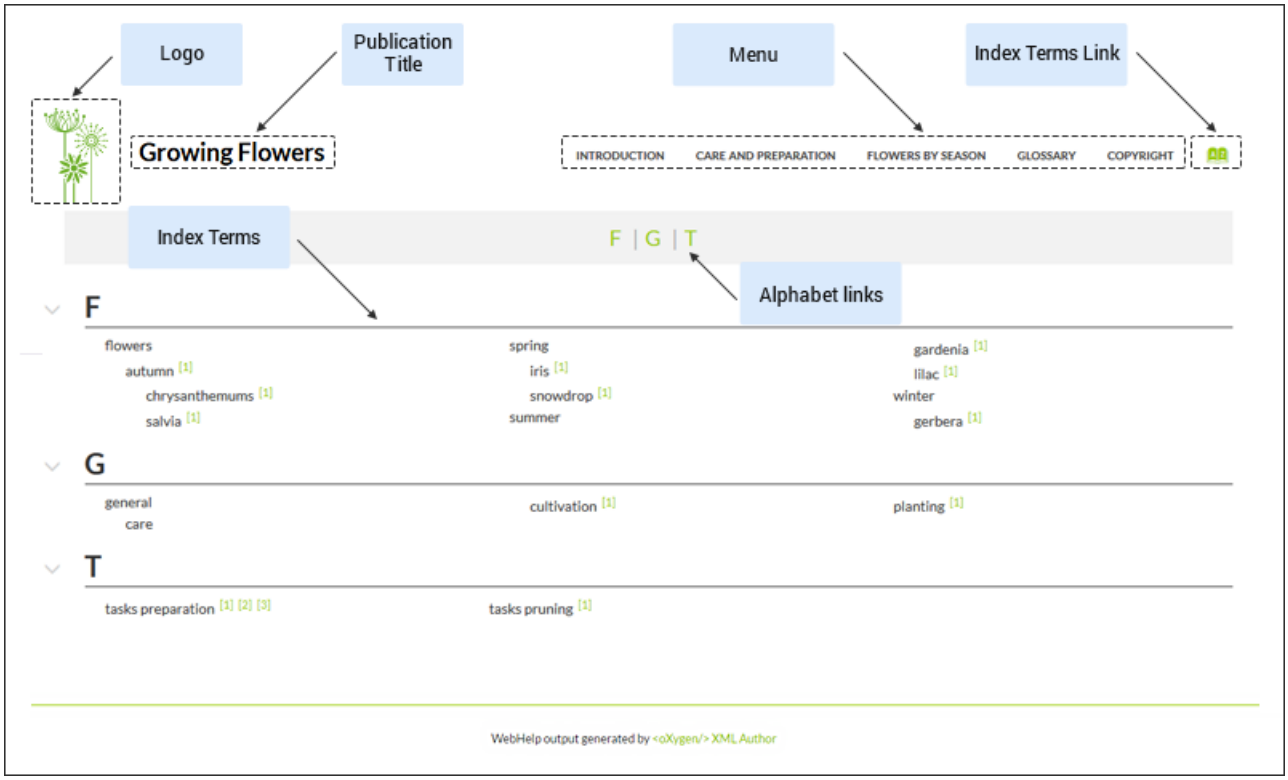


Figure 578: Examples of Index Terms Page Components

The following components can be referenced in the *Index Terms Page* (`wt_terms.html`) file:

Publication Title (`webhelp_publication_title`)

This component generates the publication title in the output. To generate this component, the `webhelp_publication_title` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_publication_title
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_publication_title`.

Publication Logo (`webhelp_logo`)

This component generates a logo image in the output. To generate this component, the `webhelp_logo` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_logo
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In addition, you must also specify the path of the logo image in the `webhelp.logo.image` transformation parameter (in the **Parameters** tab in the transformation scenario). You can set the `webhelp.logo.image.target.url` parameter to generate a link to a URL when you click the logo image.

In the output, you will find an element with the class: `wh_logo`.

Search Input (`webhelp_search_input`)

This component is used to generate the input widget associated with search function in the output. To generate this component, the `webhelp_search_input` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_search_input
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_search_input`.

Print Link (`webhelp_print_link`)

This component is used to generate a print icon that opens the print dialog box for your particular browser. To generate this component, the `webhelp_print_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_print_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_print_link`.

Main Page Menu (`webhelp_topics_menu`)

This component generates a menu with all the documentation topics. To generate this component, the `webhelp_topics_menu` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_topics_menu
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_topics_menu`.

You can control the maximum level of topics that will be included in the menu using the `webhelp.top.menu.depth` transformation parameter (in the **Parameters** tab of the transformation scenario).

For information about customizing the menu, see How to Customize the Menu on page 1089.

Index Terms Link (`webhelp_indexterms_link`)

This component can be used to generate a link to the index terms page (`indexterms.html`). If the published documentation does not contains any index terms, then the link will not be generated. To generate this component, the `webhelp_indexterms_link` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_indexterms_link
     xmlns:whc="http://www.oxygenxml.com/webhelp/components"/>
```

In the output, you will find an element with the class: `wh_indexterms_link`. This element will contain a link to the `indexterms.html` page.

Link to Skins Resources (`webhelp_skin_resources`)

This component can be used to add a link to resources for the current WebHelp skin (such as the CSS file). To generate this component, the `webhelp_skin_resources` element must be specified in the HTML file as in the following example:

```
<whc:webhelp_skin_resources/>
```

In the output, you will find a link to the skin resources.

HTML Fragment Extension Points

The HTML pages contain component placeholders that can be used to insert custom HTML fragments.

You can specify one or more HTML fragment extension points in the descriptor file using the following structure:

```
<publishing-template>
    ...
    <webhelp>
      ...
      <html-fragments>
        <fragment
          file="html-fragments/webhelp.fragment.welcome"
          placeholder="webhelp.fragment.welcome"/>
        <fragment
          file="html-fragments/webhelp.fragment.footer.html"
          placeholder="webhelp.fragment.footer"/>
      </html-fragments>
```

Some of these placeholders are left empty in the default output configurations, but you can use them to insert custom content.

Each placeholder has an associated parameter in the transformation. These predefined empty placeholder parameters are illustrated and described below.

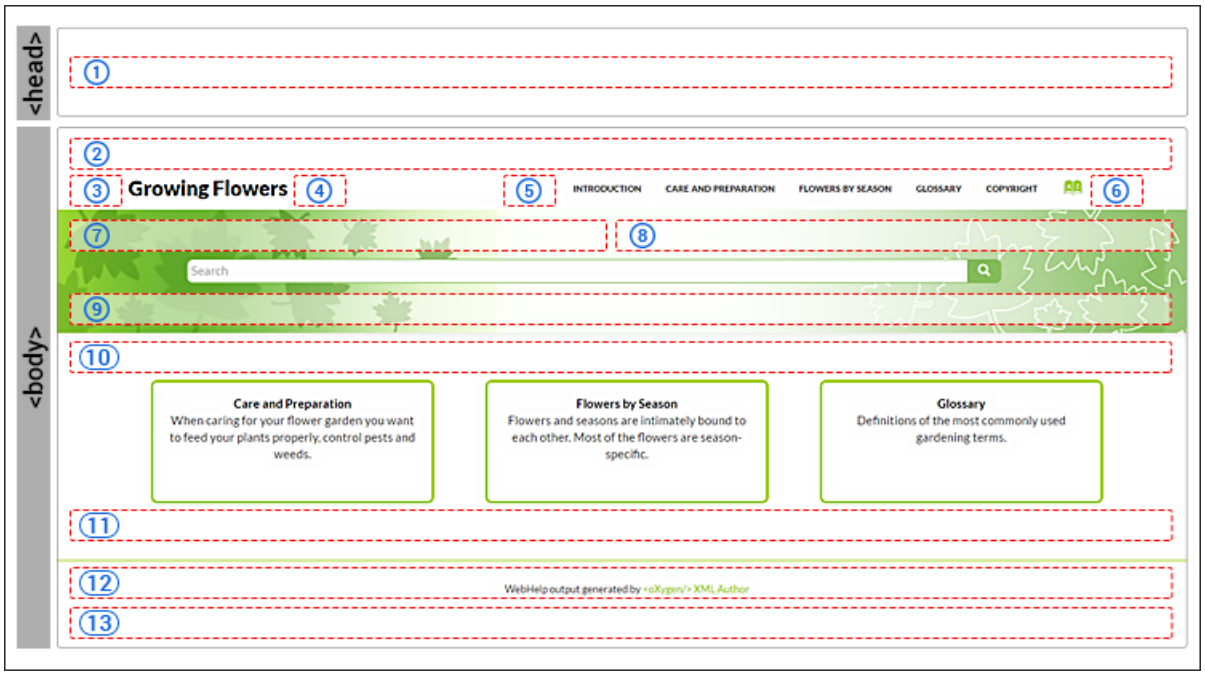


Figure 579: Predefined Placeholders Diagram

Each of these parameters can hold either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment:

1- webhelp.fragment.head

In the generated output it inserts a given XHTML fragment in the <head> element. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

2- webhelp.fragment.before.body

In the generated output it displays a given XHTML fragment before the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

3- webhelp.fragment.before.logo_and_title

In the generated output it displays a given XHTML fragment before the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

4- webhelp.fragment.after.logo_and_title

In the generated output it displays a given XHTML fragment after the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

5- webhelp.fragment.before.top_menu

In the generated output it displays a given XHTML fragment before the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

6- webhelp.fragment.after.top_menu

In the generated output it displays a given XHTML fragment after the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

7- webhelp.fragment.before.main.page.search

In the generated output it displays a given XHTML fragment before the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

8- webhelp.fragment.welcome

In the generated output it displays a given XHTML fragment as a welcome message (or title). The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

9- webhelp.fragment.after.main.page.search

In the generated output it displays a given XHTML fragment after the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

10- webhelp.fragment.before.toc_or_tiles

In the generated output it displays a given XHTML fragment before the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

11- webhelp.fragment.after.toc_or_tiles

In the generated output it displays a given XHTML fragment after the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

12- webhelp.fragment.footer

In the generated output it displays a given XHTML fragment as the page footer. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

13- webhelp.fragment.after.body

In the generated output it displays a given XHTML fragment after the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

Related Information:

How to Insert HTML Content in WebHelp Responsive Output on page 1087

XSLT Extension Points

The publishing template allows supports one or more XSLT extension points. They are helpful when you want to change the structure of the HTML pages that are primarily generated from XSLT processing. They can be specified in the descriptor file using the following structure:

```
<publishing-template>
    ...
    <webhelp>
        ...
        <xslt>
            <extension
              id="com.oxygenxml.webhelp.xsl.dita2webhelp"
              file="xsl/customDita2webhelp.xsl"/>
            <extension
              id="com.oxygenxml.webhelp.xsl.createMainPage"
              file="xsl/customMainPage.xsl"/>
        </xslt>
```

For more information, and a full list of the available extension points, see: XSLT-Import and XSLT-Parameter Extension Points.

Note: You can read the value of a WebHelp transformation parameter from your XSLT extension stylesheets by using the `getParameter(param.name)` function from the `http://www.oxygenxml.com/functions` namespace.

Transformation Parameters

You can also set one or more WebHelp transformation parameters in the descriptor file.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <parameters>
        <parameter
          name="webhelp.show.main.page.toc"
          value="yes"/>
        <parameter
          name="webhelp.top.menu.depth"
          value="3"/>
        <parameter
          name="webhelp.fragment.welcome"
          value="html-fragment/webhelp.fragment.welcome.html"
          type="filePath"/>
      </parameters>
    </webhelp>
```

The following information can be specified in the `parameter` element:

Parameter name

The name of the parameter. It may be one of the WebHelp Responsive transformation parameters or a DITA-OT HTML-based output parameter.

Note: It is not recommended to specify an input/output parameter in the descriptor file (such as the input Map, DITAVAL file, or temporary directory).

Parameter Value

The value of the parameter. It should be a relative path to the template root folder for file paths parameters.

Parameter Type

The type of the parameter: `string` or `filepath`. The `string` value is default.

After creating a publishing template and adding it to the templates gallery, when you select the template in the transformation scenario dialog box, the **Parameters** tab will automatically be updated to include the parameters defined in the descriptor file. These parameters are displayed in italics.

Generating WebHelp Responsive Output

The publishing process can be initiated from a transformation scenario within **Oxygen XML Editor/Author**, from a command line outside **Oxygen XML Editor/Author**, or from an integration server.

Running from Oxygen XML Editor/Author

To publish to the WebHelp Responsive output from a transformation scenario inside **Oxygen XML Editor/Author**, use one of the following procedures, depending on whether or not you want a feedback section in your output.

WebHelp Responsive Output

To publish a *DITA map* as **WebHelp Responsive** output, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - **Templates Tab** - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - **Parameters Tab** - This tab includes numerous transformation parameters that can be set to customize your WebHelp system output.
   - **Filters Tab** - This tab allows you to filter certain content elements from the generated output.
   - **Advanced Tab** - This tab allows you to specify some advanced options for the transformation scenario.
   - **Output Tab** - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to process the transformation.

   When the **DITA Map WebHelp Responsive** transformation is complete, the output is automatically opened in your default browser.

WebHelp Responsive with Feedback Output

To publish a *DITA map* as a **WebHelp Responsive with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

- **Templates Tab** - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
- **Parameters Tab** - This tab includes numerous transformation parameters that can be set to customize your WebHelp system output.
- **Filters Tab** - This tab allows you to filter certain content elements from the generated output.
- **Advanced Tab** - This tab allows you to specify some advanced options for the transformation scenario.
- **Output Tab** - This tab allows you to configure options that are related to the location where the output is generated.

4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Responsive with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

Running from Command Line

To publish to the WebHelp Responsive output from a command line outside of **Oxygen XML Editor/Author**, you can use the `dita` startup script that comes bundled with *DITA-OT* distribution.

`dita` Command Format

DITA-OT `dita` command has the following format:

```
DITA-OT-DIR/bin/dita --format=webhelp-responsive --input=input-file options
```

where the arguments are as follows:

`dita`

Windows - The `dita.bat` script located in: DITA-OT-DIR on page 1622\bin\.

Linux/Mac OS X - The `dita` script file located in: DITA-OT-DIR on page 1622/bin/.

`--format=webhelp-responsive`

Specifies the output format (transformation type) for WebHelp Responsive transformation.

`--input=input-file`

The `input-file` represents the path to the DITA map that you want to process.

`options`

`options` include the following optional build parameters:

`--output=dir`

`-o dir`

Specifies the path of the output directory; the path can be absolute or relative to the current directory. By default, the output is written to the `out` subdirectory of the current directory.

`--filter=file`

Specifies filter file(s) used to include, exclude, or flag content.

Relative paths are resolved against the current directory and internally converted to absolute paths.

`--temp=dir`

`-t dir`

Specifies the location of the temporary directory.

`--verbose`

`-v`

Verbose logging.

--debug

-d

Debug logging.

--logfile=file

-l file

Write logging messages to a file.

--parameter=value

-Dparameter=value

Specify a value for a DITA-OT or Ant build parameter.

--propertyfile=file

Use build parameters defined in the referenced `.properties` file.

Build parameters specified on the command line override those set in the `.properties` file.

WebHelp and DITA-OT parameters

In addition to the transformation parameters that are specific to WebHelp Responsive, you can use to the common DITA-OT transformation parameters and the HTML-based Output Parameters.

Command Line Example

- Windows:

```
dita.bat
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.logo.image=C:\images\myLogo.jpg
```

- Linux/Mac OS X:

```
dita
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.logo.image=C:\images\myLogo.jpg
```

Related Information:

DITA-OT Documentation: Building Output Using the dita Command

DITA-OT Documentation: Publishing DITA Content

DITA-OT Documentation: HTML-based output parameters

WebHelp Responsive Output Parameters on page 1078

Running from an Integration Server

Oxygen XML Editor plugin can be processed from an automatic publishing system, such as *Jenkins* or *Travis*.

Automating DITA to WebHelp Output with Jenkins

To integrate WebHelp output with the Jenkins continuous integration tool, follow these steps:

1. Create a Maven project to incorporate the DITA-OT that already integrates Oxygen XML Editor plugin.
2. Go to the root of your Maven project and edit the `pom.xml` file to include the following fragment:

```
<properties>
  <oxygen-webhelp>${basedir}/tools/DITA-OT2.5.2/
       plugins/com.oxygenxml.webhelp.responsive</oxygen-webhelp>
</properties>

<plugin>
  <artifactId>exec-maven-plugin</artifactId>
  <groupId>org.codehaus.mojo</groupId>
  <executions>
    <execution><!-- Run our version calculation script -->
      <id>Version Calculation</id>
      <phase>generate-sources</phase>
      <goals>
        <goal>exec</goal>
```

```
      </goals>
      <configuration>
        <executable>${oxygen-webhelp}/ditaWebhelp.bat</executable>
      </configuration>
    </execution>
  </executions>
</plugin>
```

Note: In the fragment above it is assumed that you are using DITA-OT version 2.5.4. If you are using another version, please adjust the path accordingly.

3. Go to the Jenkins top page and create a new Jenkins job. Configure this job to suit your particular requirements, such as the build frequency and location of the Maven project.

Automating DITA to WebHelp Output with Travis CI

This topic assumes you have a DITA project hosted on a GitHub public or private repository.

The goal of this tutorial is to help you setup a Travis continuous integration job that automatically publishes your DITA project to GitHub pages after every commit. The published website will contain a feedback link on each page that would allow a contributor to easily suggest changes to the documentation by creating a pull request on GitHub with just a few clicks.

Enable the Travis CI Build

1. Sign in to Travis CI with your GitHub account, accepting the GitHub access permissions confirmation.
2. Once you are signed in, and you have synchronized your GitHub repositories, go to your profile page and enable Travis CI for the repository you want to build.

Configure the Travis CI Build in your GitHub Project

1. Checkout your GitHub project locally.
2. Copy the `.travis` folder from here to the root directory of your project.
3. In the root of your GitHub project, add a file called `.travis.yml` with the following content:

```
language: dita
install:
  - echo "Installed"
script:
  - sh .travis/publish.sh
after_success:
  - sh .travis/deploy.sh
env:
  global:
    - DITAMAP=/path/to/your/ditamap/file
    - DITAVAL=/path/to/your/ditaval/file
    - ANT_OPTS=-Xmx1024M
```

Note: Replace `/path/to/your/ditamap/file` and `/path/to/your/ditaval/file` with the appropriate paths to your *DITA map* and `ditaval` files.

4. Create a GitHub personal access token by following this procedure.
5. Define an environment variable in the repository settings that has the name `GH_TOKEN` and the value equal with the GitHub personal access token created earlier.

Register Your License Key

1. Edit your `.gitignore` file (or create it if it does not already exist) and add the following line:

```
licenseKey.txt
```

2. Copy your WebHelp license to the root of your GitHub project in a file called `licenseKey.txt`.

Important: The `licenseKey.txt` file should not be committed to GitHub as it contains a license key that is issued only to you.

3. Encrypt the license key file and **add** it to the `.travis.yml` configuration file. This way only the Travis CI server will be able to decrypt it during the build process.

Commit to GitHub

1. Commit the following files and folders and push the commit to GitHub:

```
git add .gitignore licenseKey.txt.enc .travis.yml .travis/
git commit -m "Set up the Travis CI publishing system"
git push
```

2. Create a `gh-pages` branch in your GitHub project where the WebHelp output will be published. You can follow the procedure here.

WebHelp Responsive Transformation Parameters

In addition to the common DITA-OT transformation parameters and the HTML-based Output Parameters, there are numerous other supported parameters that are specific to the WebHelp Responsive output.

Publishing Template Parameters

`webhelp.publishing.template`

Specifies the path to the ZIP archive (or root folder) that contains your custom WebHelp Responsive template.

`webhelp.publishing.template.descriptor`

Specifies the name of the descriptor to be loaded from the WebHelp Responsive template package. If it is not specified, the first encountered descriptor will be automatically loaded.

Custom Resource Parameters

`webhelp.custom.resources`

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

`webhelp.favicon`

The file path that points to an image to be used as a *favicon* in the WebHelp output.

`webhelp.logo.image.target.url`

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

`webhelp.logo.image`

Specifies a path to an image displayed as a logo in the left side of the output header.

Feedback-Enabled Parameters

`webhelp.product.id` (available only for Feedback-enabled systems)

This parameter specifies a short name for the documentation target, or product (for example, `mobile-phone-user-guide`, `hvac-installation-guide`).

Note: You can deploy documentation for multiple products on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

`webhelp.product.version` (available only for Feedback-enabled systems)

Specifies the documentation version number (for example, 1.0, 2.5, etc.). New user comments are bound to this version.

Note: Multiple documentation versions can be deployed on the same server.

Restriction: The following characters are not allowed in the value of this parameter: `< > / \ ' ( ) { } = ; * % + &`.

HTML Fragment Extension Parameters

webhelp.fragment.after.body

In the generated output it displays a given XHTML fragment after the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.logo_and_title

In the generated output it displays a given XHTML fragment after the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.main.page.search

In the generated output it displays a given XHTML fragment after the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.toc_or_tiles

In the generated output it displays a given XHTML fragment after the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.top_menu

In the generated output it displays a given XHTML fragment after the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.body

In the generated output it displays a given XHTML fragment before the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.logo_and_title

In the generated output it displays a given XHTML fragment before the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.main.page.search

In the generated output it displays a given XHTML fragment before the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.toc_or_tiles

In the generated output it displays a given XHTML fragment before the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.top_menu

In the generated output it displays a given XHTML fragment before the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.footer

In the generated output it displays a given XHTML fragment as the page footer. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.head

In the generated output it inserts a given XHTML fragment in the `<head>` element. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.welcome

In the generated output it displays a given XHTML fragment as a welcome message (or title). The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

Output Component Parameters

webhelp.default.collection.type.sequence

Specifies if the **sequence** value will be used by default when the `collection-type` attribute is not specified. This option is helpful if you want to have *Next* and *Previous* navigational buttons generated for all HTML pages. Allowed values are **no** (default) and **yes**.

webhelp.merge.nested.topics.related.links

Specifies if the related links from nested topics will be merged with the links in the parent topic. Thus the links will be moved from the topic content to the related links component and all of the links from the same group (for example, *Related Tasks*, *Related References*, *Related Information*) are merged into a single group. The default value is yes.

webhelp.show.breadcrumb

Specifies if the breadcrumb component will be presented in the output. The default value is yes.

webhelp.show.changes.and.comments

When set to yes, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

webhelp.show.child.links

Specifies if child links will be generated in the output for all topics that have subtopics. The default value is no.

webhelp.show.indexterms.link

Specifies if an icon that links to the index will be presented in the output. The default value is yes.

webhelp.show.main.page.tiles

Specifies if the tiles component will be presented in the main page of the output. For a *tree* style layout, this parameter should be set to no.

webhelp.show.main.page.toc

Specifies if the table of contents will be presented in the main page of the output. The default value is yes.

webhelp.show.navigation.links

Specifies if navigation links will be presented in the output. The default value is yes.

webhelp.show.print.link

Specifies if a print link or icon will be presented within each topic in the output. The default value is yes.

webhelp.show.publication.toc

Specifies if a table of contents will be presented on the left side of each topic in the output. The default value is yes.

webhelp.show.topic.toc

Specifies if a topic table of contents will be presented on the right side of each topic in the output. This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted. The default value is yes.

webhelp.show.top.menu

Specifies if a menu will be presented at the topic of the main page in the output. The default value is yes.

webhelp.publication.toc.hide.chunked.topics

Specifies if the table of contents will contain links for *chunked* topics. The default value is yes.

webhelp.publication.toc.links

Specifies which links will be included in the table of contents. The possible values are:

- **chapter** (default) - The TOC will include links for the current topic, its children, its siblings, and its direct ancestor (including the direct ancestor's siblings), and the parent chapter.
- **topic** - The TOC will only include links for the current topic and its direct children.
- **all** - The TOC will include all links.

webhelp.publication.toc.tooltip.position

By default, if a topic contains a `shortdesc` element, its content is displayed in a tooltip when the user hovers over its link in the table of contents. This parameter controls whether or not this tooltip is displayed and its position relative to the link. The possible values are:

- **left** (default)
- **right**
- **top**
- **bottom**

- **hidden** - The tooltip will not be displayed.

webhelp.top.menu.depth

Specifies the maximum depth level of the topics that will be included in the top menu. The default value is 3. A value of `0` means that the menu has unlimited depth.

webhelp.topic.collapsible.elements.initial.state

Specifies the initial state of collapsible elements (tables with titles, nested topics with titles, sections with titles, index term groups). The possible values are `collapsed` or `expanded` (default value).

Search-Related Parameters

webhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

webhelp.enable.search.autocomplete

Specifies if the *Autocomplete* feature is enabled in the WebHelp search text field. The default value is `yes`.

webhelp.search.enable.pagination

Specifies whether or not search results will be displayed on multiple pages. Allowed values are `yes` or no.

webhelp.search.page.numberOfItems

Specifies the number of search results items displayed on each page. This parameter is only used when the **webhelp.search.enable.pagination** parameter is enabled.

webhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq` element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

webhelp.sitemap.priority

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

webhelp.google.search.results

A file path that specifies the location of a well-formed XHTML file containing the Google Custom Search Engine element `gcse:searchresults-only`. You can use all supported attributes for this element. It is recommend to set the `linkTarget` attribute to `frm` for frameless (*iframe*) version of WebHelp or to `contentWin` for the frameset version of WebHelp. The default value for this attribute is `_blank` and the search results will be loaded in a new window. If this parameter is not specified, the following code will be used `<gcse:searchresults-only linkTarget="frm"></gcse:searchresults-only>`

webhelp.google.search.script

A file path that specifies the location of a well-formed XHTML file containing the Custom Search Engine script from Google.

Note: The `fix.external.refs.com.oxygenxml` parameter is not supported when running the transformation from a command line. This parameter is normally used to specify whether or not the application tries to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references.

Related Information:

Generating WebHelp Responsive Output on page 1074

DITA-OT Parameter Reference

WebHelp Responsive XSLT-Import and XSLT-Parameter Extension Points

XSLT extension points can be used from either from an *Oxygen Publishing Template* or from a DITA-OT extension plug-in.

Extension Points from an Oxygen Publishing Template

The publishing template allows you to specify one or more XSLT extension points. These extension points will affect only the transformations that use the particular template.

For an example of how to use these extension in a publishing template, see: How to Use a XSLT Extension Point from a Publishing Template topic.

Example:

```
<publishing-template>
    ...
    <webhelp>
        ...
        <xslt>
            <extension
              id="com.oxygenxml.webhelp.xsl.createMainPage"
              file="xsl/customMainPage.xsl"/>
        </xslt>
```

Extension Points from a DITA-OT Extension Plug-in

The DITA-OT plug-in installer adds an XSLT import statement in the default WebHelp XSLT so that the XSLT stylesheet referenced by the extension point becomes part of the normal build. You can use these extension points to override XSLT processing steps.

Example:

```
<plugin id="com.oxygenxml.webhelp.responsive.extension">
  <feature extension="com.oxygenxml.webhelp.responsive.xsl.dita2webhelp"
           file="xsl/fixup.xsl"/>
</plugin>
```

XSLT-Import Extension Points

The following extension points are available:

com.oxygenxml.webhelp.xsl.dita2webhelp

Extension point to override the XSLT stylesheet (`dita2webhelp.xsl`) that produces an HTML file for each DITA topic. The location of this topic is *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.responsive\xsl\dita2webhelp\dita2webhelp.xsl`

com.oxygenxml.webhelp.xsl.createMainPage

Extension point to override the XSLT stylesheet (`createMainPage.xsl`) that produces the WebHelp Responsive main HTML page (`index.html`). The location of this file is *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.responsive\xsl\mainFiles\createMainPage.xsl`

com.oxygenxml.webhelp.xsl.createSearchPage

Extension point to override the XSLT stylesheet (`createSearchPage.xsl`) that produces the WebHelp Responsive search HTML page (`search.html`). The location of this file is *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.responsive\xsl\mainFiles\createSearchPage.xsl`

com.oxygenxml.webhelp.xsl.createIndexTermsPage

Extension point to override the XSLT stylesheet (`createIndextermsPage.xsl`) that produces the WebHelp Responsive index terms HTML page (`indexterms.html`). The location of this file is *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.responsive\xsl\mainFiles\createIndextermsPage.xsl`

com.oxygenxml.webhelp.xsl.createTocXML

Extension point to override the XSLT stylesheet (`tocDita.xsl`) that produces the `toc.xml` file. This file contains information extracted from the *DITA map* and it is mainly used to construct the WebHelp Table of Contents and navigational links. The path to this stylesheet is: *`DITA-OT-DIR`*`\plugins\com.oxygenxml.webhelp.responsive\xsl\toc\tocDita.xsl`.

XSLT-Parameter Extension Points

If your customization stylesheet declares one or more XSLT parameters and you want to control their values from the transformation scenario, you can use one of the following XSLT parameter extension points:

com.oxygenxml.webhelp.xsl.dita2webhelp.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.xsl.dita2webhelp** extension point.

com.oxygenxml.webhelp.xsl.createMainPage.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.xsl.createMainPage** extension point.

com.oxygenxml.webhelp.xsl.createSearchPage.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.xsl.createSearchPage** extension point.

com.oxygenxml.webhelp.xsl.createIndextermsPage.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.xsl.createIndexTermsPage** extension point.

com.oxygenxml.webhelp.xsl.createTocXML.param

Use this extension point to pass parameters to the stylesheet specified using the **com.oxygenxml.webhelp.xsl.createTocXML** extension point.

Related Information:

How to Override an XSLT-processing step on page 1108

[DITA-OT] XSLT-Import Extension Points

[DITA-OT] XSLT-Parameter Extension Points

Customizing the WebHelp Responsive Output

Oxygen XML Editor plugin provides support for customizing the **WebHelp Responsive** output to suit your specific needs. The **WebHelp Responsive** output is based upon the *Bootstrap* responsive front-end framework and is available for DITA document types. The **WebHelp Responsive with Feedback** variant allows your users to add comments to your output.

To change the overall appearance of your **WebHelp Responsive** output, you can use several different customization methods or a combination of methods. If you are familiar with CSS and coding, you can style your WebHelp output through your own custom stylesheets. You can also customize your output by modifying existing templates, create your own layout pages, or by configuring certain options and parameters in the transformation scenario.

This section includes topics that explain various ways to customize your WebHelp Responsive system output, such as how to configure the tiles on the main page, add logos in the title area, integrate with social media, localizing the interface, and much more.

Working with Publishing Templates

An *Oxygen Publishing Template* defines all aspects of the layout and styles of the **WebHelp Responsive** output. It is a self-contained customization package stored as a ZIP archive or folder that can easily be shared with others. It provides the primary method for customizing the output.

The recommended method for customizing the *WebHelp Responsive* output is to use a custom publishing template. This section contains a series of procedures about how to create, edit, publish, and share publishing templates.

Related Information:
Publishing Template Package Contents on page 1057

How to Create a Publishing Template

The easiest way to create a new *Oxygen Publishing Template* is to select an existing template in the transformation scenario dialog box and use the **Save template as** button to save that template into a new template package that can be used as a starting point.

To create a new *Oxygen Publishing Template*, follow these steps:

1. Open the **WebHelp Responsive** transformation scenario dialog box and select the publishing template you want to export and use as a starting point.
2. Optional: You can set one or more transformation parameters from the **Parameters** tab and the edited parameters will be exported along with the selected template. You will see which parameters will be exported in the dialog box that is displayed after the next step.
3. Click the **Save template as** button.
   This opens a template package configuration dialog box that contains some options and displays the parameters that will be exported to your template package.
4. Specify a name for the new template.
5. Optional: Specify a template description.
6. Optional: Select the **Include HTML Page Layout Files** option if you want to copy the default *HTML Page Layout Files* in your template package. They are helpful if you want to change the structure of the generated HTML pages.
7. In the **Save as** field, specify the name and path of the ZIP file where the template will be saved.

A new ZIP archive will be created on disk in the specified location with the specified name.

How to Edit a Publishing Template

To edit an existing *Oxygen Publishing Template* package, follow these steps:

1. Unzip the ZIP archive associated with the *Oxygen Publishing Template* in a separate folder.
2. Link the folder associated with the template in the **Navigator** view.
3. Using the **Navigator** view, you can modify the resources (CSS, JS, fonts) within the *Oxygen Publishing Template* folder to fit your needs.
4. Open the publishing template descriptor file (`.opt` extension) in the editor and modify to suit your needs.
5. Optional: Once you finish your customization, you can archive the folder as a ZIP file.

How to Add a Publishing Template to the Publishing Templates Gallery

To add the publishing template to your templates gallery, follow these steps:

1. Open the transformation scenario dialog box.
2. In the **Templates** tab, click the **Configure Publishing Templates Gallery** link to.
   This will open the **DITA/Publishing** preferences page.
3. Click the **Add** button and specify the location of your template directory.
   Your template directory is now added to the **Additional Publishing Templates Galleries** list.
4. Click **OK** to return to the transformation scenario dialog box.
   All the templates contained in your template directory will be displayed in the preview pane along with all the built-in templates.

How to Use a Publishing Template from Command Line

Before you run the transformation, you need to know if the publishing template has a single or multiple template descriptor files. If you don't know, open the ZIP archive or folder and check for files with the `.opt` extension.

Publishing Template with a Single Descriptor

A template with a single descriptor is used for a single customization.

To run from a command line, you need to use the webhelp.publishing.template parameter. This parameter specifies the path to the ZIP archive (or root folder) that contains your custom WebHelp Responsive template.

Command line example:

- **Windows**:

```
dita.bat
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.publishing.template=custom-template
```

- **Linux/Mac OS X**:

```
dita
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.publishing.template=custom-template
```

Using a Publishing Template with Multiple Descriptors

A template with multiple descriptors contains multiple customizations.

Because the publishing template is self-contained, it is used to reuse resources that are common to multiple publications.

To run from a command line, you need to use the webhelp.publishing.template and webhelp.publishing.template.descriptor parameters.

The webhelp.publishing.template parameter specifies the path to the ZIP archive (or root folder) while the webhelp.publishing.template.descriptor parameter specifies the name of the descriptor you want to use.

Command line example:

- **Windows**:

```
dita.bat
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.publishing.template=custom-template
   -Dwebhelp.publishing.template.descriptor=flowers.opt
```

- **Linux/Mac OS X**:

```
dita
   --format=webhelp-responsive
   --input=c:\mySample.ditamap
   --output=c:\output
   -Dwebhelp.publishing.template=custom-template
   -Dwebhelp.publishing.template.descriptor=flowers.opt
```

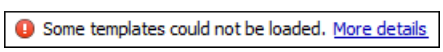
How to Share a Publishing Template

To share a publishing template with others, following these steps:

1. Copy your template in a new folder.
2. Go to **Options** > **Preferences** > **DITA** > **Publishing** and add that new folder to the list.
3. Switch the option as the bottom of that preferences page to **Project Options**.
4. Share your project file (`.xpr`).

Troubleshooting: Errors Encountered when Loading Templates

When the **Templates** tab of a **WebHelp Responsive** transformation scenario dialog box is opened, all templates (built-in and custom) are loaded and validated. Specifically, certain elements in the template descriptor file are checked for validity. If errors are encountered that prevents the template from loading, the following message will be displayed toward the bottom of the dialog box:



If you click the **More details** link, a window will open with more information about the encountered error. For example, it might offer a hint for which element is missing from the expected descriptor file structure.

Also, if a template could be loaded, but certain elements could not be found in the descriptor file, a warning icon (⚠) will be displayed on the template's image (in the **Templates** tab of the transformation dialog box). For example, this happens if a valid preview-image element cannot be found.

Changing the Layout and Styles

This section contains topics that explain how to customize the output using CSS, inserting HTML fragments, changing the layout of the main page, and more.

How to Customize the Output Using a CSS

The most common way to customize WebHelp Responsive output is to use custom CSS styling. This method can be used to make small, simple styling changes or more advanced, precise changes. To implement the styling in your WebHelp output, you simply need to create the custom CSS file and reference it in your transformation scenario (using a *Oxygen Publising Templater* or a transformation parameter). This custom file will be the final CSS to be applied so its content will override the styles in the other pre-existing CSS files.

Using CSS Inspector to Identify Content for Custom CSS File

You can use your browser's CSS inspector to identify the pertinent code in the current CSS files and you can even make changes directly in the CSS inspector to test the results so that you know exactly what content to use in your custom CSS file.

In most popular browsers (such as Chrome, Firefox, and Edge), you can access the CSS inspector by using **F12** or by selecting **Inspect Element** (or simply **Inspect**) from the contextual menu.

Tip: When using Safari on Mac OS X, you must first enable the Develop menu by going to the Advanced settings and selecting **Show Develop menu in menu bar**. Then you can select **Show Web Inspector** from the Develop menu or click **Command + Option + I**.

Create the Custom CSS

As a practical example, the following procedure would change the background color of the footer bar in the WebHelp output:

1. Use the browser's CSS inspector to identify the current CSS code that styles the footer bar. In this particular case, the pertinent code that would be identified is:

```
.wh_footer {
  font-size: 15px;
  line-height: 1.7em;
  background-color: #000;
}
```

2. If you want to test the color you want to apply as the background of this particular element, use the browser's CSS inspector to change the value of the `background-color` attribute. After you find a suitable color, copy that new code.
3. Create a custom CSS file and paste or enter the copied code. For example:

```
.wh_footer {
  background-color: #255890;
}
```

4. Save the custom CSS file at a location of your convenience.
5. Reference the CSS file in a *WebHelp Responsive* transformation using an *Oxygen Publishing Template* or the `args.css` parameter.

Referencing the CSS Using a Publishing Template

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Using the **Navigator** view, copy your custom CSS in a folder inside the publishing template root folder (for example, in the `custom_footer_template/resources` folder).
3. Open the template descriptor file associated with your publishing template and add your custom CSS in the *resources* section.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <resources>
            ...
```

```
            <css file="resources/MyCustom.css"/>
```

4. Open the *DITA Map WebHelp Responsive* transformation scenario.
5. Click the **Choose Custom Publishing Template** link and select your template.
6. Click **OK** to save the changes to the transformation scenario.
7. Run the transformation scenario.

Result: Your custom CSS will be applied as a final layer on top of any existing CSS rules and the output will reflect the changes you made.

Referencing the CSS Using the *args.css* Parameter

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and open the **Parameters** tab.
2. Set the `args.css` parameter to the path of your custom CSS file.
3. Set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

Result: Your custom CSS will be applied as a final layer on top of any existing CSS rules and the output will reflect the changes you made.

How to Insert HTML Content in WebHelp Responsive Output

You can add custom HTML content in the WebHelp Responsive output by inserting it in a well-formed XML file that will be referenced in the transformation (either from a *Oxygen Publishing Template* or using one of the HTML fragment parameters). This content may include references to additional JavaScript, CSS, and other types of resources, or such resources can be inserted inline within the HTML content that is inserted in the XML file.

The XML File

There are several things to consider in regards to this XML file:

- **Well-Formedness** - If the file is not a *Well-formed XML* document (or fragments are not well-formed), the transformation will fail.

  A common use case is if you want to include several `script` or `link` elements. In this case, the XML fragment has multiple root elements and to make it well-formed, you can wrap it in an `html` element. This element tag will be filtered out and only its children will be copied to the output documents. Similarly, you can wrap your content in `head`, `body`, `html/head`, or `html/body` elements.
- **Referencing Resources in the XML File** - You can include references to local resources (such as JavaScript or CSS files) by using the predefined `${oxygen-webhelp-output-dir}` macro to specify their paths relative to the output directory:

  ```
  <html>
    <script type="text/javascript" src="${oxygen-webhelp-output-dir}/js/test.js"/>
    <link rel="stylesheet" type="text/css"
          href="${oxygen-webhelp-output-dir}/css/test.css" />
  </html>
  ```

  If you want that the path of your resource to be relative to the templates directory, you can use the `${oxygen-webhelp-template-dir}` macro.

  To copy the referenced resources to the output directory, follow the procedure in: How to Copy Additional Resources to Output Directory on page 1093.
- **Inline JavaScript or CSS Content** - If you want to include inline JavaScript or CSS content in the XML file, it is important to place this content inside an XML comment, as in the following examples:

  JavaScript:

  ```
  <script type="text/javascript">
    <!--
      /* Include JavaScript code here. */

      function myFunction() {
        return true;
      }
    -->
  ```

```
</script>
```

CSS:

```
<style>
  <!--
    /* Include CSS style rules here. */

    *{
      color:red
    }
  -->
</style>
```

Referencing the HTML fragment using a Publishing Template

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Insert the HTML content in a well-formed XML file (for example, `custom-html.html`).
3. Using the **Navigator** view, copy your custom HTML fragment in a folder inside publishing the template root folder (for example, in the `custom_footer_template/html-fragments` folder).
4. Open the template descriptor file associated with your publishing template and add a reference to the custom HTML fragment in the *html-fragments* section.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <html-fragments>
        <fragment
          file="html-fragments/custom-html.html"
          placeholder="webhelp.fragment.head"/>
```

Note: If you want to insert the content in another location within the output document, you can reference the XML file from any other HTML Fragment extension points.

5. Open the *DITA Map WebHelp Responsive* transformation scenario.
6. Click the **Choose Custom Publishing Template** link and select your template.
7. Click **OK** to save the changes to the transformation scenario.
8. Run the transformation scenario.

Results: Your additional content will be included at the end of the `head` element of your output document.

Referencing the HTML Fragment using a Transformation Parameter

1. Insert the HTML content in a well-formed XML file.
2. Edit the *DITA Map WebHelp Responsive* transformation scenario and open the **Parameters** tab.
3. Edit the value of the `webhelp.fragment.head` parameter and set it to the absolute path of your XML file.

   Note: If you want to insert the content in another location within the output document, you can reference the XML file from any other HTML Fragment extension points.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

Results: Your additional content will be included at the end of the `head` element of your output document.

Related Information:

HTML Fragment Extension Points on page 1071
Publishing Template Package Contents on page 1057

How to Change Numbering Styles for Ordered Lists

Ordered lists (`ol`) are usually numbered in XHTML output using numerals. If you want to change the numbering to alphabetical, follow these steps:

1. Define a custom `outputclass` value and set it as an attribute of the ordered list, as in the following example:

```
<ol outputclass="number-alpha">
    <li>A</li>
    <li>B</li>
```

```
    <li>C</li>
</ol>
```

2. Add the following code snippet in a custom CSS file:

```
ol.number-alpha{
    list-style-type:lower-alpha;
}
```

3. Reference the CSS file in a *WebHelp Responsive* transformation using an *Oxygen Publishing Template* or the `args.css` parameter.

Referencing the Custom CSS from a Publishing Template

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Using the **Navigator** view, copy your custom CSS in a folder inside the publishing template root folder (for example, in the `custom_footer_template/resources` folder).
3. Open the template descriptor file associated with your publishing template and add your custom CSS in the *resources* section.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <resources>
            ...
            <css file="resources/MyCustom.css"/>
```

4. Open the *DITA Map WebHelp Responsive* transformation scenario.
5. Click the **Choose Custom Publishing Template** link and select your template.
6. Click **OK** to save the changes to the transformation scenario.
7. Run the transformation scenario.

Result: Your custom CSS will be applied as a final layer on top of any existing CSS rules and the output will reflect the changes you made.

Referencing the CSS Using the *args.css* Parameter

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and open the **Parameters** tab.
2. Set the `args.css` parameter to the path of your custom CSS file.
3. Set the `args.copycss` parameter to `yes` to automatically copy your custom CSS in the output folder when the transformation scenario is processed.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

Result: Your custom CSS will be applied as a final layer on top of any existing CSS rules and the output will reflect the changes you made.

How to Change the Main Page Layout

This section contains topics that explain how to customize the layout of the main page in the WebHelp Responsive output.

How to Customize the Menu

By default, the menu component is displayed in all WebHelp Responsive pages. However, you might want to hide it completely, or only display some of its menu entries.

How to Hide Some of the Menu Entries

There are two methods for doing this. One of them involves editing the *DITA map* and marking the topics that do not need to be included in the menu, and another one that uses a small CSS customization.

Editing the DITA Map

To edit the metadata in the *DITA map* to control which topics will not be displayed in the menu, follow these steps:

1. Open the *DITA map* in the **Text** editing mode of Oxygen XML Editor plugin.

2. Add the following metadata information in the `topicref` element (or any of its specializations) for each topic you do not want to be displayed in the menu:

```
<topicmeta>
  <data name="wh-menu">
    <data name="hide" value="yes"/>
  </data>
</topicmeta>
```

Customizing the CSS

To customize the CSS to control which topics will not be displayed in the menu, follow these steps:

1. Make sure you set an ID on the topic that you do not want to include in the menu.
2. Create a new CSS file that contains a rule that hides the menu entry generated for the topic (identified by the topic ID `growing-flowers` in the following example). The CSS file should have content that is similar to this:

```
.wh_top_menu *[data-id='growing-flowers'] {
  display:none;
}
```

3. Reference the CSS file in a *WebHelp Responsive* transformation using an *Oxygen Publishing Template* or the `args.css` parameter.

How to Hide the Entire Menu

If you do not want to include a main menu in the pages of the WebHelp Responsive output, you can instruct the transformation scenario to skip the menu generation completely.

Using a Publishing Template

To hide the menu using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the `webhelp.show.top.menu` parameter in the *parameters* section with its value set to no.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="webhelp.show.top.menu" value="no"/>
        </parameters>
    </webhelp>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To hide the menu using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
2. Open the **Parameters** tab and set the `webhelp.show.top.menu` parameter to no.
3. Click **OK** to save the changes to the transformation scenario.
4. Run the transformation scenario.

How to Add a Welcome Message in the WebHelp Responsive Main Page

The main page of the WebHelp Responsive output contains a set of empty placeholders that can be used to display customized text fragments. These placeholders are available to you through WebHelp Responsive transformation scenario parameters. For example, the placeholder identified through the `webhelp.fragment.welcome` parameter displays text content above the search box in the main page.

Using a Publishing Template

To add a customized welcome message in the main page of the WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the `webhelp.fragment.welcome` parameter in the *parameters* section with its value set to one of the following:
   - A small well-formed XHTML fragment (such as: `<i>Welcome to the User Guide</i>`).
   - A path to a file that contains well-formed XHTML content.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="webhelp.fragment.welcome" value="c:\myMessage.xhtml"/>
        </parameters>
    </webhelp>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

   Result: In the WebHelp output, your custom message will be displayed above the search box in the main page.

Using a Transformation Scenario in Oxygen XML Editor/Author

Important: Running WebHelp transformations from a script outside of **Oxygen XML Editor/Author** requires an additional license and some additional setup:

- You must have a valid license for the **Oxygen XML WebHelp Plugin** (https://www.oxygenxml.com/buy_webhelp.html).
- The **Oxygen XML WebHelp Plugin** must be installed and integrated for the DITA Open Toolkit or a DocBook XSL Distribution.

To add a customized welcome message in the main page of the WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
2. Open the **Parameters** tab and set the `webhelp.fragment.welcome` parameter with its value set to one of the following:
   - A small well-formed XHTML fragment (such as: `<i>Welcome to the User Guide</i>`).
   - A path to a file that contains well-formed XHTML content.
3. Click **OK** to save the changes to the transformation scenario.
4. Run the transformation scenario.

   Result: In the WebHelp output, your custom message will be displayed above the search box in the main page.

How to Configure the Tiles on the WebHelp Responsive Main Page

The *tiles* version of the main page of the WebHelp Responsive output displays a tile for each topic found on the first level of the *DITA map*. However, you might want to customize the way they look or even to hide some of them.

Depending on your particular setup, you can choose to customize the these tiles either by setting metadata information in the *DITA map* or by customizing the CSS that is associated with the *DITA map*.

How to Hide Some of the Tiles

If your documentation is very large or there is a large number of topics on the first level, you might want to hide some of the tiles. Also, this might be useful if you only want to display the topics in the first page that are most relevant to your intended audience.

There are two methods for doing this. One of them involves editing the *DITA map* and marking the topics that do not need to be displayed as tiles, and another one that uses a small CSS customization level to hide some tiles identified by the ID of the topic.

Editing the DITA Map

To edit the metadata in the *DITA map* to control which topics on the first level of the *DITA map* will not be displayed as a tile, follow these steps:

1. Open the *DITA map* in the **Text** editing mode of Oxygen XML Editor plugin.
2. Add the following metadata information in the `topicref` element (or any of its specializations) for each first-level topic that you do not want to be displayed as a tile:

```
<topicmeta>
  <data name="wh-tile">
    <data name="hide" value="yes"/>
  </data>
</topicmeta>
```

Customizing the CSS

To customize the CSS to control which topics on the first level of the *DITA map* will not be displayed as a tile, follow these steps:

1. Make sure you set an ID on the topic you want to hide.
2. Create a new CSS file that contains a rule that hides the tile generated for the topic (identified in the following example by the topic ID `growing-flowers`). The CSS file should have content that is similar to this:

```
.wh_tile [data-id='growing-flowers'] {
  display:none;
}
```

3. Reference the CSS file in a *WebHelp Responsive* transformation using an *Oxygen Publishing Template* or the `args.css` parameter.

How to Add an Image to the Tiles

There are two methods that you can use to add an image to a tile. One of them involves editing the *DITA map*, and the other uses a CSS customization.

Editing the DITA Map

To edit the metadata in the *DITA map* to set an image to be displayed in a tile, follow these steps:

1. Open the *DITA map* in the **Text** editing mode of Oxygen XML Editor plugin.
2. Add the following metadata information in the `topicref` element (or any of its specializations) for each first-level topic that will have an image displayed in the corresponding tile:

```
<topicmeta>
  <data name="wh-tile">
    <data name="image" href="img/tile-image.png" format="png">
     <data name="attr-width" value="64"/>
     <data name="attr-height" value="64"/>
    </data>
  </data>
</topicmeta>
```

Note: The `attr-width` and `attr-height` attributes can be used to control the size of the image, but they are optional.

Customizing the CSS

To customize the CSS to set an image to be displayed in a tile, follow these steps:

1. Make sure you set an ID on the topic that you want the tile include an image.
2. Create a new CSS file that contains a rule that associates an image with a specific tile. The CSS file should have content that is similar to this:

```
.wh_tile[data-id='growing-flowers']> div {
    background-image:url('resources/flower.png');
}
```

3. Reference the CSS file in a *WebHelp Responsive* transformation using an *Oxygen Publishing Template* or the `args.css` parameter.

Adding Media Resources

This section contains topics that explain how to add media resources to the published output or the output directory.

How to Copy Additional Resources to Output Directory

You can copy additional resources (such as JavaScript, CSS, or other resources) to the output directory either by using an *Oxygen Publishing Template* or the `webhelp.custom.resources` parameter.

Copying Additional Resources to the Output Directory using a Publishing Template

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Add a new `<fileset>` element in the resources section of the template descriptor file.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <resources>
            <fileset>
                <include name="custom-resources/**/*"/>
                <exclude name="**/*.git"/>
            </fileset>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

Results: All files from the custom resources directory will be copied to the *`WebHelp Output Directory`*`/oxygen-webhelp/template` folder.

Copying Additional Resources to the Output Directory using a Transformation Parameter

1. Place all your resources in the same directory.
2. Edit the *DITA Map WebHelp Responsive* transformation scenario and open the **Parameters** tab.
3. Edit the value of the `webhelp.custom.resources` parameter and set it to the absolute path of the directory in step 1.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

Results: All files from the new directory will be copied to the root of the WebHelp output directory.

How to Add a Logo Image in the Title Area

You can customize **WebHelp Responsive** output to include a logo in the title area. It will be displayed before the publication title. You can also specify a URL that can be used to send users to a specific website when they click the logo image.

This customization can be done using an *Oxygen Publishing Template* or using a transformation scenario from within **Oxygen XML Editor/Author**.

Using a Publishing Template

To add a logo in the title area of your WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the `webhelp.logo.image` parameter in the *parameters* section with its value set to path of your logo.
3. If you also want to add a link to your website when you click the logo image, set its URL in the `webhelp.logo.image.target.url` parameter.

```
<publishing-template>
    ...
```

```
<webhelp>
    ...
    <parameters>
        <parameter name="webhelp.logo.image" value="c:\myLogo.jpg"/>
        <parameter name="webhelp.logo.image.target.url" value="http://sample.com"/>
    </parameters>
</webhelp>
```

4. Open the *DITA Map WebHelp Responsive* transformation scenario.
5. Click the **Choose Custom Publishing Template** link and select your template.
6. Click **OK** to save the changes to the transformation scenario.
7. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To add a logo in the title area of your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
2. Open the **Parameters** tab and set the `webhelp.logo.image` parameter to the path of your logo.
3. If you also want to add a link to your website when you click the logo image, set its URL in the `webhelp.logo.image.target.url` parameter.
4. Click **OK** to save the changes to the transformation scenario.
5. Run the transformation scenario.

How to Add a Favicon in WebHelp Systems

You can add a custom *favicon* to your WebHelp output by simply using a parameter in the transformation scenario to point to your *favicon* image.

This customization can be done using an *Oxygen Publishing Template* or using a transformation scenario from within **Oxygen XML Editor/Author**.

Using a Publishing Template

To add a *favicon* to your WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the `webhelp.favicon` parameter in the *parameters* section with its value set to path of your image.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="webhelp.favicon" value="c:\myFavicon.jpg"/>
        </parameters>
    </webhelp>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

   Result: Browsers that provide *favicon* support will display the *favicon* (typically in the browser's address bar, in the list of bookmarks, and in the history).

Using a Transformation Scenario in Oxygen XML Editor/Author

To add a *favicon* to your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
2. Open the **Parameters** tab and set the `webhelp.favicon` parameter to the path of your image.
3. Click **OK** to save the changes to the transformation scenario.
4. Run the transformation scenario.

How to Add Video and Audio Objects in DITA WebHelp Output

You can insert references to video and audio media resources (such as videos, audio clips, or embedded HTML frames) in your DITA topics and then publish them to WebHelp output. The media objects can be played directly in all HTML5-based outputs, including WebHelp systems.

To add media objects in the WebHelp output generated from DITA documents, follow the procedures below.

Adding Videos to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the video through one of the following methods:
   - Use the **Insert Media Object** toolbar action.
   - Drag (or copy) the video file from your system explorer or the **Navigator** view and drop (or paste) it into your document.
   - Manually add an `object` element, as in one of the following examples:

     ```
     <object outputclass="video" type="video/mp4" data="MyVideo.mp4"/>
     ```

     or, instead of the `data` attribute, you can specify the video using a parameter like this:

     ```
     <object outputclass="video">
       <param name="src" value="videos/MyVideo.mp4"/>
     </object>
     ```
2. Apply a **DITA to WebHelp** transformation to obtain the output.

   Result: The transformation converts the `object` element to an HTML5 `video` element.

   ```
   <video controls="controls"><source type="video/mp4" src="MyVideo.mp4"></source>
   </video>
   ```

Adding Audio Clips to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the audio clip through one of the following methods:
   - Use the **Insert Media Object** toolbar action.
   - Drag (or copy) the audio file from your system explorer or the **Navigator** view and drop (or paste) it into your document.
   - Manually add an `object` element, as in one of the following examples:

     ```
     <object outputclass="audio" type="audio/mpeg" data="MyClip.mp3"/>
     ```

     or, instead of the `data` attribute, you can specify the video using a parameter like this:

     ```
     <object outputclass="audio">
       <param name="src" value="audio/MyClip.mp3"/>
     </object>
     ```
2. Apply a **DITA to WebHelp** transformation to obtain the output.

   Result: The transformation converts the `object` element to an HTML5 `audio` element.

   ```
   <audio controls="controls"><source type="audio/mpeg" src="MyClip.mp3"></source>
   </audio>
   ```

Adding Embedded HTML Frames (such as YouTube videos) to DITA WebHelp Output

1. Edit the DITA topic and insert a reference to the embedded object by using the **Insert Media Object** toolbar action or by manually adding an `object` element, as in one of the following examples:

   ```
   <object outputclass="iframe" data="https://www.youtube.com/embed/m_vv2s5Trn4"/>
   ```

   or, instead of the `data` attribute, you can specify the object using a parameter like this:

   ```
   <object outputclass="iframe">
     <param name="src" value="http://www.youtube.com/embed/m_vv2s5Trn4"/>
   ```

```
</object>
```

2. If you want the video to be allowed to play in full screen mode once the document is converted to XHTML output, also add an `allowfullscreen` parameter and set its value to **true**:

```
<object outputclass="iframe" data="https://www.youtube.com/embed/m_vv2s5Trn4"/>
  <param name="allowfullscreen" value="true"/>
</object>
```

   Tip: If you copy the embed code from the source and paste it into the **Insert Media** dialog box (see the specific instructions: here), the `allowfullscreen` parameter will automatically be added and all you have to do is set the value to **true**.

3. Apply a **DITA to WebHelp** transformation to obtain the output.

   Result: The transformation converts the `object` element to an HTML5 `iframe` element.

```
<iframe controls="controls" src="https://www.youtube.com/embed/m_vv2s5Trn4">
</iframe>
```

For more information, see the following video demonstration:

https://www.youtube.com/embed/llX11gS4WaU

Related Information:

Adding Video, Audio, and Embedded HTML Resources in DITA Topics on page 1511

Searching the Output

This section contains topics that explain how to use some of the search features in WebHelp Responsive output.

How to Change Element Scoring in Search Results

The WebHelp **Search** feature is enhanced with a rating mechanism that computes scores for every page that matches the search criteria. HTML tag elements are assigned a scoring value and these values are evaluated for the search results. The WebHelp directory includes a properties file that defines the scoring values for tag elements and this file can be edited to customize the values according to your needs.

To edit the scoring values of HTML tag element for enhancing WebHelp search results, follow these steps:

1. Edit the scoring properties file for DITA. The properties file includes instructions and examples to help you with your customization. The file is located in: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.responsive\indexer\scoring.properties`.

   The values that can be edited in the `scoring.properties` file:

```
h1 = 10
h2 = 9
h3 = 8
h4 = 7
h5 = 6
h6 = 5
b = 5
strong = 5
em = 3
i=3
u=3
div.toc=-10
title=20
div.ignore=ignored
meta_keywords = 20
meta_indexterms = 20
meta_description = 25
shortdesc=25
```

2. Save your changes to the file.
3. Re-run your WebHelp transformation.

How to Exclude Certain DITA Topics from Search Results

There are several ways to exclude certain DITA resources from your WebHelp system's search results. This is useful if you have topics in your *DITA map* structure that you do not want to be included in search results for your WebHelp system. The first method involves setting a parameter in the WebHelp transformation scenario and the second involves setting an attribute for each DITA topic reference that you want to exclude.

Transformation Parameter Method

To exclude DITA topics from WebHelp search results using a transformation parameter, follow these steps:

1. Create a simple text file that will contain your excluded file patterns. Each pattern must be on a new line. The patterns are considered to be relative to the output directory and they accept wildcards such as '`*`' (matches zero or more characters) or '`?`' (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

   Example: Suppose that in your project, you want to exclude all files located in the `resources` directory and all files located in the `topics` directory that have a `.bak` file extension. You could create a simple text file (for example, named `exclude.properties`), and add the following lines:

   ```
   resources/*
   topics/*.bak
   ```

2. Set the `webhelp.search.custom.excludes.file` parameter to specify the path to the file that contains the excluded file patterns (for example, `exclude.properties` in step 1). The parameter can be specified in the *parameters* section of the template descriptor file associated with your publishing template or in the **Parameters** tab of the transformation scenario dialog box in **Oxygen XML Editor/Author**.
3. Run the transformation.

Search Attribute Method

The WebHelp **Search** engine does not index DITA topics that have the `@search` attribute set to no.

To exclude DITA topics from WebHelp search results using this attribute, follow these steps:

1. Edit the *DITA map* and for any `topicref` that you want to exclude from search results, set the `search` attribute to no.

   For example:

   ```
   <topicref href="../topics/internal-topic1.dita" search="no"/>
   ```

2. Save your changes to the *DITA map*.
3. Run your WebHelp system transformation.

How to Optimize Search Results

A **DITA Map WebHelp** transformation scenario can be configured to produce a `sitemap.xml` file that is used by search engines to aid crawling and indexing mechanisms. A *sitemap* lists all pages of a WebHelp system and allows webmasters to provide additional information about each page, such as the date it was last updated, change frequency, and importance of each page in relation to other pages in your WebHelp deployment.

The structure of the `sitemap.xml` file looks like this:

```
<urlset xmlns="http://www.sitemaps.org/schemas/sitemap/0.9">
  <url>
    <loc>http://www.example.com/topics/introduction.html</loc>
    <lastmod>2014-10-24</lastmod>
    <changefreq>weekly</changefreq>
    <priority>0.5</priority>
  </url>
  <url>
    <loc>http://www.example.com/topics/care.html#care</loc>
    <lastmod>2014-10-24</lastmod>
    <changefreq>weekly</changefreq>
    <priority>0.5</priority>
  </url>
    .  .  .
</urlset>
```

Each page has a <url> element structure containing additional information, such as:

- **loc** - the URL of the page. This URL must begin with the protocol (such as `http`), if required by your web server. It is constructed from the value of the `webhelp.sitemap.base.url` parameter from the transformation scenario and the relative path to the page (collected from the `href` attribute of a `topicref` element in the *DITA map*).

  Note: The value must have fewer than 2,048 characters.
- **lastmod** (optional) - the date when the page was last modified. The date format is `YYYY-MM-DD`.

- **changefreq** (optional) - indicates how frequently the page is likely to change. This value provides general information to assist search engines, but may not correlate exactly to how often they crawl the page. Valid values are: `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, and `never`. The first time the `sitemap.xml` file is generated, the value is set based upon the value of the `webhelp.sitemap.change.frequency` parameter in the DITA WebHelp transformation scenario. You can change the value in each `url` element by editing the `sitemap.xml` file.

  Note: The value `always` should be used to describe documents that change each time they are accessed. The value `never` should be used to describe archived URLs.
- **priority** (optional) - the priority of this page relative to other pages on your site. Valid values range from 0.0 to 1.0. This value does not affect how your pages are compared to pages on other sites. It only lets the search engines know which pages you deem most important for the crawlers. The first time the `sitemap.xml` file is generated, the value is set based upon the value of the `webhelp.sitemap.priority` parameter in the DITA WebHelp transformation scenario. You can change the value in each `url` element by editing the `sitemap.xml` file.

Creating and Editing the `sitemap.xml` File

Follow these steps to produce a `sitemap.xml` file for your WebHelp system, which can then be edited to fine-tune search engine optimization:

1. **Edit** the transformation scenario you currently use for obtaining your WebHelp output. This opens the **Edit DITA Scenario** dialog box.
2. Open the **Parameters** tab and set a value for the following parameters:
   - **webhelp.sitemap.base.url** - the URL of the location where your WebHelp system is deployed

     Note: This parameter is required for Oxygen XML Editor plugin to generate the `sitemap.xml` file.
   - **webhelp.sitemap.change.frequency** - how frequently the WebHelp pages are likely to change (accepted values are: `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, and `never`)
   - **webhelp.sitemap.priority** - the priority of each page (value ranging from 0.0 to 1.0)
3. Run the transformation scenario.
4. Look for the `sitemap.xml` file in the transformation's output folder. Edit the file to fine-tune the parameters of each page, according to your needs.

How to Index Japanese Content

To optimize the indexing of Japanese content in WebHelp pages, the Lucene Kuromoji Japanese analyzer can be used. This analyzer is included in the **Oxygen XML Editor/Author** installation kit.

Using a Publishing Template

To add a logo in the title area of your WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the `args.default.language` parameter in the *parameters* section with its value set to `ja-jp`.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="args.default.language" value="ja-jp"/>
        </parameters>
    </webhelp>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To activate the Japanese indexing in your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit a **DITA to WebHelp** transformation scenario and in the **Parameters** tab, set the value of the `args.default.language` parameter to `ja-jp`.

   Note: Alternatively, you could set the `xml:lang` attribute on the root of the *DITA map* and the referenced topics to `ja-jp`. Another alternative for DITA output is to use the `webhelp.search.japanese.dictionary` parameter to specify a path to a Japanese dictionary that will be used by the *Kuromoji* morphological engine.
2. Run the WebHelp transformation scenario to generate the output.

Localization

This section contains topics that explain how to use the localization support in WebHelp Responsive output.

How to Localize Email Notifications of Feedback System

The feedback-enabled WebHelp Responsive systems use emails to notify users when comments are posted. These emails are based on templates stored in the WebHelp directory. The default messages are in English, French, German, and Japanese. These messages are copied into the WebHelp system deployment directory during the execution of the corresponding transformation scenario.

Using a Publishing Template

To change the language of the emails for DITA Map WebHelp Responsive with Feedback output using an *Oxygen Publishing Template*, follow this procedure:

1. Create the following directory:

   DITA-OT-DIR`\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\nl`
2. Copy all English template files from *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\en` and paste them into the directory you just created.
3. Edit the HTML files from the *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\nl` directory and translate the content into your language.
4. Open the template descriptor file associated with your publishing template and add the `args.default.language` parameter in the *parameters* section with its value set to the appropriate language code (for example, `nl` for Dutch).

   Note: If you set the parameter to a value such as `LanguageCode-CountryCode` (for example, `en-us`), the transformation scenario will only use the language code.

   ```
   <publishing-template>
       ...
       <webhelp>
           ...
           <parameters>
               <parameter name="args.default.language" value="nl"/>
           </parameters>
       </webhelp>
   ```
5. Open the *DITA Map WebHelp Responsive* transformation scenario.
6. Click the **Choose Custom Publishing Template** link and select your template.
7. Click **OK** to save the changes to the transformation scenario.
8. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To change the language of the emails for DITA Map WebHelp Responsive with Feedback output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create the following directory:

DITA-OT-DIR\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\nl

2. Copy all English template files from *DITA-OT-DIR*\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\en and paste them into the directory you just created.
3. Edit the HTML files from the *DITA-OT-DIR*\plugins\com.oxygenxml.webhelp.responsive\oxygen-webhelp\resources\php\templates\nl directory and translate the content into your language.
4. Edit a **DITA Map WebHelp Responsive** transformation scenario and open the **Parameters** tab.
5. In the **Parameters** tab, look for the `args.default.language` parameter and set its value to the appropriate language code (for example, `nl` for Dutch).

   Note: If you set the parameter to a value such as `LanguageCode-CountryCode` (for example, `en-us`), the transformation scenario will only use the language code.
6. Run the transformation scenario.

Related Information:

Feedback System on page 1049

How to Localize the Interface of WebHelp Responsive Output

Static labels used in the WebHelp output are stored in translation files that have the *strings-lang1-lang2.xml* name format, where *lang1* and *lang2* are ISO language codes. For example, the US English labels are kept in the *strings-en-us.xml* file.

These translation files are collected from two locations:

- *DITA-OT-DIR*/xsl/common folder - DITA-OT's default translations.
- *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization folder - These translations are contributed by the WebHelp plugin and extend the default ones provided by DITA-OT. The labels defined in this folder take precedence over the DITA-OT default ones.

  Important: If you need to customize the translation labels, you should do this by updating the translation files found in the *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization folder.

Using a Publishing Template

To localize the interface of the DITA Map to WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. Look for the *strings-[lang1]-[lang2].xml* file in *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization directory (for example, the Canadian French file would be: *strings-fr-ca.xml*). If it does not exist, use the following procedure to create one:
   a. Create a new `strings-fr-ca.xml` file in the *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization directory.
   b. Copy all the labels found in the *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization/strings-en-us.xml and paste them into the newly created file.
   c. Copy all the labels found in the DITA-OT_DIR/xsl/common/strings-en-us.xml and paste them into the newly created file.
2. Translate all the labels from the above language file. Labels are stored in XML elements that have the following format: `<str name="Label name">Caption</str>`.
3. In the home directory of the DITA Open Toolkit, run the `startcmd.bat` script on Windows or `startcmd.sh` script on Linux/Mac OS X. In the displayed command line interface console, run `ant -f integrator.xml`.
4. Make sure that the new XML file that you created is listed in the file *DITA-OT-DIR*/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization/strings.xml. For example, the Canadian French file would be listed as: `<lang xml:lang="fr-ca" filename="strings-fr-ca.xml"/>`.

5. Open the template descriptor file associated with your publishing template and add the `args.default.language` parameter in the *parameters* section with its value set to the appropriate language code (for example, *fr-ca* for Canadian French).

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="args.default.language" value="fr-ca"/>
        </parameters>
    </webhelp>
```

6. Open the *DITA Map WebHelp Responsive* transformation scenario.
7. Click the **Choose Custom Publishing Template** link and select your template.
8. Click **OK** to save the changes to the transformation scenario.
9. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To localize the interface of the DITA Map to WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Look for the *strings-[lang1]-[lang2].xml* file in *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization` directory (for example, the Canadian French file would be: *strings-fr-ca.xml*). If it does not exist, use the following procedure to create one:
   a. Create a new `strings-fr-ca.xml` file in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization` directory.
   b. Copy all the labels found in the *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization/strings-en-us.xml` and paste them into the newly created file.
   c. Copy all the labels found in the `DITA-OT_DIR/xsl/common/strings-en-us.xml` and paste them into the newly created file.
2. Translate all the labels from the above language file. Labels are stored in XML elements that have the following format: `<str name="Label name">Caption</str>`.
3. Run the predefined transformation scenario called **Run DITA-OT Integrator** from the **Apply Transformation Scenario(s)** or **Configure Transformation Scenario(s)** dialog box. If the *integrator* is not visible, select the **Show all scenarios** action that is available in the **Settings** drop-down menu.
4. Make sure that the new XML file that you created is listed in the file *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/oxygen-webhelp/resources/localization/strings.xml`. For example, the Canadian French file would be listed as: `<lang xml:lang="fr-ca" filename="strings-fr-ca.xml"/>`.
5. Edit a **DITA Map to WebHelp Responsive** transformation scenarios (with or without feedback) and set the `args.default.language` parameter to the code of the language you want to localize (for example, *fr-ca* for Canadian French).
6. Run the transformation scenario to produce the WebHelp output.

Related Information:

How to Index Japanese Content on page 1098

How to Activate Support for Right-to-Left (RTL) Languages

To activate support for RTL (right-to-left) languages in WebHelp output, edit the *DITA map* and set the `xml:lang` attribute on its root element (`map`). The corresponding attribute value can be set for following RTL languages:

- `ar-eg` - Arabic
- `he-il` - Hebrew
- `ur-pk` - Urdu

Integrate Social Media and Google Tools in the WebHelp Output

Oxygen XML Editor plugin includes support for integrating some of the most popular social media sites in WebHelp output.

How to Add a Facebook Like Button in WebHelp Responsive Output

It is possible to integrate Facebook™ into your **WebHelp Responsive** output and you can specify where you want the widget to appear in your WebHelp page.

Using a Publishing Template

To add a Facebook™ *Like* widget to your WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. Go to the Facebook Developers website.
2. Fill-in the displayed form, then click the **Get Code** button.
3. Copy the two code snippets and paste them into a `<div>` element inside an XML file called `facebook-widget.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="facebook">
    <div id="fb-root"/>
    <script>
        <!--
            (function(d, s, id) {
        var js, fjs = d.getElementsByTagName(s)[0];
        if (d.getElementById(id)) return;
        js = d.createElement(s); js.id = id;
        js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
        fjs.parentNode.insertBefore(js, fjs);
        }(document, 'script', 'facebook-jssdk'));
        -->
    </script>
    <div class="fb-like" data-layout="standard" data-action="like"
        data-show-faces="true" data-share="true"/>
</div>
```

4. Open the template descriptor file associated with your publishing template.
5. Use one of the parameters that begin with *webhelp.fragment* in the *html-fragments* section of the descriptor file. Set the value of that parameter to reference the `facebook-widget.xml` file that you created earlier.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <html-fragments>
        <fragment
          file="HTML-fragments/facebook-widget.xml"
          placeholder="webhelp.fragment.after.toc_or_tiles"/>
      </html-fragments>
    </webhelp>
```

6. Open the *DITA Map WebHelp Responsive* transformation scenario.
7. Click the **Choose Custom Publishing Template** link and select your template.
8. Click **OK** to save the changes to the transformation scenario.
9. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To add a Facebook™ *Like* widget to your WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Facebook Developers website.
2. Fill-in the displayed form, then click the **Get Code** button.
3. Copy the two code snippets and paste them into a `<div>` element inside an XML file called `facebook-widget.xml`. Make sure you follow these rules:

- The file must be well-formed.
- The code for each `script` element must be included in an XML comment.
- The start and end tags for the XML comment must be on a separate line.

  The content of the XML file should look like this:

```
<div id="facebook">
    <div id="fb-root"/>
    <script>
        <!--
            (function(d, s, id) {
        var js, fjs = d.getElementsByTagName(s)[0];
        if (d.getElementById(id)) return;
        js = d.createElement(s); js.id = id;
        js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
        fjs.parentNode.insertBefore(js, fjs);
        }(document, 'script', 'facebook-jssdk'));
        -->
    </script>
    <div class="fb-like" data-layout="standard" data-action="like"
        data-show-faces="true" data-share="true"/>
</div>
```

4. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
5. Switch to the **Parameters** tab. Depending on where you want to display the button, edit one of the parameters that begin with *webhelp.fragment*. Set that parameter to reference the `facebook-widget.xml` file that you created earlier.
6. Click **Ok** and run the transformation scenario.

How to Add a Google+ Button in WebHelp Responsive Output

It is possible to integrate *Google* into your **WebHelp Responsive** output and you can specify where you want the widget to appear in your WebHelp page.

Using a Publishing Template

To add a *Google+* widget to your WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. Go to the Google Developers website.
2. Fill-in the displayed form. The preview area on the right side displays the code and a preview of the widget.
3. Copy the code snippet displayed in the preview area and paste it into a `div` element inside an XML file called `google-plus-button.xml`. Make sure that the content of the file is well-formed. The content of the XML file should look like this:

```
<div id="google-plus">
  <!-- Place this tag in your head or just before your close body tag. -->
  <script src="https://apis.google.com/js/platform.js" async defer></script>

  <!-- Place this tag where you want the +1 button to render. -->
  <div class="g-plusone" data-annotation="inline" data-width="300"></div>
</div>
```

4. Open the template descriptor file associated with your publishing template.
5. Use one of the parameters that begin with *webhelp.fragment* in the *html-fragments* section of the descriptor file. Set the value of that parameter to reference the `google-plus-button.xml` file that you created earlier.

```
<publishing-template>
    ...
    <webhelp>
        ...
      <html-fragments>
        <fragment
          file="HTML-fragments/google-plus-button.xml"
          placeholder="webhelp.fragment.after.toc_or_tiles"/>
      </html-fragments>
    </webhelp>
```

6. Open the *DITA Map WebHelp Responsive* transformation scenario.
7. Click the **Choose Custom Publishing Template** link and select your template.
8. Click **OK** to save the changes to the transformation scenario.
9. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To add a *Google+* widget to your WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Developers website.
2. Fill-in the displayed form. The preview area on the right side displays the code and a preview of the widget.
3. Copy the code snippet displayed in the preview area and paste it into a `div` element inside an XML file called `google-plus-button.xml`. Make sure that the content of the file is well-formed. The content of the XML file should look like this:

```
<div id="google-plus">
  <!-- Place this tag in your head or just before your close body tag. -->
  <script src="https://apis.google.com/js/platform.js" async defer></script>

  <!-- Place this tag where you want the +1 button to render. -->
  <div class="g-plusone" data-annotation="inline" data-width="300"></div>
</div>
```

4. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
5. Switch to the **Parameters** tab. Depending on where you want to display the button, edit one of the parameters that begin with *webhelp.fragment*. Set that parameter to reference the `google-plus-button.xml` file that you created earlier.
6. Click **Ok** and run the transformation scenario.

How to Add Tweet Button in WebHelp Responsive Output

It is possible to integrate *Twitter* into your **WebHelp Responsive** output and you can specify where you want the widget to appear in your WebHelp page.

Using a Publishing Template

To add a Twitter™ *Tweet* widget to your WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. Go to the Tweet button generator page.
2. Fill-in the displayed form. The **Preview and code** area displays the code that you will need.
3. Copy the code snippet displayed in the **Preview and code** area and paste it into a `div` element inside an XML file called `tweet-button.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="twitter">
  <a href="https://twitter.com/share" class="twitter-share-button">Tweet</a>
  <script>
    <!--
      !function (d, s, id) {
      var
      js, fjs = d.getElementsByTagName(s)[0], p = /^http:/.test(d.location)
 ? 'http': 'https';
      if (! d.getElementById(id)) {
      js = d.createElement(s);
      js.id = id;
      js.src = p + '://platform.twitter.com/widgets.js';
      fjs.parentNode.insertBefore(js, fjs);
      }
      }
      (document,
      'script', 'twitter-wjs');
     -->
  </script>
</div>
```

4. Open the template descriptor file associated with your publishing template.
5. Use one of the parameters that begin with *webhelp.fragment* in the *html-fragments* section of the descriptor file. Set the value of that parameter to reference the `tweet-button.xml` file that you created earlier.

```
<publishing-template>
    ...
    <webhelp>
```

```
      ...
    <html-fragments>
      <fragment
        file="HTML-fragments/tweet-button.xml"
        placeholder="webhelp.fragment.after.toc_or_tiles"/>
    </html-fragments>
  </webhelp>
```

6. Open the *DITA Map WebHelp Responsive* transformation scenario.
7. Click the **Choose Custom Publishing Template** link and select your template.
8. Click **OK** to save the changes to the transformation scenario.
9. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To add a Twitter™ *Tweet* widget to your WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Tweet button generator page.
2. Fill-in the displayed form. The **Preview and code** area displays the code that you will need.
3. Copy the code snippet displayed in the **Preview and code** area and paste it into a `div` element inside an XML file called `tweet-button.xml`. Make sure you follow these rules:
   - The file must be well-formed.
   - The code for each `script` element must be included in an XML comment.
   - The start and end tags for the XML comment must be on a separate line.

   The content of the XML file should look like this:

```
<div id="twitter">
  <a href="https://twitter.com/share" class="twitter-share-button">Tweet</a>
  <script>
    <!--
      !function (d, s, id) {
      var
      js, fjs = d.getElementsByTagName(s)[0], p = /^http:/.test(d.location)
 ? 'http': 'https';
      if (! d.getElementById(id)) {
      js = d.createElement(s);
      js.id = id;
      js.src = p + '://platform.twitter.com/widgets.js';
      fjs.parentNode.insertBefore(js, fjs);
      }
      }
      (document,
      'script', 'twitter-wjs');
     -->
  </script>
</div>
```

4. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
5. Switch to the **Parameters** tab. Depending on where you want to display the button, edit one of the parameters that begin with *webhelp.fragment*. Set that parameter to reference the `tweet-button.xml` file that you created earlier.
6. Click **Ok** and run the transformation scenario.

How to Integrate Google Analytics in WebHelp Responsive Output

You can use *Google Analytics* to track and report site data for your **WebHelp Responsive** output.

Using a Publishing Template

To integrate *Google Analytics* into your WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. Create a new Google Analytics account (if you do not already have one) and log on.
2. Choose the Analytics solution that best fits the needs of your website.
3. Follow the on-screen instructions to obtain a **Tracking Code** that contains your *Tracking ID*. A **Tracking Code** looks like this:

```
<script>
 (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
 (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
```

```
 m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
 })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

 ga('create', 'UA-XXXXXXXX-X', 'auto');
 ga('send', 'pageview');
</script>
```

4. Save the Tracking Code (obtained in the previous step) in a new XML file called `googleAnalytics.xml`. Note that the file should only contain the tracking code.
5. Open the template descriptor file associated with your publishing template.
6. Use the webhelp.fragment.after.body parameter in the *html-fragments* section of the descriptor file. Set the value of that parameter to reference the `googleAnalytics.xml` file that you created earlier. The content of this file will be copied at the end of all generated output pages, right before the ending `<body>` element. This ensures that the page is loaded before the Google Analytics servers are contacted, thus reducing page loading time.

```
<publishing-template>
    ...
    <webhelp>
        ...
      <html-fragments>
        <fragment
          file="HTML-fragments/googleAnalytics.xml"
          placeholder="webhelp.fragment.after.body"/>
      </html-fragments>
    </webhelp>
```

7. Open the *DITA Map WebHelp Responsive* transformation scenario.
8. Click the **Choose Custom Publishing Template** link and select your template.
9. Click **OK** to save the changes to the transformation scenario.
10. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To integrate *Google Analytics* into your WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a new Google Analytics account (if you do not already have one) and log on.
2. Choose the Analytics solution that best fits the needs of your website.
3. Follow the on-screen instructions to obtain a **Tracking Code** that contains your *Tracking ID*. A **Tracking Code** looks like this:

```
<script>
 (function(i,s,o,g,r,a,m){i['GoogleAnalyticsObject']=r;i[r]=i[r]||function(){
 (i[r].q=i[r].q||[]).push(arguments)},i[r].l=1*new Date();a=s.createElement(o),
 m=s.getElementsByTagName(o)[0];a.async=1;a.src=g;m.parentNode.insertBefore(a,m)
 })(window,document,'script','//www.google-analytics.com/analytics.js','ga');

 ga('create', 'UA-XXXXXXXX-X', 'auto');
 ga('send', 'pageview');
</script>
```

4. Save the Tracking Code (obtained in the previous step) in a new XML file called `googleAnalytics.xml`. Note that the file should only contain the tracking code.
5. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
6. Switch to the **Parameters** tab. Edit the webhelp.fragment.after.body parameter and set it to reference the `googleAnalytics.xml` file that you created earlier. The content of this file will be copied at the end of all generated output pages, right before the ending `<body>` element. This ensures that the page is loaded before the Google Analytics servers are contacted, thus reducing page loading time.
7. Click **Ok** and run the transformation scenario.

How to Integrate Google Search in WebHelp Responsive Output

It is possible to integrate the *Google Search Engine* into your **WebHelp Responsive** output and you can specify where you want the results to appear in your WebHelp page.

Using a Publishing Template

To integrate the *Google Search Engine* into your WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. Go to the Google Custom Search Engine page using your Google account.
2. Select the **Create a custom search engine** button.
3. Follow the on-screen instructions to create a search engine for your site. At the end of this process you should obtain a code snippet that looks like this:

```
<script>
 (function()  {
  var cx =
    '000888210889775888983:8mn4x_mf-yg';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ?
    'https:' : 'http:') +         '//www.google.com/cse/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
 }
 )();
</script>
```

4. Save the script into a well-formed HTML file called `googlecse.html`.
5. Open the template descriptor file associated with your publishing template and add the `webhelp.google.search.script` parameter in the *parameters* section with its value set to reference the `googlecse.html` file that you created earlier.

```
<publishing-template>
  ...
  <webhelp>
     ...
     <parameters>
         <parameter name="webhelp.google.search.script" value="resources/googlecse.html"/>
     </parameters>
  </webhelp>
```

6. You can also use the `webhelp.google.search.results` parameter to choose where to display the search results.
   a. Create an HTML file with the following content: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName-"searchQuery"></div>` (you must use the HTML5 version for the GCSE). For more information about other supported attributes, see Google Custom Search: Supported Attributes.
   b. Set the value of the `webhelp.google.search.results` parameter to the file path of the file you just created. If this parameter is not specified, the following code is used: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName="searchQuery"></div>`.
7. Open the *DITA Map WebHelp Responsive* transformation scenario.
8. Click the **Choose Custom Publishing Template** link and select your template.
9. Click **OK** to save the changes to the transformation scenario.
10. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To integrate the *Google Search Engine* into your WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Go to the Google Custom Search Engine page using your Google account.
2. Select the **Create a custom search engine** button.
3. Follow the on-screen instructions to create a search engine for your site. At the end of this process you should obtain a code snippet that looks like this:

```
<script>
 (function()  {
  var cx =
    '000888210889775888983:8mn4x_mf-yg';
  var gcse = document.createElement('script');
  gcse.type = 'text/javascript';
  gcse.async = true;
  gcse.src = (document.location.protocol == 'https:' ?
    'https:' : 'http:') +         '//www.google.com/cse/cse.js?cx=' + cx;
  var s = document.getElementsByTagName('script')[0];
  s.parentNode.insertBefore(gcse, s);
 }
 )();
```

```
</script>
```

4. Save the script into a well-formed HTML file called `googlecse.html`.
5. Edit the *DITA Map WebHelp Responsive* transformation scenario and choose a *template*.
6. Switch to the **Parameters** tab and edit the `webhelp.google.search.script` parameter to reference the `googlecse.html` file that you created earlier.
7. You can also use the `webhelp.google.search.results` parameter to choose where to display the search results.
   a. Create an HTML file with the following content: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName-"searchQuery"></div>` (you must use the HTML5 version for the GCSE). For more information about other supported attributes, see Google Custom Search: Supported Attributes.
   b. Set the value of the `webhelp.google.search.results` parameter to the file path of the file you just created. If this parameter is not specified, the following code is used: `<div class="gcse-searchresults-only" data-autoSearchOnLoad="true" data-queryParameterName="searchQuery"></div>`.
8. Click **Ok** and run the transformation scenario.

XSLT Extensions

Since WebHelp Responsive output is primarily obtained by running XSLT transformations over the DITA input files (through the **DITA Map WebHelp Responsive** transformation scenarios), one customization method would be to override the default XSLT templates that are used by the WebHelp Responsive transformations.

There are two methods available to override the XSLT stylesheets implied by the WebHelp Responsive transformation.

- Use *XSLT-import extension points* from an *Oxygen Publishing Template*.

  Note: Use this method if you want to affect only the transformations that use this *publishing template*.
- Use *XSLT-import extension points* from a DITA-OT extension plugin.

  Note: This method will affect all the outputs generated with the WebHelp system.

Related Information:

WebHelp Responsive XSLT-Import and XSLT-Parameter Extension Points on page 1082

How to Use XSLT Extension Points from a Publishing Template

This example demonstrates how to use WebHelp XSLT-import Extension Points from a *Oxygen Publishing Template*.

Use Case 1: Add Copyright Information Extracted from a DITA Bookmap

Suppose you want to customize the WebHelp Responsive main page by adding information about the legal rights associated with the book in the footer (for example, copyright dates and owner). This information is specified in the bookmap:

```
<bookrights>
  <copyrfirst>
    <year>2002</year>
  </copyrfirst>
  <copyrlast>
    <year>2017</year>
  </copyrlast>
  <bookowner>
    <organization>SyncRO Soft SRL</organization>
  </bookowner>
</bookrights>
```

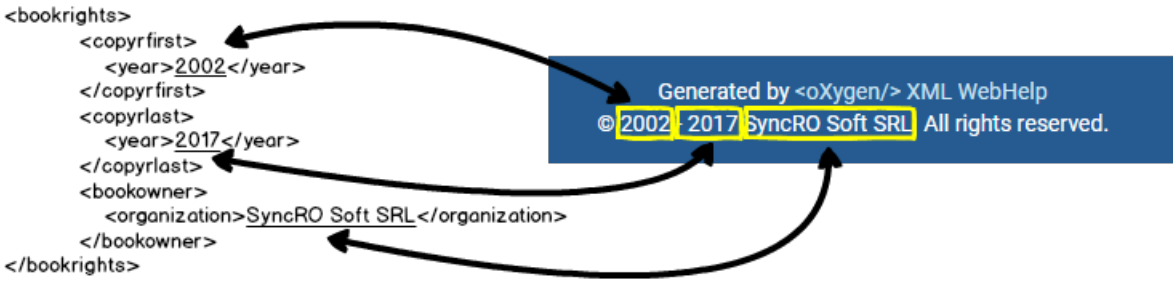


Figure 580: Example: Copyright information added in the WebHelp footer

The XSLT stylesheet that generates the main page is located in: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.responsive\xsl\mainFiles\createMainPage.xsl`. This XSLT stylesheet declares the `copy_template` mode that processes the main page template to expand its components. The main page template declares a component for the footer section that looks like this:

```
<div class=" footer-container text-center ">
  <whc:include_html href="${webhelp.fragment.footer}"/>
</div>
```

In the following example, the extension stylesheet will add a template that matches this component. It applies the default processing and adds the copyright information at the end.

```
<xsl:template match="*:div[contains(@class, 'footer-container')]" mode="copy_template">
  <!-- Apply the default processing -->
  <xsl:next-match/>

  <!-- Add a div containing the copyright information -->
  <div class="copyright_info">
      <xsl:choose>
          <!-- Adds the start-end years if they are defined -->
          <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst) and
                          exists($toc/*:topicmeta/*:bookrights/*:copyrlast)">
              <span class="copyright_years">
                 &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                       -<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrlast"/>
              </span>
          </xsl:when>

          <!-- Adds only the first year if last is not defined. -->
          <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst)">
              <span class="copyright_years">
                 &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
              </span>
          </xsl:when>
      </xsl:choose>


      <xsl:if test="exists($toc/*:topicmeta/*:bookrights/*:bookowner/*:organization)">
          <span class="organization">
              <xsl:text> </xsl:text><xsl:value-of
                  select="$toc/*:topicmeta/*:bookrights/*:bookowner/*:organization"/>
              <xsl:text>. All rights reserved.</xsl:text>
          </span>
      </xsl:if>
  </div>
</xsl:template>
```

To add this functionality using a , follow these steps:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Link the folder associated with the template in the **Navigator** view.
   You should have the `custom_footer_template` folder linked in your project.
3. Using the **Navigator** view, create an `xslt` folder inside the project root folder.
   You should have the `custom_footer_template/xsl` folder in your project.
4. Create your customization stylesheet (for example, **custom_mainpage.xsl**) in the `custom_footer_template/xsl` folder. Edit it to override the template that produces the footer section:

   ```
   <xsl:template match="*:div[contains(@class, 'footer-container')]" mode="copy_template">
     <!-- Apply the default processing -->
     <xsl:next-match/>

     <!-- Add a div containing the copyright information -->
     <div class="copyright_info">
   ```

```
        <xsl:choose>
            <!-- Adds the start-end years if they are defined -->
            <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst) and
                            exists($toc/*:topicmeta/*:bookrights/*:copyrlast)">
                <span class="copyright_years">
                   &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                         -<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrlast"/>
                </span>
            </xsl:when>

            <!-- Adds only the first year if last is not defined. -->
            <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst)">
                <span class="copyright_years">
                   &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                </span>
            </xsl:when>
        </xsl:choose>


        <xsl:if test="exists($toc/*:topicmeta/*:bookrights/*:bookowner/*:organization)">
            <span class="organization">
                <xsl:text> </xsl:text><xsl:value-of
                    select="$toc/*:topicmeta/*:bookrights/*:bookowner/*:organization"/>
                <xsl:text>. All rights reserved.</xsl:text>
            </span>
        </xsl:if>
    </div>
</xsl:template>
```

5. Open the template descriptor file associated with your publishing template and set the XSLT stylesheet created in previous step with the *com.oxygenxml.webhelp.xsl.createMainPage* XSLT extension point.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <xslt>
            <extension
            file="xslt/customMainPage.xsl"
            id="com.oxygenxml.webhelp.xsl.createMainPage"/>
```

6. Open the *DITA Map WebHelp Responsive* transformation scenario.
7. Click the **Choose Custom Publishing Template** link and select your template.
8. Click **OK** to save the changes to the transformation scenario.
9. Run the transformation scenario.

Use Case 2: Add generation time in the output footer

Another possible customization for the main page is to add the generation time in its footer. We will use a transformation parameter to control if this customization is active or not.

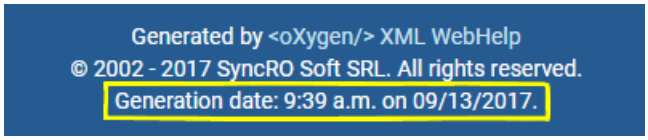


Figure 581: Generation time added in the WebHelp footer

To add this functionality, follow these steps:

1. In the customization stylesheet that you just created (for example, **custom_mainpage.xsl**), modify the template by adding the following XSLT code at the end.

```
<xsl:if test="oxyf:getParameter('webhelp.footer.add.generation.time') = 'yes'">
  <div class="generation_time">
    Generation date: <xsl:value-of
    select="format-dateTime(
                  current-dateTime(),
                  '[h1]:[m01] [P] on [M01]/[D01]/[Y0001].')"/>
  </div>
</xsl:if>
```

Note: You can read the value of a WebHelp transformation parameter from your XSLT extension stylesheets by using the `getParameter(param.name)` function from the `http://www.oxygenxml.com/functions` namespace.

2. Open the template descriptor file associated with your publishing template and set the `webhelp.footer.add.generation.time` parameter to the default value.

```
<publishing-template>
    ...
    <webhelp>
      ...
      <parameters>
        <parameter
          name="webhelp.footer.add.generation.time"
          value="yes"/>
```

3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. In the **Parameters** tab, you can change the value of the `webhelp.footer.add.generation.time` parameter.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

How to Use XSLT Extension Points from a DITA-OT Plugin

In this example, the main page footer is modified by adding copyright information extracted from the DITA bookmap or by adding the output generation time. The first use-case uses an XSLT-Import extension point while the second uses an XSLT-Parameter extension point.

Note: This customization is available as a GitHub project at: https://github.com/oxygenxml/com.oxygenxml.webhelp.responsive.custom.footer.

Use Case 1: WebHelp XSLT-Import extension point to add copyright information extracted from a DITA Bookmap

Suppose you want to customize the WebHelp Responsive main page by adding information about the legal rights associated with the book in the footer (for example, copyright dates and owner). This information is specified in the bookmap:

```
<bookrights>
  <copyrfirst>
    <year>2002</year>
  </copyrfirst>
  <copyrlast>
    <year>2017</year>
  </copyrlast>
  <bookowner>
    <organization>SyncRO Soft SRL</organization>
  </bookowner>
</bookrights>
```

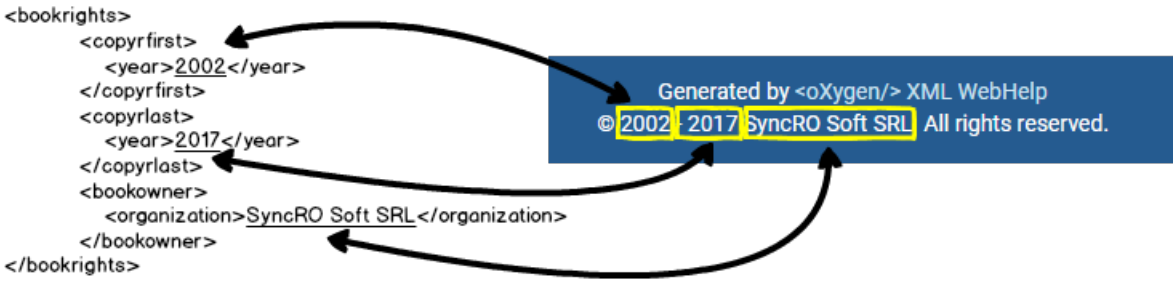


Figure 582: Example: Copyright information added in the WebHelp footer

The XSLT stylesheet that generates the main page is located in: *DITA-OT-DIR*`\plugins\com.oxygenxml.webhelp.responsive\xsl\mainFiles\createMainPage.xsl`. This XSLT stylesheet declares the `copy_template` mode that processes the main page template to expand its components. The main page template declares a component for the footer section that looks like this:

```
<div class=" footer-container text-center ">
  <whc:include_html href="${webhelp.fragment.footer}"/>
</div>
```

In the following example, the extension stylesheet will add a template that matches this component. It applies the default processing and adds the copyright information at the end.

```
<xsl:template match="*:div[contains(@class, 'footer-container')]" mode="copy_template">
  <!-- Apply the default processing -->
  <xsl:next-match/>

  <!-- Add a div containing the copyright information -->
  <div class="copyright_info">
      <xsl:choose>
          <!-- Adds the start-end years if they are defined -->
          <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst) and
                          exists($toc/*:topicmeta/*:bookrights/*:copyrlast)">
              <span class="copyright_years">
                 &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                       -<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrlast"/>
              </span>
          </xsl:when>

          <!-- Adds only the first year if last is not defined. -->
          <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst)">
              <span class="copyright_years">
                 &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
              </span>
          </xsl:when>
      </xsl:choose>


      <xsl:if test="exists($toc/*:topicmeta/*:bookrights/*:bookowner/*:organization)">
          <span class="organization">
              <xsl:text> </xsl:text><xsl:value-of
                  select="$toc/*:topicmeta/*:bookrights/*:bookowner/*:organization"/>
              <xsl:text>. All rights reserved.</xsl:text>
          </span>
      </xsl:if>
  </div>
</xsl:template>
```

You can implement this functionality with a WebHelp extension plugin that uses the **com.oxygenxml.webhelp.xsl.createMainPage** extension point. This extension point allows you to specify a customization stylesheet that will override the template described above.

To add this functionality as a DITA-OT plugin, follow these steps:

1. In the *DITA-OT-DIR*`\plugins\` folder, create a folder for this plugin (for example, `com.oxygenxml.webhelp.responsive.custom.footer`).
2. Create a **plugin.xml** file (in the folder you created in step 1) that specifies the extension point and your customization stylesheet. For example:

   ```
   <plugin id="com.oxygenxml.webhelp.responsive.custom.footer">
     <feature extension="com.oxygenxml.webhelp.xsl.createMainPage"
              file="custom_mainpage.xsl"/>
   </plugin>
   ```

3. Create your customization stylesheet (for example, **custom_mainpage.xsl**), and edit it to override the template that produces the footer section:

   ```
   <xsl:template match="*:div[contains(@class, 'footer-container')]" mode="copy_template">
     <!-- Apply the default processing -->
     <xsl:next-match/>

     <!-- Add a div containing the copyright information -->
     <div class="copyright_info">
         <xsl:choose>
             <!-- Adds the start-end years if they are defined -->
             <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst) and
                             exists($toc/*:topicmeta/*:bookrights/*:copyrlast)">
                 <span class="copyright_years">
                    &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                          -<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrlast"/>
                 </span>
             </xsl:when>

             <!-- Adds only the first year if last is not defined. -->
             <xsl:when test="exists($toc/*:topicmeta/*:bookrights/*:copyrfirst)">
                 <span class="copyright_years">
                    &#xa9;<xsl:value-of select="$toc/*:topicmeta/*:bookrights/*:copyrfirst"/>
                 </span>
             </xsl:when>
         </xsl:choose>


         <xsl:if test="exists($toc/*:topicmeta/*:bookrights/*:bookowner/*:organization)">
             <span class="organization">
                 <xsl:text> </xsl:text><xsl:value-of
                     select="$toc/*:topicmeta/*:bookrights/*:bookowner/*:organization"/>
   ```

```
            <xsl:text>. All rights reserved.</xsl:text>
        </span>
    </xsl:if>
  </div>
</xsl:template>
```

4. Use the **Run DITA-OT Integrator** transformation scenario found in the **DITA Map** section in the **Configure Transformation Scenario(s)** dialog box.
5. Run a **DITA Map WebHelp Responsive** transformation scenario to obtain the customized side TOC.

Use-Case 2: WebHelp XSLT-Parameter extension point to control if generation time is displayed in the output

Another possible customization for the main page is to add the generation time in its footer. You can use an XSLT-Parameter extension point to control if this customization is active or not. In this case, you can use the **com.oxygenxml.webhelp.xsl.createMainPage.param** extension point.

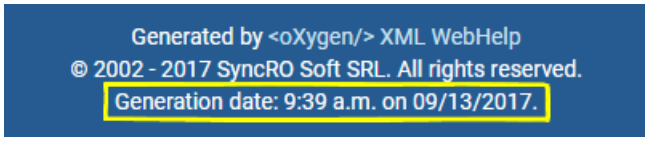


Figure 583: Generation time added in the WebHelp footer

To add this functionality, follow these steps:

1. Create a DITA-OT plugin structure by following the first 3 steps in the procedure above.
2. In the customization stylesheet that you just created (for example, **custom_mainpage.xsl**), declare `webhelp.footer.add.generation.time` as a global parameter and modify the template by adding the following XSLT code at the end.

```
<xsl:if test="$webhelp.footer.add.generation.time = 'yes'">
    <div class="generation_time">
        Generation date: <xsl:value-of select="format-dateTime(
            current-dateTime(), '[h1]:[m01] [P] on [M01]/[D01]/[Y0001].')"/>
    </div>
</xsl:if>
```

3. Edit the **plugin.xml** file to specify the **com.oxygenxml.webhelp.xsl.createMainPage.param** extension point and a custom parameter file by adding the following line:

```
<feature extension="com.oxygenxml.webhelp.xsl.createMainPage.param" file="params.xml"/>
```

4. Create a custom parameter file (for example, **params.xml**). It should look like this:

```
<dummy>
    <param name="webhelp.footer.add.generation.time"
        expression="${webhelp.footer.add.generation.time}"
        if="webhelp.footer.add.generation.time"/>
</dummy>
```

5. Use the **Run DITA-OT Integrator** transformation scenario found in the **DITA Map** section in the **Configure Transformation Scenario(s)** dialog box.
6. Edit a **DITA Map WebHelp Responsive** transformation scenario and in the **Parameters** tab, specify the desired value (*yes* or *no*) for your custom parameter (`webhelp.footer.add.generation.time`).
7. Run the transformation scenario.

Related Information:

[DITA-OT] XSLT-Import Extension Points

[DITA-OT] XSLT-Parameter Extension Points

Miscellaneous Customization Topics

This section contains miscellaneous topics about how to customize the WebHelp Responsive output.

How to Add an Edit Link to Launch Oxygen XML Web Author

You can embed *Edit* links in the DITA WebHelp Responsive output that will automatically launch a particular document in Oxygen XML Web Author. A reviewer can then simply click the link and they will be redirected to the Oxygen XML Web Author editing page with that particular file open and editable.

Using a Publishing Template

To embed an *Edit* link in the DITA Map WebHelp Responsive output using an *Oxygen Publishing Template*, follow this procedure:

1. If you haven't already created a Publishing Template, see Working with Publishing Templates on page 1083.
2. Open the template descriptor file associated with your publishing template and add the following parameters with their values set to the URLs:
   - **editlink.remote.ditamap.url** - The URL of the DITA Map suitable for opening in Oxygen XML Web Author.
   - **editlink.web.author.url** - The URL of the Oxygen XML Web Author installation.

   ```
   <publishing-template>
       ...
       <webhelp>
           ...
           <parameters>
               <parameter name="editlink.remote.ditamap.url"
                          value="webdav-https://dav.box.com/dav/my.ditamap"/>
               <parameter name="editlink.web.author.url"
                          value="https://www.oxygenxml.com/webauthor.html"/>
           </parameters>
       </webhelp>
   ```
3. Open the *DITA Map WebHelp Responsive* transformation scenario.
4. Click the **Choose Custom Publishing Template** link and select your template.
5. Click **OK** to save the changes to the transformation scenario.
6. Run the transformation scenario.

   Result: In the WebHelp output, all topics will have an **Edit** link to the right side of the title and clicking the link will launch that particular document in Oxygen XML Web Author.

For example:

- **Windows:**

  ```
  dita.bat -i c:\mySample.ditamap -f webhelp-responsive -
  Deditlink.remote.ditamap.url=webdav-https://dav.box.com/dav/my.ditamap -
  Deditlink.web.author.url=https://www.oxygenxml.com/webauthor.html
  ```
- **Mac OS X/ Linux:**

  ```
  dita -i C:/mySample.ditamap -f webhelp-responsive -
  Deditlink.remote.ditamap.url=webdav-https://dav.box.com/dav/my.ditamap -
  Deditlink.web.author.url=https://www.oxygenxml.com/webauthor.html
  ```

Using a Transformation Scenario in Oxygen XML Editor/Author

To embed an *Edit* link in the DITA Map WebHelp Responsive output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Edit a **DITA Map WebHelp Responsive** transformation scenario and open the **Parameters** tab.
2. Set values for the following parameters:
   - **editlink.remote.ditamap.url** - The URL of the DITA Map suitable for opening in Oxygen XML Web Author.
   - **editlink.web.author.url** - The URL of the Oxygen XML Web Author installation.
3. Run the transformation scenario.

   Result: In the WebHelp output, all topics will have an **Edit** link to the right side of the title and clicking the link will launch that particular document in Oxygen XML Web Author.

For more information, see https://www.oxygenxml.com/doc/ug-waCustom/topics/webauthor-integrate-embedded-launch.html.

Related Information:

Web Author Customization Guide: Embedding an Edit Link that will Launch Web Author

How to Flag DITA Content in WebHelp Output

Flagging content in WebHelp output involves defining a set of images that will be used for marking content across your information set.

To flag DITA content, you need to create a filter file that defines properties that will be applied on elements to be flagged. Generally, flagging is supported for *block elements* (such as paragraphs), but not for phrase-level elements within a paragraph. This ensures that the images that will flag the content are easily scanned by the reader, instead of being buried in text.

Using a Publishing Template

To flag content in the DITA Map to WebHelp output using an *Oxygen Publishing Template*, follow this procedure:

1. Create a DITA filter file in the directory where you want to add the file. Give the file a descriptive name, such as `audience-flag-build.ditaval`.
2. Define the property of the element you want to be flagged. For example, if you want to flag elements that have the `audience` attribute set to `programmer`, the content of the DITAVAL file should look like the following example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <val>
     <prop att="audience" val="programmer" action="flag"
    img="D:\resource\delta.gif" alt="sample alt text"/>
   </val>
   ```

   Note that for an element to be flagged, at least one attribute-value pair needs to have a property declared in the DITAVAL file.
3. Open the template descriptor file associated with your publishing template and add the `args.filter` parameter in the *parameters* section with its value set to the path of the DITAVAL file.

   ```
   <publishing-template>
       ...
       <webhelp>
           ...
           <parameters>
               <parameter name="args.filter" value="resources/myFile.ditaval"/>
           </parameters>
       </webhelp>
   ```
4. Open the *DITA Map WebHelp Responsive* transformation scenario.
5. Click the **Choose Custom Publishing Template** link and select your template.
6. Click **OK** to save the changes to the transformation scenario.
7. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To flag content in the DITA Map to WebHelp output using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Create a DITA filter file in the directory where you want to add the file. Give the file a descriptive name, such as `audience-flag-build.ditaval`.
2. Define the property of the element you want to be flagged. For example, if you want to flag elements that have the `audience` attribute set to `programmer`, the content of the DITAVAL file should look like the following example:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <val>
     <prop att="audience" val="programmer" action="flag"
    img="D:\resource\delta.gif" alt="sample alt text"/>
   </val>
   ```

   Note that for an element to be flagged, at least one attribute-value pair needs to have a property declared in the DITAVAL file.
3. Edit a **DITA Map to WebHelp** transformation scenario.
4. Specify the DITAVAL file in the **Filters** tab of the transformation scenario.
5. Run the transformation scenario.

Related Information:
Filtering Profiling Values with a DITAVAL File on page 1605

How to Deploy the Output on a SharePoint Site

Since WebHelp output must be published locally, on the same machine where the WebHelp process is running, to publish your files directly to a SharePoint library you need to map a network drive to connect to SharePoint and change your file extensions to `.aspx`, as described in the steps below.

Using a Script Outside of Oxygen XML Editor/Author

To publish WebHelp Responsive output on a SharePoint site using an *Oxygen Publishing Template*, follow this procedure:

1. Map a network drive to connect to your SharePoint library. For more information, see: https://support.microsoft.com/en-us/kb/2616712.
2. To allow browsers to open your published files (rather than downloading them), you need to change the file extensions from `.html` to `.aspx`.
3. Open the template descriptor file associated with your publishing template and add the `args.outext` parameter in the *parameters* section with its value set to `.aspx`.

```
<publishing-template>
    ...
    <webhelp>
        ...
        <parameters>
            <parameter name="args.outext" value=".aspx"/>
        </parameters>
    </webhelp>
```

4. Open the *DITA Map WebHelp Responsive* transformation scenario.
5. Click the **Choose Custom Publishing Template** link and select your template.
6. Click **OK** to save the changes to the transformation scenario.
7. Run the transformation scenario.

Using a Transformation Scenario in Oxygen XML Editor/Author

To publish WebHelp Responsive output on a SharePoint site using a transformation scenario from within **Oxygen XML Editor/Author**, follow this procedure:

1. Map a network drive to connect to your SharePoint library. For more information, see: https://support.microsoft.com/en-us/kb/2616712.
2. To allow browsers to open your published files (rather than downloading them), you need to change the file extensions from `.html` to `.aspx`. Fortunately, this can be done in the transformation.
   a. Edit the WebHelp transformation scenario and open the **Parameters** tab.
   b. Set the `args.outext` parameter to `.aspx`.
   c. Run the transformation scenario.

PDF Output

Oxygen XML Editor plugin provides support for generating PDF output using several different types of processors and there are numerous ways to customize the published output.

PDF Output Customization

Oxygen XML Editor plugin allows you to obtain PDF output using transformation scenarios for certain types of documents (for example, DITA, DocBook, TEI, and JATS). This section contains information about ways you can customize the PDF output to better fit your specific needs.

DITA Map to PDF Output Customization

Oxygen XML Editor plugin comes bundled with the DITA Open Toolkit that provides a mechanism for converting *DITA maps* to PDF output. There are numerous ways that you can customize the PDF output and the topics in this section discuss some of those possibilities.

Creating a DITA Map to PDF Transformation Scenario

To create a *DITA Map to PDF* transformation scenario, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF** and click the **Edit** button (or use the **Duplicate** button if your *framework* is read-only).
3. Use the various tabs to configure the transformation scenario. In the **Parameters** tab, you can use a variety of parameters to customize the output. For example, the following parameters are just a few of the most commonly used ones:
   - `show.changes.and.comments` - If set to `yes`, user comments, replies to comments, and *tracked changes* are published in the PDF output.
   - `customization.dir` - Specifies the path to a customization directory.
   - `editlink.remote.ditamap.url` - When this parameter is set to "true", the DITA topic path is displayed to the right of each topic title in the PDF output.
4. Click **OK** and then the **Apply Associated** button to run the transformation scenario.

Customizing the PDF Output

DITA Open Toolkit PDF output can be customized in several ways:

- Creating a DITA Open Toolkit plugin that adds extensions to the PDF output. More details can be found in the DITA Open Toolkit Documentation.
- Creating a customization directory and using it from the PDF transformation scenario. A small example of this procedure can be found below.

How to Create a Customization Directory for PDF Output

The following procedure explains how to do a basic customization of the PDF output by setting up a customization directory. An example of a common use case is embedding a company logo image in the front matter of the book.

1. Copy the entire directory: *`DITA-OT-DIR`*`\plugins\org.dita.pdf2\Customization` to another location (for instance, `C:\Customization`).
2. Copy your logo image to: `C:\Customization\common\artwork\logo.png`.
3. Rename `C:\Customization\catalog.xml.orig` to: `C:\Customization\catalog.xml`.
4. Open the `catalog.xml` in Oxygen XML Editor plugin and *uncomment* this line:

   ```
   <!--uri name="cfg:fo/xsl/custom.xsl" uri="fo/xsl/custom.xsl"/-->
   ```

   It now looks like this:

   ```
   <uri name="cfg:fo/xsl/custom.xsl" uri="fo/xsl/custom.xsl"/>
   ```
5. Rename the file: `C:\Customization\fo\xsl\custom.xsl.orig` to: `C:\Customization\fo\xsl\custom.xsl`
6. Open the `custom.xsl` file in Oxygen XML Editor plugin and create the template called **createFrontCoverContents** for DITA-OT 2.5.4.

   Tip: You can copy the same template from *`DITA-OT-DIR`*`\plugins\org.dita.pdf2\xsl\fo\front-matter.xsl` and modify it in whatever way necessary to achieve your specific goal. This new template in the `custom.xsl` file will override the same template from *`DITA-OT-DIR`*`\plugins\org.dita.pdf2\xsl\fo\front-matter.xsl`.

   Example:

For example, if you are using DITA OT 2.5.4, the `custom.xsl` could look like this:

```
<?xml version='1.0'?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:fo="http://www.w3.org/1999/XSL/Format"
    version="2.0">

<xsl:template name="createFrontCoverContents">
 <!-- set the title -->
 <fo:block xsl:use-attribute-sets="__frontmatter__title">
  <xsl:choose>
   <xsl:when test="$map/*[contains(@class,' topic/title ')][1]">
    <xsl:apply-templates select="$map/*[contains(@class,' topic/title ')][1]"/>
      </xsl:when>
      <xsl:when test="$map//*[contains(@class,' bookmap/mainbooktitle ')][1]">
        <xsl:apply-templates select="$map//*[contains
                                      (@class,' bookmap/mainbooktitle ')][1]"/>
      </xsl:when>
      <xsl:when test="//*[contains(@class, ' map/map ')]/@title">
        <xsl:value-of select="//*[contains(@class, ' map/map ')]/@title"/>
      </xsl:when>
      <xsl:otherwise>
        <xsl:value-of select="/descendant::*[contains
           (@class, ' topic/topic ')][1]/*[contains(@class, ' topic/title ')]"/>
   </xsl:otherwise>
  </xsl:choose>
 </fo:block>

 <!-- set the subtitle -->
 <xsl:apply-templates select="$map//*[contains
                                      (@class,' bookmap/booktitlealt ')]"/>
 <fo:block xsl:use-attribute-sets="__frontmatter__owner">
  <xsl:apply-templates select="$map//*[contains(@class,' bookmap/bookmeta ')]"/>
 </fo:block>

 <!-- Load the image logo -->
  <fo:block text-align="center" width="100%">
   <fo:external-graphic
      src="url({concat($artworkPrefix,
                       '/Customization/OpenTopic/common/artwork/logo.png')})"
    />
  </fo:block>
 </xsl:template>

</xsl:stylesheet>
```

7. Edit the **DITA Map PDF** transformation scenario and in the **Parameters** tab, set the **customization.dir** parameter to `C:\Customization`.

Tip: For other specific examples, see DITA-OT 2.x Documentation - PDF Customization Plugin.

Related Information:

Automatic PDF plugin customization generator by Jarno Elovirta.

DITA-OT 2.x Documentation - PDF Customization Plugin

Customizing the Header and Footer in PDF Output

The XSLT stylesheet *DITA-OT-DIR*`/plugins/org.dita.pdf2/xsl/fo/static-content.xsl` contains templates that output the static header and footers for various parts of the PDF such as the prolog, table of contents, front matter, or body.

The templates for generating a footer for pages in the body are called `insertBodyOddFooter` or `insertBodyEvenFooter`.

These templates get the static content from resource files that depend on the language used for generating the PDF. The default resource file is *DITA-OT-DIR*`/plugins/org.dita.pdf2/cfg/common/vars/en.xml`. These resource files contain variables (such as *Body odd footer*) that can be set to specific user values.

Instead of modifying these resource files directly, they can be overwritten with modified versions of the resources in a PDF customization directory as explained in Customizing the PDF Output on page 1117.

Adding a Watermark to PDF Output

To add a watermark to the PDF output of a *DITA map* transformation, create a DITA-OT customization directory and use it from a **DITA Map to PDF** transformation scenario, as in the following procedure:

1. Copy the entire directory: *DITA-OT-DIR*`\plugins\org.dita.pdf2\Customization` to another location (for instance, `C:\Customization`).

2. Copy your watermark image (for example, `watermark.png`) to: `C:\Customization\common\artwork\watermark.png`.
3. Rename the `C:\Customization\catalog.xml.orig` file to: `C:\Customization\catalog.xml`.
4. Open the `catalog.xml` in Oxygen XML Editor plugin and *uncomment* this line:

   ```
   <!--uri name="cfg:fo/xsl/custom.xsl" uri="fo/xsl/custom.xsl"/-->
   ```

   The uncommented line should look like this:

   ```
   <uri name="cfg:fo/xsl/custom.xsl" uri="fo/xsl/custom.xsl"/>
   ```

5. Rename the file: `C:\Customization\fo\xsl\custom.xsl.orig` to: `C:\Customization\fo\xsl\custom.xsl`
6. Open the `C:\Customization\fo\xsl\custom.xsl` file in Oxygen XML Editor plugin to overwrite two XSLT templates:

   - The first template is located in the XSLT stylesheet *DITA-OT-DIR*`\plugins\org.dita.pdf2\xsl\fo\static-content.xsl` and we override it specifying a watermark image for every page in the PDF content, using a *block-container* element that references the watermark image file:

     ```
     <fo:static-content flow-name="odd-body-header">
           <fo:block-container absolute-position="absolute"
              top="-2cm" left="-3cm" width="21cm" height="29.7cm"
              background-image="{concat($artworkPrefix,
     '/Customization/OpenTopic/common/artwork/watermark.png')}">
             <fo:block/>
           </fo:block-container>
          <fo:block xsl:use-attribute-sets="__body__odd__header">
              <xsl:call-template name="insertVariable">
                  <xsl:with-param name="theVariableID" select="'Body odd header'"/>
                  <xsl:with-param name="theParameters">
                     <prodname>
                         <xsl:value-of select="$productName"/>
                     </prodname>
                     <heading>
                   <fo:inline xsl:use-attribute-sets="__body__odd__header__heading">
                         <fo:retrieve-marker retrieve-class-name="current-header"/>
                   </fo:inline>
                    </heading>
                   <pagenum>
                  <fo:inline xsl:use-attribute-sets="__body__odd__header__pagenum">
                        <fo:page-number/>
                  </fo:inline>
                </pagenum>
             </xsl:with-param>
          </xsl:call-template>
       </fo:block>
     </fo:static-content>

     </xsl:template>
     ```

   - The second template that we override is located in the XSLT stylesheet *DITA-OT-DIR*`\plugins\org.dita.pdf2\xsl\fo\commons.xsl` and is used for styling the first page of the output. We also override it by copying the original template content in our `custom.xsl` and adding the `block-container` element that references the watermark image file:

     ```
     <xsl:template name="createFrontMatter_1.0">
           <fo:page-sequence master-reference="front-matter"
     xsl:use-attribute-sets="__force__page__count">
              <xsl:call-template name="insertFrontMatterStaticContents"/>
              <fo:flow flow-name="xsl-region-body">
                  <fo:block-container absolute-position="absolute"
                      top="-2cm" left="-3cm" width="21cm" height="29.7cm"
                      background-image="{concat($artworkPrefix,
     '/Customization/OpenTopic/common/artwork/watermark.png')}">
                      <fo:block/>
                  </fo:block-container>
       <fo:block xsl:use-attribute-sets="__frontmatter">
            <!-- set the title -->
         <fo:block xsl:use-attribute-sets="__frontmatter__title">
          <xsl:choose>
           <xsl:when test="$map/*[contains(@class,' topic/title ')][1]">
         <xsl:apply-templates select="$map/*[contains(@class,' topic/title ')][1]"/>
           </xsl:when>
           <xsl:when test="$map//*[contains(@class,' bookmap/mainbooktitle ')][1]">
         <xsl:apply-templates select="$map//*[contains
     (@class,' bookmap/mainbooktitle ')][1]"/>
              </xsl:when>
              <xsl:when test="//*[contains(@class, ' map/map ')]/@title">
                  <xsl:value-of select="//*[contains(@class, ' map/map ')]/@title"/>
              </xsl:when>
                <xsl:otherwise>
     ```

```
            <xsl:value-of select="/descendant::*[contains
(@class, ' topic/topic ')][1]/*[contains(@class, ' topic/title ')]"/>
          </xsl:otherwise>
      </xsl:choose>
    </fo:block>

   <!-- set the subtitle -->
   <xsl:apply-templates select="$map//*[contains
(@class,' bookmap/booktitlealt ')]"/>

      <fo:block xsl:use-attribute-sets="__frontmatter__owner">
         <xsl:apply-templates select="$map//*[contains
(@class,' bookmap/bookmeta ')]"/>
      </fo:block>

      </fo:block>

   <!--<xsl:call-template name="createPreface"/>-->

      </fo:flow>
        </fo:page-sequence>
        <xsl:if test="not($retain-bookmap-order)">
            <xsl:call-template name="createNotices"/>
        </xsl:if>
    </xsl:template>
```

7. Edit your **DITA Map PDF** transformation scenario. In the **Parameters** tab, set the **customization.dir** parameter to `C:\Customization`.

Related Information:

Adding a Watermark in DITA Map to XHTML Output on page 1591

Adding an Edit Link in PDF Output to Launch Oxygen XML Web Author

You can embed *Edit* links in the DITA Map PDF output that will automatically launch a particular document in Oxygen XML Web Author. A reviewer can then simply click the link and they will be redirected to the Oxygen XML Web Author editing page with that particular file open and editable.

To embed an *Edit* link in the DITA Map PDF output, follow these steps:

1. Edit a **DITA Map PDF** transformation scenario and open the **Parameters** tab.
2. Set values for the following parameters:
   - **editlink.remote.ditamap.url** - The URL of the DITA Map suitable for opening in Oxygen XML Web Author.
   - **editlink.web.author.url** - The URL of the Oxygen XML Web Author installation.
3. Run the transformation scenario.

Result: In the PDF output, all topics will have an **Edit** link to the right side of the title and clicking the link will launch that particular document in Oxygen XML Web Author.

Force Page Breaks Between Two Block Elements in PDF Output

Suppose that in your DITA content you have two *block elements*, such as two paragraphs:

```
<p>First para</p>
<p>Second para</p>
```

and you want to force a page break between them in the PDF output.

Here is how you can implement a DITA Open Toolkit *plugin* that would achieve this:

1. Define your custom processing instruction that marks the place where a page break should be inserted in the PDF, for example:

   ```
   <p>First para</p>
     <?pagebreak?>
   <p>Second para</p>
   ```

2. Locate the **DITA Open Toolkit** distribution and in the `plugins` directory create a new *plugin* folder (for example, *`DITA-OT-DIR`*`/plugins/pdf-page-break`).
3. In this new folder, create a new `plugin.xml` file with the following content:

   ```
   <plugin id="com.yourpackage.pagebreak">
     <feature extension="package.support.name" value="Force Page Break Plugin"/>
     <feature extension="package.support.email" value="support@youremail.com"/>
     <feature extension="package.version" value="1.0.0"/>
     <feature extension="dita.xsl.xslfo" value="pageBreak.xsl" type="file"/>
   ```

```
</plugin>
```

The most important feature in the *plugin* is that it will add a new XSLT stylesheet to the XSL processing that produces the PDF content.

4. In the same folder, create an XSLT stylesheet named `pageBreak.xsl` with the following content:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
                xmlns:fo="http://www.w3.org/1999/XSL/Format" version="1.0">
  <xsl:template match="processing-instruction('pagebreak')">
    <fo:block break-after="page"/>
  </xsl:template>
</xsl:stylesheet>
```

5. Install your *plugin* in the DITA Open Toolkit.

The source code for the plugin can be found on GitHub here: https://github.com/dita-community/org.dita-community.pdf-page-break.

Customizing `note` Images in PDF

To customize the images that appear next to each type of note in the PDF output, use a PDF customization folder with the following procedure:

1. Copy the *DITA-OT-DIR*`/plugins/org.dita.pdf2/cfg/common/vars/en.xml` file to the `[CUSTOMIZATION_DIR]\common\vars` folder.
2. Edit the copied `en.xml` file and modify, for example, the path to the image for `<note>` element with the `type` attribute set to `notice` from:

```
<variable id="notice Note Image
  Path">Configuration/OpenTopic/cfg/common/artwork/important.png</variable>
```

to:

```
<variable id="notice Note Image
  Path">Customization/OpenTopic/common/artwork/notice.gif</variable>
```

3. Add your custom **notice** image to `[CUSTOMIZATION_DIR]\common\artwork\notice.gif`.
4. Edit the **DITA Map PDF** transformation scenario and in the **Parameters** tab set the path for the **customization.dir** property to point to the customization folder. Also, set the **com.oxygenxml.use.custom.note.images** parameter to **no**.

Show Comments and Tracked Changes in PDF Output

To include comments and *tracked changes* (stored within your DITA topics) in the PDF output, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF** and click the **Edit** button (or use the **Duplicate** button if your *framework* is read-only).
3. In the **Parameters** tab, set the value of the **show.changes.and.comments** parameter to `yes`.
4. Optionally, you can configure any of these other parameters to adjust the colors of the comments and tracked changes:
   - **ct.insert.color** - Specifies the color for insertion type tracked changes, as a plain color (i.e. red, yellow, blue), or with a hexadecimal equivalent (i.e. #FFFFFF). The default value is 'blue'.
   - **ct.delete.color** - Specifies the color for deletion type tracked changes, as a plain color (i.e. red, yellow, blue), or with a hexadecimal equivalent (i.e. #FFFFFF). The default value is 'red'.
   - **ct.comment.bg.color** - Specifies the background color for comment type tracked changes, as a plain color (i.e. red, yellow, blue), or with a hexadecimal equivalent (i.e. #FFFFFF). The default value is 'yellow'.
5. Click **OK** and then the **Apply Associated** button to run the transformation scenario.

   Result: Comment threads and tracked changes will now appear in the PDF output. Details about each comment or change will be available in the footer section for each page.

Set a Font for PDF Output Generated with FO Processor

When a *DITA map* is transformed to PDF using an FO processor and it contains some Unicode characters that cannot be rendered by the default PDF fonts, a font that is capable of rendering these characters must be configured and embedded in the PDF result.

The settings that must be modified for configuring a font for the built-in FO processor are detailed in Add a Font to the Built-in FO Processor - Advanced Version on page 1124.

DITA OT PDF Font Mapping

The DITA OT contains a file *DITA-OT-DIR*`/plugins/org.dita.pdf2/cfg/fo/font-mappings.xml` that maps logical fonts used in the XSLT stylesheets to physical fonts that will be used by the FO processor to generate the PDF output.

The XSLT stylesheets used to generate the XSL-FO output contain code like this:

```
<xsl:attribute name="font-family">monospace</xsl:attribute>
```

The font-family is defined to be *monospace*, but *monospace* is just an alias. It is not a physical font name. Therefore, another stage in the PDF generation takes this *monospace* alias and looks in the `font-mappings.xml`.

If it finds a mapping like this:

```
<aliases>
      <alias name="monospace">Monospaced</alias>
 </aliases>
```

then it looks to see if the *Monospaced* has a *logical-font* definition and if so, it will use the *physical-font* specified there:

```
<logical-font name="Monospaced">
      <physical-font char-set="default">
        <font-face>Courier New, Courier</font-face>
      </physical-font>
.............
</logical-font>
```

Important:

If no alias mapping is found for a font-family specified in the XSLT stylesheets, the processing defaults to **Helvetica**.

Related Information:

DocBook to PDF Output Customization

When the default layout and output of the DocBook to PDF transformation needs to be customized, follow these steps:

1. Create a custom version of the DocBook title spec file.

   You should start from a copy of the file `[DocBook XSL directory]/fo/titlepage.templates.xml` and customize it. The instructions for the spec file can be found here.

   An example of spec file:

   ```
   <t:titlepage-content t:side="recto">
       <mediaobject/>
       <title
           t:named-template="book.verso.title"
           font-size="&hsize2;"
           font-weight="bold"
           font-family="{$title.font.family}"/>
       <corpauthor/>
         ...
   </t:titlepage-content>
   ```

2. Generate a new XSLT stylesheet from the title spec file from the previous step.

   Apply `[DocBook XSL directory]/template/titlepage.xsl` to the title spec file. The result is an XSLT stylesheet (for example, `mytitlepages.xsl`).

3. Import `mytitlepages.xsl` in a DocBook customization layer.

The customization layer is the stylesheet that will be applied to the XML document. The `mytitlepages.xsl` should be imported with an element like this:

```
<xsl:import href="dir-name/mytitlepages.xsl"/>
```

4. Insert a logo image in the XML document.

   The path to the logo image must be inserted in the `book/info/mediaobject` element of the XML document.
5. Apply the customization layer to the XML document.

   A quick way is to duplicate the transformation scenario **DocBook PDF** that is included with Oxygen XML Editor plugin and set the customization layer in the **XSL URL** property of the scenario.

Related Information:

The book **DocBook XSL: The Complete Guide** by Bob Stayton contains more details about customizing the PDF output.

Video demonstration for creating a DocBook customization layer in Oxygen XML Editor plugin.

Show Comments and Tracked Changes in DocBook 5 PDF Output

To include comments and *tracked changes* (stored within your DocBook 5 documents) in the PDF output, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button.
2. Select **DocBook PDF (Show Change Tracking and Comments)** in the **DocBook 5** section.
3. If you need to configure the transformation, click the **Edit** or **Duplicate** button, make your changes to the scenario, and click **OK**.
4. Click the **Apply Associated** button to run the transformation scenario.

   Result: Comment threads and tracked changes will now appear in the PDF output. Details about each comment or change will be available in the footer section for each page.

Generating PDF Output Using an XSL-FO Processor

This section explains how to apply XSL-FO processors when transforming XML documents to PDF format in Oxygen XML Editor plugin.

Built-in XSL-FO Processor

The Oxygen XML Editor plugin installation package is distributed with the Apache FOP that is a Formatting Objects processor for rendering your XML documents to PDF. *FOP* is a print and output independent formatter driven by XSL Formatting Objects. *FOP* is implemented as a Java application that reads a formatting object tree and renders the resulting pages to a specified output.

To see the version of the built-in XSL-FO processor for your installation, go to **Help** > **About** > **Libraries** and search for *Apache FOP*.

Other FO processors can be configured in the **Preferences** dialog box.

Add a Font to the Built-in FO Processor - Simple Version

If the font that must be set to Apache FOP is one of the fonts that are installed in the operating system you should follow the next steps for creating and setting a FOP configuration file that looks for the font that it needs in the system fonts. It is a simplified version of the procedure for setting a custom font in Apache FOP.

1. Register the font in FOP configuration. (This is not necessary for DITA PDF transformations, skip to the next step)
   a) Create a FOP configuration file that specifies that FOP should look for fonts in the installed fonts of the operating system.

```
<fop version="1.0">
  <renderers>
    <renderer mime="application/pdf">
      <fonts>
        <auto-detect/>
      </fonts>
```

```
    </renderer>
  </renderers>
</fop>
```

b) Open the **Preferences** dialog box , go to **XML** > **XSLT/FO/XQuery** > **FO Processors**, and enter the path of the FOP configuration file in the **Configuration file** text field.

2. Set the font on the document content.

   This is done usually with XSLT stylesheet parameters and depends on the document type processed by the stylesheet.

   - For DocBook documents you can start with the predefined scenario called **DocBook PDF**, edit the XSLT parameters and set the font name (in our example the font family name is **Arial Unicode MS**) to the parameters `body.font.family` and `title.font.family`.
   - For TEI documents you can start with the predefined scenario called **TEI PDF**, edit the XSLT parameters and set the font name (in our example **Arial Unicode MS**) to the parameters `bodyFont` and `sansFont`.
   - For DITA transformations to PDF using DITA-OT you should modify the following two files:
     - *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/cfg/fo/font-mappings.xml` - The `font-face` element included in each element `physical-font` having the `attribute char-set="default"` must contain the name of the font (**Arial Unicode MS** in our example)
     - *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/fop/conf/fop.xconf` - An element `auto-detect` must be inserted in the element `fonts`, which is inside the element `renderer` that has the attribute `mime="application/pdf"`:

```
<renderer mime="application/pdf">
  . . .
   <fonts>
       <auto-detect/>
   </fonts>
  . . .
</renderer>
```

Add a Font to the Built-in FO Processor - Advanced Version

If an XML document is transformed to PDF using the built-in Apache FOP processor but it contains some Unicode characters that cannot be rendered by the default PDF fonts, then a special font that is capable to render these characters must be configured and embedded in the PDF result.

Important: If this special font is installed in the operating system, there is a simple way of telling FOP to look for it. See the simplified procedure for adding a font to FOP.

1. Locate the font.

   First, find out the name of a font that has the glyphs for the special characters you used. One font that covers most characters, including Japanese, Cyrillic, and Greek, is Arial Unicode MS.

   On Windows the fonts are located into the `C:\Windows\Fonts` directory. On Mac, they are placed in `/Library/Fonts`. To install a new font on your system, is enough to copy it in the `Fonts` directory.

2. Generate a font metrics file from the font file.

   a) Open a terminal.

   b) Change the working directory to the Oxygen XML Editor plugin install directory.

   c) Create the following script file in the Oxygen XML Editor plugin installation directory.

   For OS X and Linux create a file `ttfConvert.sh`:

```
#!/bin/sh

export LIB=lib
export CP=$LIB/fop.jar
export CP=$CP:$LIB/avalon-framework-4.2.0.jar
export CP=$CP:$LIB/xercesImpl.jar
export CP=$CP:$LIB/commons-logging-1.1.3.jar
export CP=$CP:$LIB/commons-io-1.3.1.jar
export CP=$CP:$LIB/xmlgraphics-commons-1.5.jar
export CP=$CP:$LIB/xml-apis.jar
export CMD="java -cp $CP org.apache.fop.fonts.apps.TTFReader"
export FONT_DIR='.'

$CMD $FONT_DIR/Arialuni.ttf Arialuni.xml
```

For Windows create a file `ttfConvert.bat`:

```
@echo off
set LIB=lib
set CP=%LIB%\fop.jar
set CP=%CP%;%LIB%\avalon-framework-4.2.0.jar
set CP=%CP%;%LIB%\xercesImpl.jar
set CP=%CP%;%LIB%\commons-logging-1.1.3.jar
set CP=%CP%;%LIB%\commons-io-1.3.1.jar
set CP=%CP%;%LIB%\xmlgraphics-commons-1.5.jar
set CP=%CP%;%LIB%\xml-apis.jar
set CMD=java -cp "%CP%" org.apache.fop.fonts.apps.TTFReader
set FONT_DIR=C:\Windows\Fonts
%CMD% %FONT_DIR%\Arialuni.ttf Arialuni.xml
```

The paths specified in the file are relative to the Oxygen XML Editor plugin installation directory. If you decide to create it in other directory, change the file paths accordingly.

The `FONT_DIR` can be something different on your system. Check that it points to the correct font directory. If the Java executable is not in the PATH, specify the full path of the executable.

If the font has bold and italic variants, convert them too by adding two more lines to the script file:

- for OS X and Linux:

  ```
  $CMD $FONT_DIR/Arialuni-Bold.ttf Arialuni-Bold.xml
  $CMD $FONT_DIR/Arialuni-Italic.ttf Arialuni-Italic.xml
  ```

- for Windows:

  ```
  %CMD% %FONT_DIR%\Arialuni-Bold.ttf Arialuni-Bold.xml
  %CMD% %FONT_DIR%\Arialuni-Italic.ttf Arialuni-Italic.xml
  ```

d) Run the script.

On Linux and OS X, run the command `sh ttfConvert.sh` from the command line. On Windows, run the command `ttfConvert.bat` from the command line or double-click the file `ttfConvert.bat`.

3. Register the font in FOP configuration. (This is not necessary for DITA PDF transformations, skip to the next step)

a) Create a FOP configuration file that specifies the font metrics file for your font.

```
<fop version="1.0">
  <base>./</base>
  <font-base>file:/C:/path/to/FOP/font/metrics/files/</font-base>
  <source-resolution>72</source-resolution>
  <target-resolution>72</target-resolution>
  <default-page-settings height="11in" width="8.26in"/>
  <renderers>
    <renderer mime="application/pdf">
      <filterList>
        <value>flate</value>
      </filterList>
      <fonts>
          <font metrics-url="Arialuni.xml" kerning="yes"
                embed-url="file:/Library/Fonts/Arialuni.ttf">
              <font-triplet name="Arialuni" style="normal"
                    weight="normal"/>
          </font>
      </fonts>
    </renderer>
  </renderers>
</fop>
```

The `embed-url` attribute points to the font file to be embedded. Specify it using the URL convention. The `metrics-url` attribute points to the font metrics file with a path relative to the `base` element. The triplet refers to the unique combination of name, weight, and style (italic) for each variation of the font. In our case is just one triplet, but if the font had variants, you would have to specify one for each variant. Here is an example for Arial Unicode if it had italic and bold variants:

```
<fop version="1.0">
  ...
    <fonts>
        <font metrics-url="Arialuni.xml" kerning="yes"
              embed-url="file:/Library/Fonts/Arialuni.ttf">
            <font-triplet name="Arialuni" style="normal"
                  weight="normal"/>
        </font>
        <font metrics-url="Arialuni-Bold.xml" kerning="yes"
```

```
            embed-url="file:/Library/Fonts/Arialuni-Bold.ttf">
            <font-triplet name="Arialuni" style="normal"
                weight="bold"/>
        </font>
        <font metrics-url="Arialuni-Italic.xml" kerning="yes"
            embed-url="file:/Library/Fonts/Arialuni-Italic.ttf">
            <font-triplet name="Arialuni" style="italic"
                weight="normal"/>
        </font>
    </fonts>
  ...
</fop>
```

More details about the FOP configuration file are available on the FOP website.

b) Open the **Preferences** dialog box , go to **XML** > **XSLT/FO/XQuery** > **FO Processors**, and enter the path of the FOP configuration file in the **Configuration file** text field.

4. Set the font on the document content.

   This is usually done with XSLT stylesheet parameters and depends on the document type processed by the stylesheet.

   DocBook Example: For DocBook documents, you can start with the predefined scenario called **DocBook PDF**, edit the XSLT parameters, and set the font name (in our example **Arialuni**) to the parameters `body.font.family` and `title.font.family`.

   TEI Example: For TEI documents, you can start with the predefined scenario called **TEI PDF**, edit the XSLT parameters, and set the font name (in our example **Arialuni**) to the parameters `bodyFont` and `sansFont`.

   DITA Example: For DITA to PDF transformations using DITA-OT modify the following two files:

   - *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/cfg/fo/font-mappings.xml` - The `font-face` element included in each element `physical-font` having the `attribute char-set="default"` must contain the name of the font (*Arialuni* in our example)
   - *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/fop/conf/fop.xconf` - An element `font` must be inserted in the element `fonts`, which is inside the element `renderer` that has the attribute `mime="application/pdf"`:

     ```
     <renderer mime="application/pdf">
       . . .
       <fonts>
           <font metrics-url="Arialuni.xml" kerning="yes"
               embed-url="file:/Library/Fonts/Arialuni.ttf">
               <font-triplet name="Arialuni" style="normal"
                   weight="normal"/>
           </font>
       </fonts>
       . . .
     </renderer>
     ```

Adding Libraries to the Built-in FO Processor (XML with XSLT and FO)

Starting with Oxygen XML Editor plugin version 20.0, both hyphenation and PDF image support are enabled by default in the built-in Apache FO processor. For older version of Oxygen XML Editor plugin, use the following procedures to enable such support.

Adding Hyphenation Support for XML with XSLT Transformation Scenarios

If you want to add newer hyphenation libraries or you are using an older version of Oxygen XML Editor plugin, follow this procedure:

1. Create a folder called `fop` in the *`[OXYGEN_INSTALL_DIR]`*`/lib` folder.
2. Download the compiled *JAR* from OFFO.
3. Copy the `fop-hyph.jar` file into the *`[OXYGEN_INSTALL_DIR]`*`/lib/fop` folder.
4. Restart Oxygen XML Editor plugin.

Adding Support for PDF Images

To add support for PDF imagesin an older version of Oxygen XML Editor plugin, follow these steps:

1. Create a folder called `fop` in the *`[OXYGEN_INSTALL_DIR]`*`/lib` folder.
2. Download the *fop-pdf-images JAR* libraries.

3. Copy the libraries into the *[OXYGEN_INSTALL_DIR]*`/lib/fop` folder.
4. Restart Oxygen XML Editor plugin.

Adding Libraries to the Built-in FO Processor (DITA-OT)

Starting with Oxygen XML Editor plugin version 20.0, both hyphenation and PDF image support are enabled by default in the built-in DITA-OT FO processor. For older version of Oxygen XML Editor plugin, use the following procedures to enable such support.

Adding Hyphenation Support for DITA-OT Transformation Scenarios

1. Download the pre-compiled *JAR* from OFFO.
2. Edit the DITA-OT transformation scenario and switch to the **Advanced** tab. Click the **Libraries** button and add the path to the `fop-hyph.jar` library.

Adding Support for PDF Images

1. Download the *fop-pdf-images JAR* libraries.
2. Edit the DITA-OT transformation scenario and switch to the **Advanced** tab. Click the **Libraries** button and add the path to the libraries.

How to Enable Debugging for FO Processor Transformations

If you encounter errors when running PDF transformations that use an FO processor, it is possible to enable debugging/logging to help you identify the problem. To enable debugging/logging for FO processing, follow this procedure:

1. Locate and edit the following configuration file: *[OXYGEN_INSTALL_DIR]*`/tools/config/log4j.xml`.

   Note: You need write access to this folder, so if you do not have administrator permissions, you may first need to copy the file to another location where you have write access.
2. Edit the `priority` element (inside the `root` element) and change its value to **debug**.
3. Save the file in the original location.
4. Restart Oxygen XML Editor plugin and re-run the transformation.

   Tip: It is recommended that you use a small input file when trying to reproduce the problem, to make it easier to analyze the data in the log.
5. Once you are finished with the debugging session, remember to edit the `log4j.xml` file and change the `priority` element back to its original value. Otherwise, performance could be affected.

Generating PDF Output Using a Calabash XProc Processor

To generate PDF output from your XProc pipeline (when using the Calabash XProc processor), follow these steps:

1. Open the *[OXYGEN_INSTALL_DIR]*`/lib/xproc/calabash/engine.xml` file.
2. Uncomment the `<system-property name="com.xmlcalabash.fo-processor" value="com.xmlcalabash.util.FoXEP"/>` system property.
3. Uncomment the `<system-property name="com.renderx.xep.CONFIG" file="../../../tools/xep/xep.xml"/>` system property. Edit the `file` attribute to point to the configuration file that is usually located in the XEP installation folder.
4. Uncomment the references to the XEP libraries. Edit them to point to the matching library names from the XEP installation directory.
5. Restart Oxygen XML Editor plugin.

Debugging PDF Transformations

To debug a DITA PDF transformation scenario using the XSLT Debugger follow these steps:

1. Open the **Preferences** dialog box , go to **XML** > **XML Catalog**, click **Add**, and select the file located at *DITA-OT-DIR*`\plugins\org.dita.pdf2\cfg\catalog.xml`.
2. Open the map in the **DITA Maps Manager** and create a **DITA Map PDF** transformation scenario.

3. Edit the scenario, go to the **Parameters** tab and change the value of the **clean.temp** parameter to **no**.
4. Run the transformation scenario.
5. Open the **stage1.xml** file located in the temporary directory and format and indent it.
6. Create a transformation scenario for this XML file by associating the `topic2fo_shell_fop.xsl` stylesheet located at *`DITA-OT-DIR`*`\plugins\org.dita.pdf2\xsl\fo\topic2fo_shell_fop.xsl`. If you are specifically using the RenderX XEP or Antenna House FO processors to build the PDF output, you should use the XSL stylesheets `topic2fo_shell_xep.xsl` or `topic2fo_shell_axf.xsl` located in the same folder.
7. In the transformation scenario edit the XSLT Processor combo box choose the Saxon EE XSLT processor (the same processor used when the DITA OT transformation is executed).
8. In the transformation scenario, edit the **Parameters** list and set the parameter `locale` with the value `en_GB` and the parameter `customizationDir.url` to point either to your customization directory or to the default DITA OT customization directory. Its value should have a URL syntax like this: `file://c:/path/to/`*`DITA-OT-DIR`*`/plugins/org.dita.pdf2/cfg`.
9. Debug the transformation scenario.

Related Information:

Debugging XSLT Stylesheets and XQuery Documents on page 1205
How to Enable Debugging for FO Processor Transformations on page 1127

Working with XPath Expressions

11

Topics:

- XPath Builder View
- XPath Expression Results View
- XPath and XML Catalogs
- XPath Prefix Mapping

XPath is a language for addressing specific parts of an XML document. XPath, such as the Document Object Model (DOM), models an XML document as a tree of nodes. An XPath expression is a mechanism for navigating through and selecting nodes from the XML document. An XPath expression is, in a way, analogous to an SQL query used to select records from a database.

There are various types of nodes, including element nodes, attribute nodes, and text nodes. XPath defines a way to compute a string-value for each type of node.

XPath defines a library of standard functions for working with strings, numbers and boolean expressions.

Examples:

- **child::*** - Selects all children of the root node.
- **.//name** - Selects all elements having the name "name", descendants of the current node.
- **/catalog/cd[price>10.80]** - Selects all the cd elements that have a price element with a value larger than 10.80.

To find out more about XPath, go to http://www.w3.org/TR/xpath.

Related Information:

Content Completion in XPath Expressions on page 626

XPath Builder View

The **XPath/XQuery Builder** view allows you to compose complex XPath expressions and execute them over the currently edited XML document. For XPath 2.0 / 3.0, you can use the doc( ) function to specify the source file for which the expressions are executed. When you connect to a database, the expressions are executed over that database. If you are using the **XPath/XQuery Builder** view and the current file is an XSLT document, Oxygen XML Editor plugin executes the expressions over the XML document in the associated scenario.

If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The upper part of the view contains the following actions:

XPath version chooser drop-down menu

A drop-down menu that allows you to select the type of the expression you want to execute. You can choose between:

- XPath 1.0 (Xerces-driven)
- XPath 2.0, XPath 2.0SA, XPath 3.0, XPath 3.0SA, Saxon-HE XQuery, Saxon-PE XQuery, or Saxon-EE XQuery (all of them are Saxon-driven)
- Custom connection to XML databases that can execute XQuery expressions

Note: The results returned by XPath 2.0 SA and XPath 3.0 SA have a location limited to the line number of the start element (there are no column information and no end specified).

Note: Oxygen XML Editor plugin uses Saxon to execute XPath 3.0 expressions. Since Saxon implements a part of the 3.0 functions, when using a function that is not implemented, Oxygen XML Editor plugin returns a compilation error.

Execute XPath button

Use this button to start the execution of the XPath or XQuery expression you are editing. The result of the execution is displayed in the **Results** view.

Favorites button

Allows you to save certain expressions that you can later reuse. To add an expression as a favorite, press the star button and enter a name for it. The star turns yellow to confirm that the expression was saved. Expand the drop-down menu next to the star button to see all your favorites. Oxygen XML Editor plugin automatically groups favorites in folders named after the method of execution.

History drop-down menu

Keeps a list of the last 15 executed XPath expressions. Use the **Clear history** action from the bottom of the list to remove them.

Settings drop-down menu

Contains the following three options:

- **Update on cursor move** - When selected and you navigate through a document, the XPath expression corresponding to the XML node at the current cursor position is displayed.
- **Evaluate as you type** - When you select this option, the XPath expression you are composing is evaluated in real time.

  Note: This option and the automatic validation are disabled when the scope is other than **Current file**.
- **Options** - Opens the Preferences page of the currently selected processing engine.

XPath scope menu

Oxygen XML Editor plugin allows you to define a scope for which the XPath operation will be executed. You can choose where the XPath expression will be executed:

- **Current file** - Current selected file only.
- **Enclosing project** - All the files of the project that encloses the current edited file.
- **Workspace selected files** - The files selected in the workspace. The files are collected from the last selected resource provider view (**Navigator**, **Project Explorer** or **Package Explorer**).
- **All opened files** - All files opened in the application.
- **Current DITA Map hierarchy** - All resources referenced in the currently selected *DITA map*, opened in the **DITA Maps Manager** view.
- **Opened archive** - Files open in the **Archive Browser** view.
- **Working sets** - The selected *working sets*.

At the bottom of the scope menu the following scope configuration actions are available:

- **Configure XPath working sets** - Allows you to configure and manage collections of files and folders, encapsulated in logical containers called *working sets*.
- **XPath file filter** - You can filter the files from the selected scope for which the XPath expression will be executed. By default, the XPath expression will be executed only on XML files, but you can also define a set of patterns that will filter out files from the current scope.

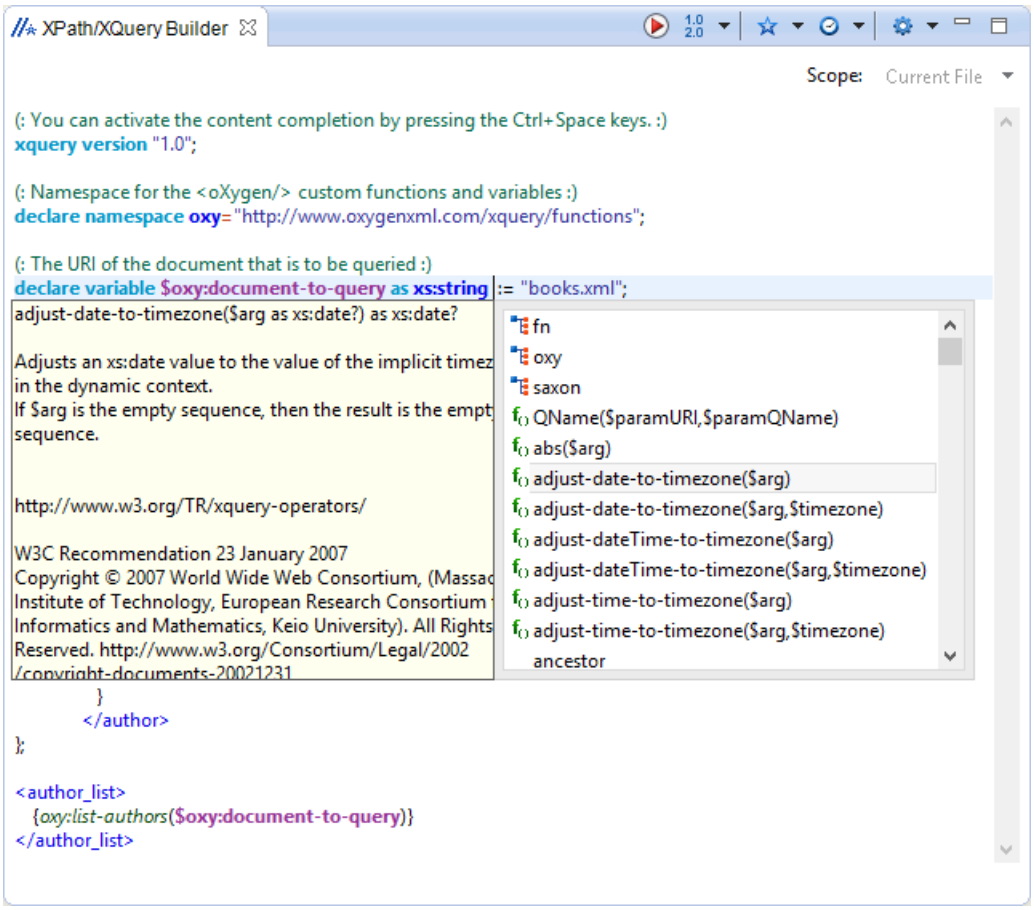


Figure 584: XPath/XQuery Builder View

When you hover your cursor over the version icon 1.0 2.0, a tooltip is displayed to let you know what engine Oxygen XML Editor plugin currently uses.

While you edit an XPath or XQuery expression, Oxygen XML Editor plugin assists you with the following features:

- *Content Completion Assistant* - It offers context-dependent proposals and takes into account the cursor position in the document you are editing. The set of functions proposed by the *Content Completion Assistant* also depends on the engine version. Select the engine version from the drop-down menu available in the toolbar.
- Syntax Highlighting - Allows you to identify the components of an expression. To customize the colors of the components of the expression, open the **Preferences** dialog box and go to **Editor** > **Syntax Highlight**.
- Automatic validation of the expression as you type.

  Note: When you type invalid syntax a red serrated line underlines the invalid fragments.
- Function signature and documentation balloon, when the cursor is located inside a function.

Related Information:

XPath Expression Results View on page 1131

XPath Expression Results View

When you run an XPath expression, Oxygen XML Editor plugin displays the results of its execution in the **XPath Results** view.

This view contains the following columns:

- **Description** - The result thatOxygen XML Editor plugin displays when you run an XPath expression.
- **XPath location** - The path to the matched node.

- **Resource** - The name of the document that you run the XPath expression on.
- **System ID** - The path to the document itself.
- **Location** - The location of the result in the document.

To arrange the results depending on a column, click its header. If no information regarding location is available, Oxygen XML Editor plugin displays **Not available** in the **Location** column. Oxygen XML Editor plugin displays the results in a valid XPath expression format.

```
- /node[value]/node[value]/node[value] -
```

XPath Results View Contextual Menu Actions

The following actions are available when the contextual menu is invoked in this view:

Select All

Extends the selection to all the messages from the view.

Copy

Copies information associated with the selected messages in case you want to paste it elsewhere.

Save Results

Saves the complete list of messages in a file in text format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as XML

Saves the complete list of messages in a file in XML format. For each message, the included details are the same as the ones for the **Copy** action.

Save Results as HTML

Saves the complete list of messages in a file in HTML format. For each message, the included details are the same as the ones for the **Copy** action.

Example:

The following snippets are taken from a DocBook book based on the DocBook XML DTD. The book contains a number of chapters. To return all the chapter nodes of the book, enter `//chapter` in the XPath expression field and press **(Enter)**. This action returns all the `chapter` nodes of the DocBook book in the **Results View**. Click a record in the **Results View** to locate and highlight its corresponding chapter element and all its children nodes in the document you are editing.

To find all `example` nodes contained in the `sect2` nodes of a DocBook XML document, use the following XPath expression: `//chapter/sect1/sect2/example`. Oxygen XML Editor plugin adds a result in the **Results View** for each `example` node found in any `sect2` node.

For example, if the result of the above XPath expression is:

```
- /chapter[1]/sect1[3]/sect2[7]/example[1]
```

it means that in the edited file, the `example` node is located in the first chapter, third section level one, seventh section level 2.

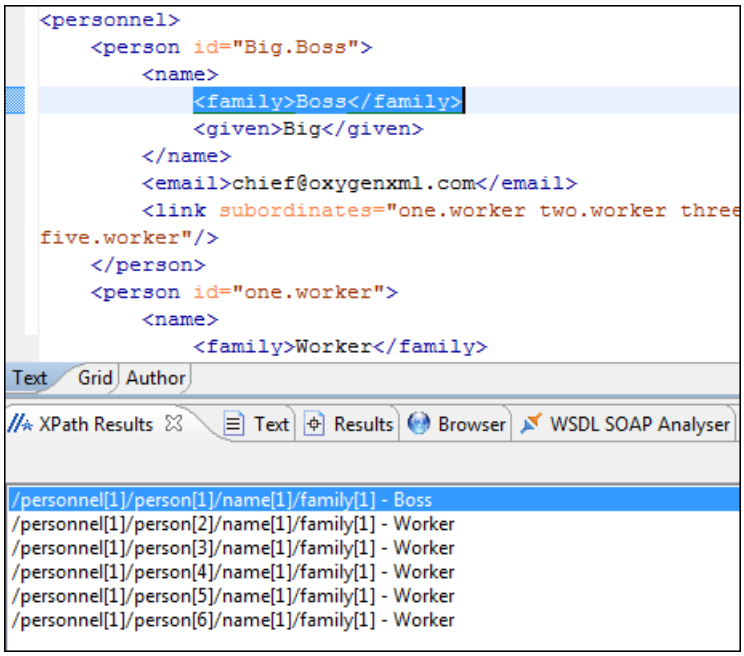


Figure 585: XPath Results Highlighted in Editor Panel with Character Precision

XPath and XML Catalogs

The evaluation of the XPath expression tries to resolve the locations of documents referenced in the expression through *XML Catalogs*. These catalogs are configured in the **XML Catalog** preferences pages and the **XML Parser** preferences.

Example:

As an example, consider the evaluation of the `collection(`**`URIofCollection`**`)` function (XPath 2.0). To resolve the references from the files returned by the `collection()` function with an *XML catalog*, specify the class name of the catalog-enabled parser for parsing these collection files. The class name is *ro.sync.xml.parser.CatalogEnabledXMLReader*. Specify it as it follows:

```
let $docs := collection(iri-to-uri(
   "file:///D:/temp/test/XQuery-catalog/mydocsdir?recurse=yes;select=*.xml;
   parser=ro.sync.xml.parser.CatalogEnabledXMLReader"))
```

XPath Prefix Mapping

To define default mappings between prefixes and namespace URIs go to the **XPath** preferences page and enter the mappings in the **Default prefix-namespace mappings** table. The same preferences panel allows you to configure the default namespace used in XPath 2.0 expressions.

Important: If you define a default namespace, Oxygen XML Editor plugin binds this namespace to the first free prefix from the list: `default`, `default1`, `default2`, and so on. For example, if you define the default namespace `xmlns="something"` and the prefix `default` is not associated with another namespace, you can match tags without prefix in an XPath expression typed in the XPath toolbar by using the prefix `default`. To find all the `level` elements when you define a default namespace in the root element, use this expression: `//default:level` in the XPath toolbar.

Working with Archives

12

Topics:

- Browsing Archives
- Working with Archive Files

Oxygen XML Editor plugin includes a useful **Archive Browser** view that offers the means to work with files directly from various types of archives (for example, opening and saving files directly in archives, or browsing and modifying archive structures). The archive support is available for all ZIP-type archives, including:

- ZIP archives
- EPUB books
- *JAR archives*
- Office Open XML (OOXML) files
- Open Document Format (ODF) files
- *IDML files*

You can transform, validate, and perform many other operations on files directly from an archive. For instance, you can transform, or validate files directly from OOXML or ODF packages, and the structure and content of the ZIP archives can be opened, edited, and saved, similar to any other ZIP archive browsing tool. Also, when browsing for a URL in various dialog boxes, you can use the **Browse for archived file** action to browse and select files from a particular archive.

For more information about working with an EPUB archive in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/OIGTNQwOCl8

Browsing Archives

To view the contents and structure of an archive, use one of the following methods:

- Open an archive from the **Navigator** view. This will open the archive in the main editing pane. The archive will be unmounted when the editor is closed.
- Use the Eclipse File System (EFS) by right-clicking the archive in the **Navigator** view and choosing **Expand Zip Archive**. This will expand the archive in the **Navigator** view. All the standard **Navigator** actions are available on the mounted archive. To close the archive, you can use the **Collapse ZIP Archive** action and any file opened from the expanded archive will be closed when the archive in unmounted.

Tip: If a file is not recognized by Oxygen XML Editor plugin as a supported archive type, you can add it from the **Archive** preferences page.

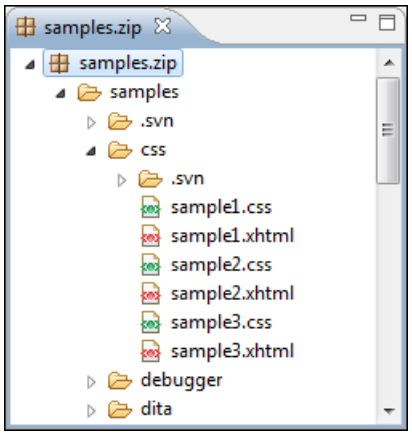


Figure 586: Browsing an Archive

Archive Contextual Menu Actions

The following additional actions are available from the contextual menu for archives:

Open

Opens a resource from the archive in the editor.

Extract

Extracts a resource from the archive in a specified folder.

New folder

Creates a folder as child of the selected folder in the browsed archive.

New file

Creates a file as child of the selected folder in the browsed archive.

Add files

Adds existing files as children of the selected folder in the browsed archive.

Note: On OS X, the **Add file** action is also available and it allows you to add one file at a time.

Rename

Renames a resource in the archive.

Cut

Cuts the selected archive resource.

Copy

Copies the selected archive resource.

Paste

Pastes a file or folder into the archive.

Delete

Removes a file or folder from archive.

Copy location

Copies the URL location of the selected resource.

Refresh

Refreshes the selected resource.

Properties

Shows the properties of the selected resource.

For more information, watch our video demonstration about working with an EPUB in the **Archive Browser** view:

https://www.youtube.com/embed/OIGTNQwOCl8

Working with Archive Files

Oxygen XML Editor plugin includes support for working with various types of archives, including the following:

- **EPUB** - An e-book file format that can be used on many types of devices, such as smart phones, tablets, e-readers, or computers.
- **OOXML** - An XML-based file format for representing spreadsheets, charts, presentations, and word processing documents.
- **ODF** - An free and open-source XML-based file format for electronic office documents, such as spreadsheets, charts, presentations, and word processing documents.

When these types of files are opened in the **Navigator** view or the main editing pane, their internal components are expanded:

- Document content (XHTML and image files).
- Packaging files.
- Container files.

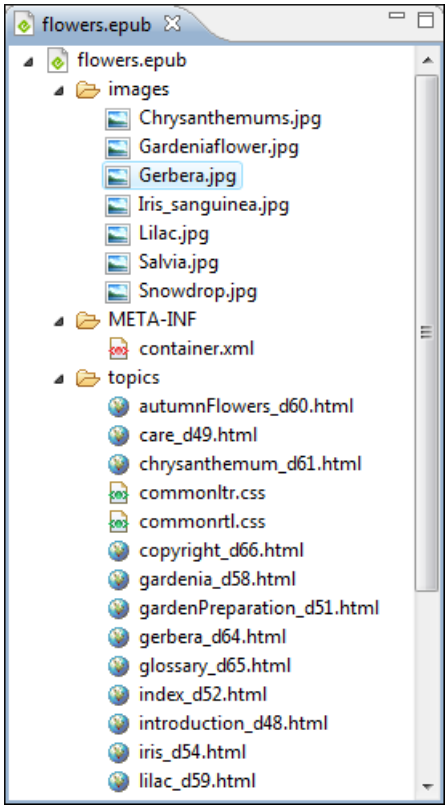


Figure 587: EPUB File Displayed in Eclipse

When an archive is expanded, you can add or delete files that compose the archive structure. All changes made to the structure of an archive are saved immediately. You can open files from within the archive to edit them in the main editing pane and save changes back to the archive. You can also use the **Open in System Application** action to open the archive in the default system application that is associated with that type of file.

EPUB-Specific Validation

When working with EPUB archives, Eclipse includes a **Validate** action on the toolbar that checks the EPUB archive to make sure the structure and content are valid. Oxygen XML Editor plugin uses the open-source

EpubCheck validator to perform the validation. This validator detects many types of errors, including OCF container structure, OPF and OPS mark-up, as well as internal reference consistency.

For more information about working with an EPUB archive in Oxygen XML Editor plugin, watch our video demonstration:

https://www.youtube.com/embed/OIGTNQwOCl8

Related Information:

The Archive Browser View on page 1134
EPUB Document Type (Framework) on page 881

Creating an Archive

To create an archive from scratch, follow these steps:

1. Go to **File** > **New** > **New from Templates**.
2. Choose your particular type of archive template. For example, select one of the **ODF**, **OOXML**, or **EPUB** templates.
3. Click **Next** and choose the name and location of the file.
4. Click **Finish**.
   A skeleton archive is saved on disk and opened in Eclipse.

   Tip: Use toolbar and contextual menu actions to edit, add, and remove resources from the archive. For EPUB archives, you can use the **Validate** action to verify the integrity of the EPUB archive.

Editing and Saving Files Inside an Archive

You can open files directly from an archive and then edit them in the main editor pane. To open a file, simply double-click it or select **Open** from the contextual menu.

When saving the file back to the archive, you are prompted to choose if you want the application to make a backup copy of the archive before saving the new content. If you choose **Never ask me again**, you will not be asked again to make backup copies. You can re-enable the pop-up message from the Archive preferences page.

Migrating Archives to DITA or TEI

Certain types of archives can be converted to DITA or TEI. For example, OOXML (Office Open XML) archive files with the DOCX file extension can be migrated to DITA or TEI.

To migrate DOCX files to DITA or TEI, follow these steps:

1. Open and expand the archive in Eclipse.
2. Open the **document.xml** file contained in the archive.
3. Run one of the following predefined transformation scenarios:
   a) **DOCX DITA** to migrate to DITA.
   b) **DOCX TEI P5** to migrate to TEI.
4. You may need to do some manual reconfiguring to map DOCX styles to DITA or TEI content.

   Tip: Oxygen XML Editor plugin also includes a predefined transformation scenario called **ODT TEI P5** for converting ODF archive files with the ODT file extension to TEI and a similar process can be used to migrate ODT files to TEI.

Databases and SharePoint

13

Topics:

- Working with Databases
- Integration with Microsoft SharePoint

Oxygen XML Editor plugin provides support for connecting and integrating with various databases and Microsoft SharePoint. This section includes information about the database-related features in Oxygen XML Editor plugin. It explains how to connect with the supported databases, presents the actions that are available for each type, and includes information about SharePoint integration.

Working with Databases

XML is a storage and interchange format for structured data and is supported by all major database systems. Oxygen XML Editor plugin offers the means for managing the interaction with some of the most commonly used databases (both *Relational* and *Native XML* databases). Through this interaction, Oxygen XML Editor plugin helps users with browsing, content editing, importing from databases, using XQuery with databases, SQL execution, and generating XML Schema from a database structure.

The types of connections that are supported in Oxygen XML Editor plugin include:

- IBM DB2
- Microsoft SQL Server
- Oracle Database
- PostgreSQL
- Berkeley DB XML
- eXist
- MarkLogic
- Documentum xDB (X-Hive/DB)
- MySQL
- Generic JDBC
- JDBC-ODBC
- BaseX
- WebDAV
- Microsoft SharePoint

Related Information:

Integration with Microsoft SharePoint on page 1191

Data Source Explorer View

The **Data Source Explorer** view displays your database connections. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

You can connect to a database simply by expanding the connection node (click the connection) . The database structure can be expanded to resource level, or even all the way to column level for tables inside relational databases. Oxygen XML Editor plugin supports multiple simultaneous database connections and the connection tree in the **Data Source Explorer** view provides an easy method for browsing them.

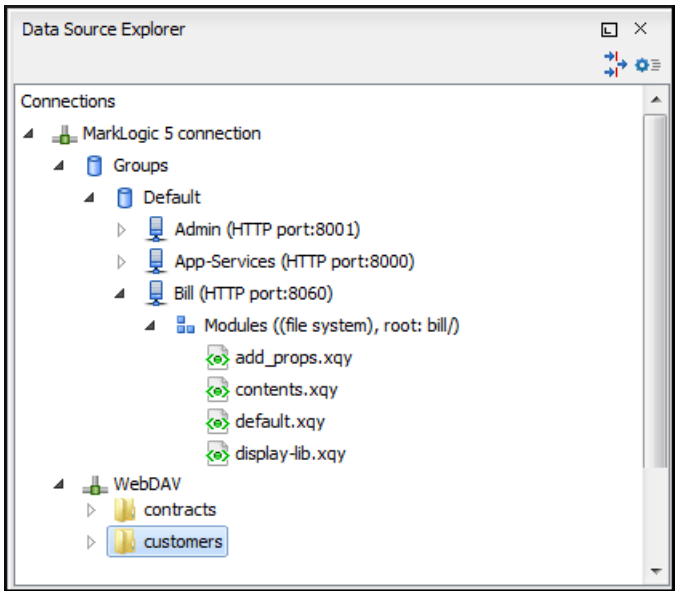


Figure 588: Data Source Explorer View

The objects (nodes) that are displayed in the **Data Source Explorer** view depend on the connection type and structure of the database. Various contextual menu actions are available for each hierarchical level and for some connections you can add or move resources in a container by simply dragging them from the **Navigator** view, a file browsing application, or another database.

Toolbar Actions

The following actions are available in the toolbar of this view:

Filters

Opens the **Data Sources / Table Filters** preferences page, allowing you to decide which table types are displayed in the **Data Source Explorer** view.

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Database-Specific Contextual Menu Actions

Each specific type of database will also include its own specific contextual menu actions in the **Data Source Explorer** view. The actions depend on the type of database, the type of node, or the hierarchical level of the node in which the contextual menu is invoked.

For more information on the specific actions that are available, see the topics in this section for each specific type of database.

Related Information:

Data Sources Preferences on page 40

Table Explorer View

Relational databases tables in the **Data Source Explorer** view can be displayed and edited in the **Table Explorer** view by selecting the **Edit** action from the contextual menu of a **Table** node or by double-clicking one of its fields. To modify the content of a cell, double-click it and start typing. When editing is complete, Oxygen XML Editor plugin attempts to update the database with the new cell content.

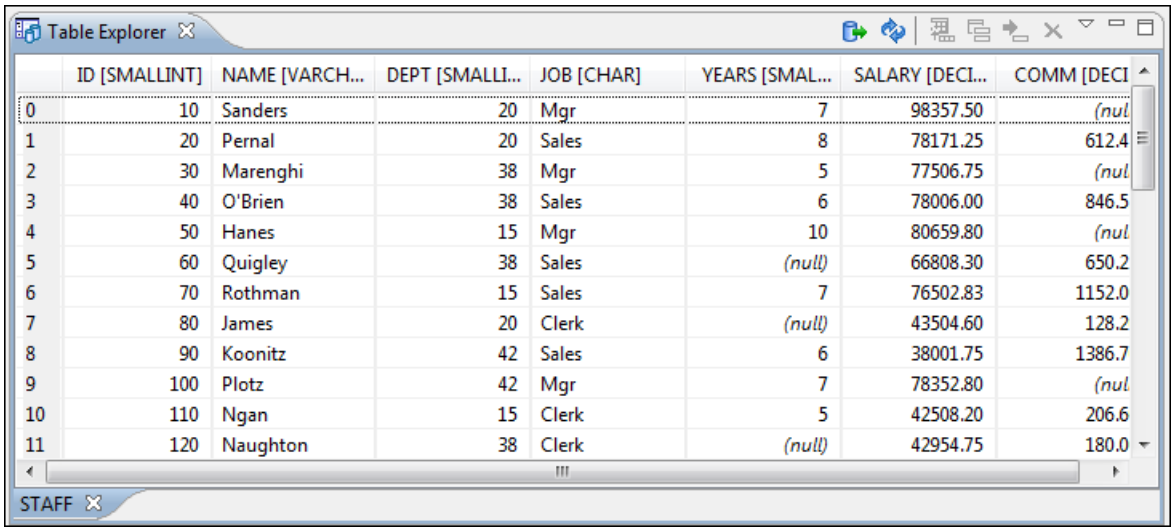


Figure 589: Table Explorer View

You can sort the content of a table by one of its columns by clicking its column header.

Note the following:

- The first column is an index (not part of the table structure).
- Every column header contains the field name and its data type.
- The primary key columns are marked with this symbol: .
- Multiple tables are presented in a tabbed manner.

For performance issues, you can set the maximum number of cells that are displayed in the **Table Explorer** view (using the **Limit the number of cells** option in the **Data Sources** Preferences page). If a table that has more cells than the value set in the options is displayed in the **Table Explorer** view, a warning dialog box informs you that the table is only partially shown.

You are notified if the value you have entered in a cell is not valid (and thus cannot be updated).

- If the content of the edited cell does not belong to the data type of the column, an information dialog box appears, notifying you that the value you have inserted cannot be converted to the SQL type of that field. For example, if you have a column that contains LONG (numerical) values, and a character or string is inserted into one of its cells, you would get the error message that a string value cannot be converted to the requested SQL type (NUMBER).
- If the constraints of the database are not met (for instance, primary key constraints), an information dialog box will appear, notifying you of the reason the database has not been updated. For example, in the table below, trying to set the second record in the primary key `propID` column to 8, results in a duplicate entry error since that value has already been used in the first record:

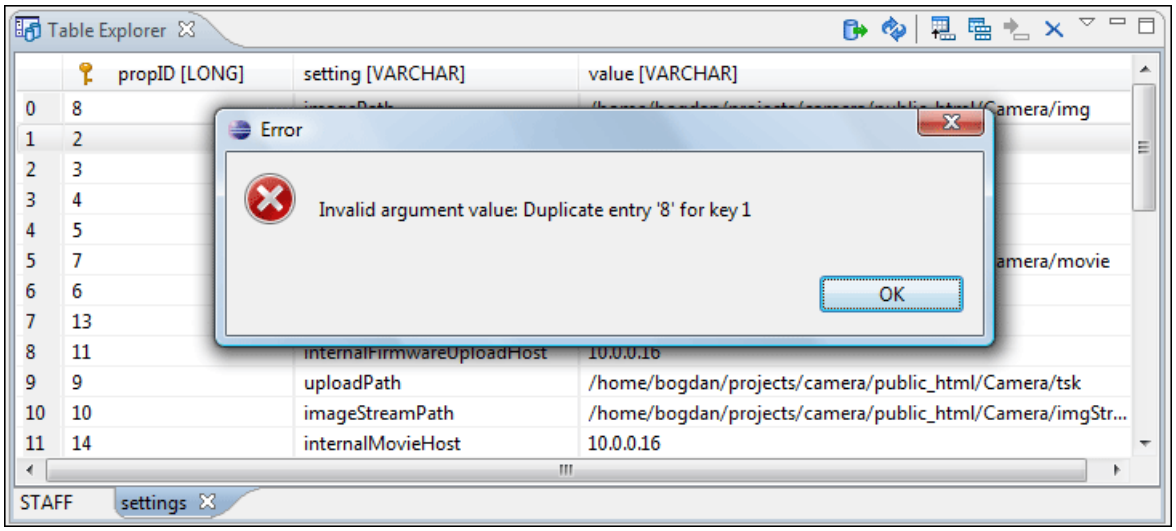


Figure 590: Duplicate Entry for Primary Key

Table Explorer Contextual Menu Actions

Common editing actions (**Cut**, **Copy**, **Paste**, **Select All**, **Undo**, **Redo**) are available in the contextual menu of an edited cell.

The contextual menu, available on every cell in the **Table Explorer** view, also includes the following actions:

Set NULL

Sets the content of the cell to **null**. This action is not available for columns that cannot have a value of **null**.

Insert row

Inserts an empty row in the table.

Duplicate row

Makes a copy of the selected row and adds it in the **Table Explorer** view. Note that the new row will not be inserted in the database table until all conflicts are resolved.

Commit row

Commits the selected row.

Delete row

Deletes the selected row.

Copy

Copies the content of the cell.

Paste

Pastes copied content into the selected cell.

Table Explorer Toolbar Actions

The toolbar of the **Table Explorer** view also includes the following actions:

Export to XML

Opens the **Export Criteria** dialog box (a thorough description of this dialog box can be found in the Import from database chapter) .

Refresh

Performs a refresh for the sub-tree of the selected node.

Insert row

Inserts an empty row in the table.

Duplicate row

Makes a copy of the selected row and adds it in the **Table Explorer** view. Note that the new row will not be inserted in the database table until all conflicts are resolved.

Commit row

Commits the selected row.

Delete row

Deletes the selected row.

Related Information:

Data Source Explorer View on page 1138

Database Connection Support

Oxygen XML Editor plugin offers support for a variety of *Relational* and *Native XML* database connections. The database drivers and connections for various types of database are configured in the **Data Sources** preferences page and once configured, the database connections can be viewed and managed in the **Data Source Explorer** view. Oxygen XML Editor plugin also includes a **Database** *perspective* that helps you to manage databases.

The database support in Oxygen XML Editor plugin offers a variety of capabilities, including:

- Browsing the structure of databases in the **Data Source Explorer** view.
- Viewing relational tables in the **Table Explorer** view.
- Executing SQL queries against databases.
- Calling stored procedures with input and output parameters.
- XQuery execution with databases.
- Exporting data from databases to XML.

Relational Database Support

Relational databases use a relational model and are based on tables linked by a common key. Oxygen XML Editor plugin offers support for the most commonly used relational databases, including:

- IBM DB2
- Oracle 11g
- Microsoft SQL Server
- PostgreSQL
- MySQL

Oxygen XML Editor plugin also offers generic support (table browsing and execution of SQL queries) for any JDBC-compliant database (for example, *MariaDB*).

Native XML Database Support

Native XML databases have an XML-based internal model and their fundamental unit of storage is XML. They use XML as an interface to specify documents as tree structured data that may contain unstructured text, but on disk the data is stored as optimized binary files. This makes query and retrieval processes faster. Oxygen XML Editor plugin offers support for the most commonly used native XML databases, including:

- Berkeley DB XML
- eXist
- MarkLogic
- Documentum xDB (X-Hive/DB) 10
- Oracle XML DB
- Base X

Related Information:

WebDAV Connections on page 1182
Integration with Microsoft SharePoint on page 1191

IBM DB2 Database Connections

Oxygen XML Editor plugin includes support for IBM DB2 database connections. Oxygen XML Editor plugin allows you to browse the structure of an IBM DB2 database in the **Data Source Explorer** view, open tables in the **Table Explorer** view, and perform various operations on the resources in the repository.

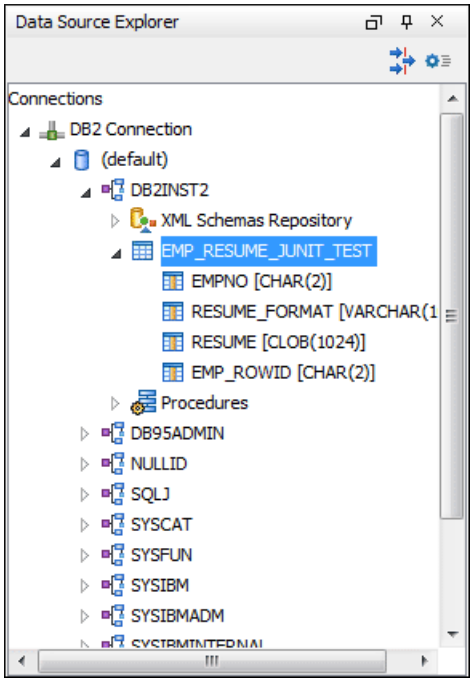


Figure 591: IBM DB2 Database Connection

Configuring an IBM DB2 Database Connection

To configure the support for the IBM DB2 database, follow this procedure:

1. Go to the IBM website and in the *DB2 Clients and Development Tools* category select the *DB2 Driver for JDBC and SQLJ* download link. Fill out the download form and download the zip file. Unzip the zip file and use the `db2jcc.jar` and `db2jcc_license_cu.jar` files in Oxygen XML Editor plugin for configuring a DB2 data source.
2. Configure IBM DB2 *Data Source* drivers.
3. Configure an IBM DB2 Server *Connection*.
4. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure IBM DB2 Data Source Drivers

Available in the Enterprise edition only.

To configure a data source for connecting to an IBM DB2 server, follow these steps:

1. Go to the IBM website and in the *DB2 Clients and Development Tools* category select the *DB2 Driver for JDBC and SQLJ* download link. Fill out the download form and download the zip file.
2. Unzip the downloaded archive.
3. Open the **Preferences** dialog box and go to **Data Sources**.
4. Click the **New** button in the **Data Sources** panel.

   The dialog box for configuring a data source is opened.

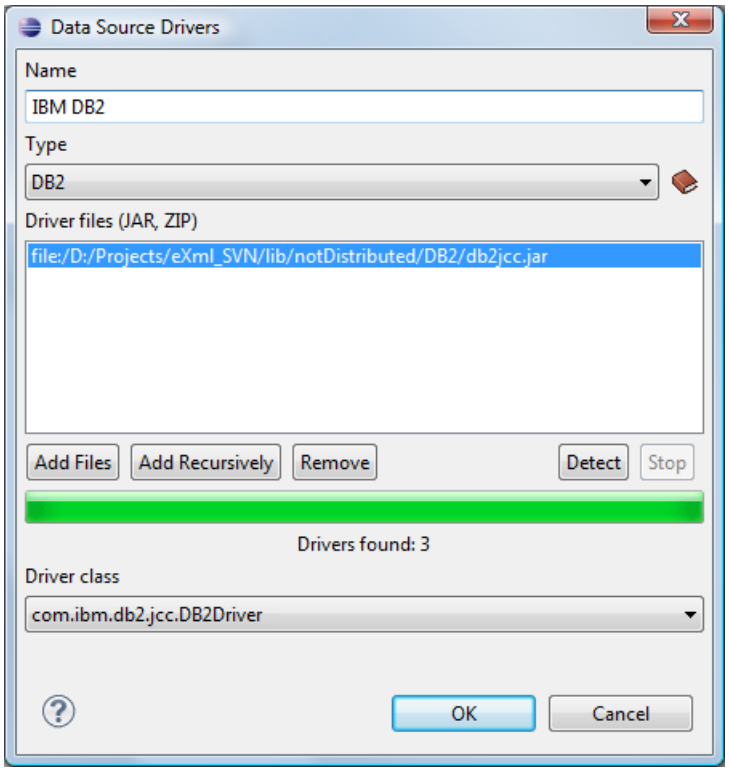


Figure 592: Data Source Drivers Configuration Dialog Box

5. Enter a unique name for the data source.
6. Select *DB2* in the driver **Type** drop-down menu.
7. Click the **Add Files** button and select the IBM DB2 driver files from the archive that you downloaded and unzipped.

   The IBM DB2 driver files are:

   - `db2jcc.jar`
   - `db2jcc_license_cisuz.jar`
   - `db2jcc_license_cu.jar`
8. Select the most appropriate **Driver class**.
9. Click the **OK** button to finish the data source configuration.
10. Continue on to configure your IBM DB2 connection.

How to Configure an IBM DB2 Connection

The support to create an IBM DB2 connection is available in the Enterprise edition only.

To configure a connection to an IBM DB2 server, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.

   The dialog box for configuring a database connection is displayed.

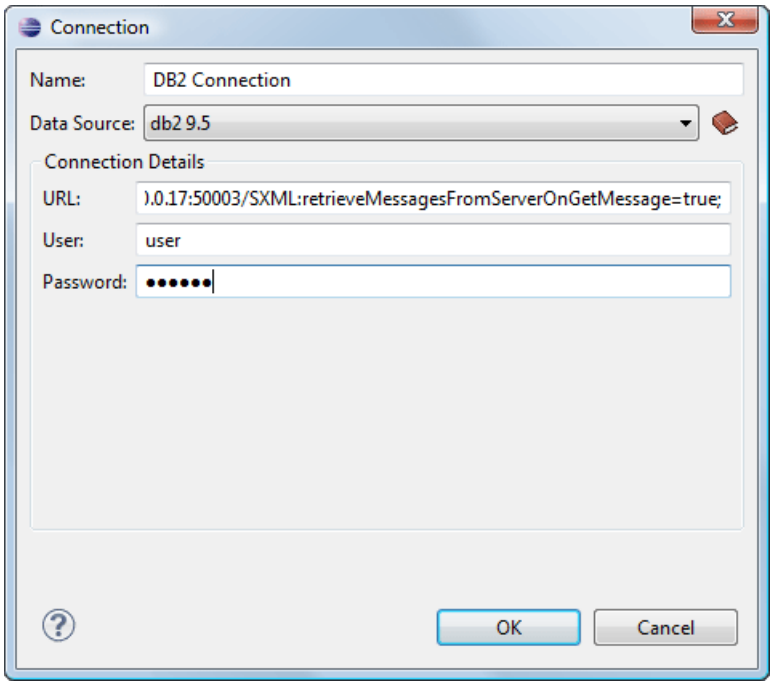


Figure 593: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select an *IBM DB2* data source in the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Enter the URL to the installed IBM DB2 engine.
   b) Enter the user name to access the IBM DB2 engine.
   c) Enter the password to access the IBM DB2 engine.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

IBM DB2 Contextual Menu Actions

General Contextual Menu Actions

For relational databases, the following general actions are available in the contextual menu of the **Data Source Explorer** view, depending on the node in which it is invoked:

Refresh

Performs a refresh on the selected node.

Disconnect (available on Connection nodes)

Closes the current database connection. If a table is already open, you are warned to close it before proceeding.

Configure Database Sources (available on Connection nodes)

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Edit (available on Table nodes)

Opens the selected table in the **Table Explorer** view.

Export to XML (available on Table nodes)

Opens the **Export Criteria** dialog box (a thorough description of this dialog box can be found in the Import from Database chapter).

Database-Specific Contextual Menu Actions

In addition to the general contextual menu actions in the **Data Source Explorer** view, the various nodes in IBM DB2 connections include the following additional contextual menu actions:

XML Schema Repository Level Nodes

Register

Opens a dialog box for adding a new schema file in the DB XML repository. In this dialog box, you enter a collection name and the necessary schema files. Schema dependencies management can be done by using the **Add** and **Remove** buttons.

Schema Level Nodes

Unregister

Removes the selected schema from the XML Schema Repository.

View

Opens the selected schema in Oxygen XML Editor plugin.

Microsoft SQL Server Database Connections

Oxygen XML Editor plugin includes support for Microsoft SQL Server database connections. Oxygen XML Editor plugin allows you to browse the structure of a SQL Server database in the **Data Source Explorer** view, open tables in the **Table Explorer** view, and perform various operations on the resources in the repository.

Configuring a Microsoft SQL Server Connection

To configure the support for a Microsoft SQL Server database, follow this procedure:

1. Download the appropriate MS SQL JDBC driver from the Microsoft website. For SQL Server 2008 R2 and older go to http://www.microsoft.com/en-us/download/details.aspx?id=21599. For SQL Server 2012 and 2014 go to http://www.microsoft.com/en-us/download/details.aspx?id=11774.
2. Configure MS SQL Server *Data Source* drivers.
3. Configure a MS SQL Server *Connection*.
4. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure Microsoft SQL Server Data Source Drivers

Available in the Enterprise edition only.

To configure a data source for connecting to a Microsoft SQL server, follow these steps:

1. Download the appropriate MS SQL JDBC driver from the Microsoft website. For SQL Server 2008 R2 and older, go to http://www.microsoft.com/en-us/download/details.aspx?id=21599. For SQL Server 2012 and 2014, go to http://www.microsoft.com/en-us/download/details.aspx?id=11774.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.

   The dialog box for configuring a data source is opened.

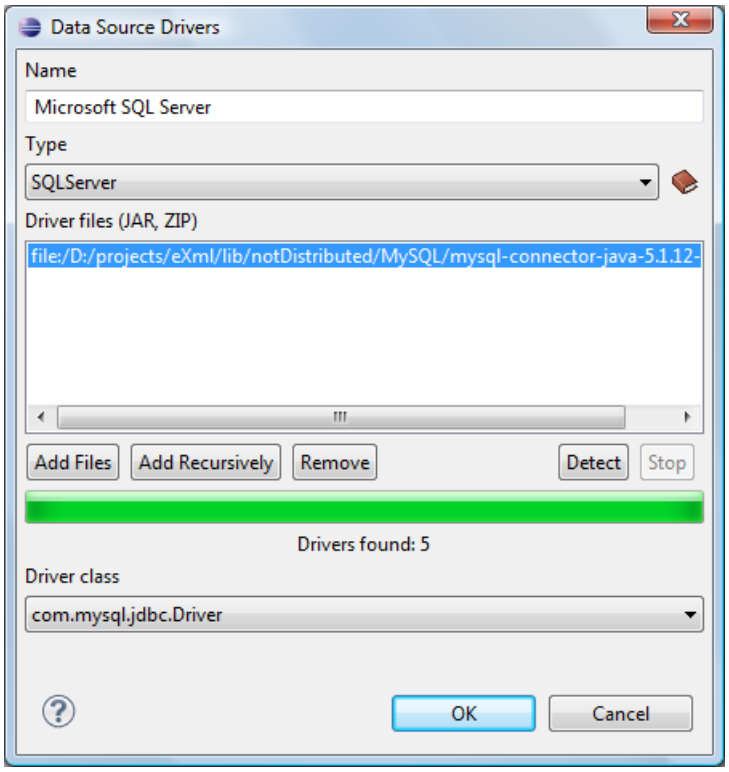


Figure 594: Data Source Drivers Configuration Dialog Box

4. Enter a unique name for the data source.
5. Select *SQLServer* in the driver **Type** drop-down menu.
6. Click the **Add Files** button and select the Microsoft SQL Server driver file that you downloaded.
   The SQL Server driver file is called `sqljdbc.jar`.
7. Select the most appropriate **Driver class**.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure your Microsoft SQL Server connection.

How to Configure a Microsoft SQL Server Connection

The support to configure a Microsoft SQL Server connection is available in the Enterprise edition only.

To configure a connection to a Microsoft SQL Server, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
   The dialog box for configuring a database connection is displayed.

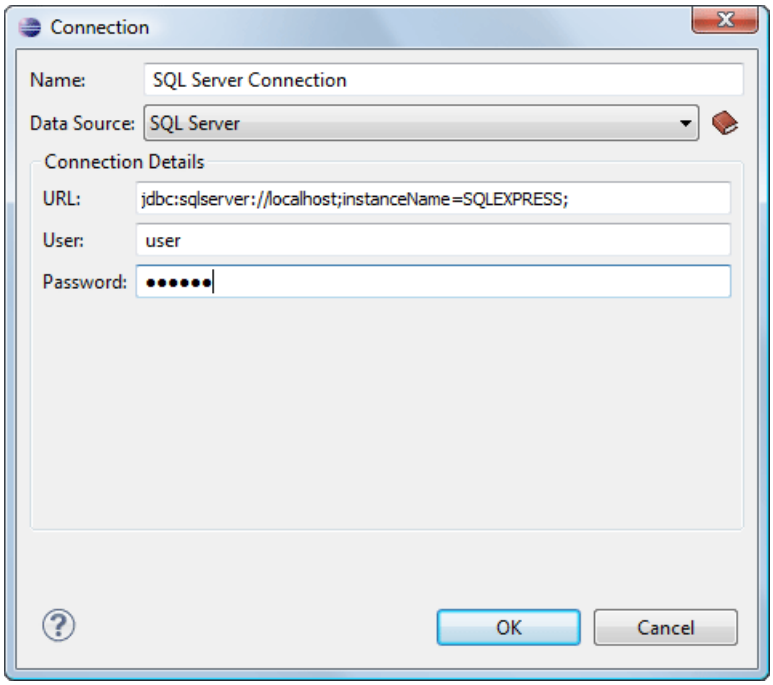


Figure 595: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select the *SQL Server* data source in the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Enter the URL of the SQL Server server.

      If you want to connect to the server using Windows integrated authentication, you must add **;integratedSecurity=true** to the end of the URL. The URL will look like this:

      ```
      jdbc:sqlserver://localhost;instanceName=SQLEXPRESS;integratedSecurity=true;
      ```

      Note: For integrated authentication, leave the **User** and **Password** fields empty.
   b) Enter the user name for the connection to the SQL Server.
   c) Enter the password for the connection to the SQL Server.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Microsoft SQL Server Contextual Menu Actions

General Contextual Menu Actions

For relational databases, the following general actions are available in the contextual menu of the **Data Source Explorer** view, depending on the node in which it is invoked:

Refresh

Performs a refresh on the selected node.

Disconnect (available on Connection nodes)

Closes the current database connection. If a table is already open, you are warned to close it before proceeding.

Configure Database Sources (available on Connection nodes)

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Edit (available on Table nodes)

Opens the selected table in the **Table Explorer** view.

Export to XML (available on Table nodes)

Opens the **Export Criteria** dialog box (a thorough description of this dialog box can be found in the Import from Database chapter).

Database-Specific Contextual Menu Actions

In addition to the general contextual menu actions in the **Data Source Explorer** view, the resource level nodes in Microsoft SQL Server connections include the following additional contextual menu action:

XML Schema Repository Level Nodes

Register

Opens a dialog box for adding a new schema file in the DB XML repository. In this dialog box, you enter a collection name and the necessary schema files. Schema dependencies management can be done by using the **Add** and **Remove** buttons.

Schema Level Nodes

Add

Adds a new schema to the XML Schema files.

Unregister

Removes the selected schema from the XML Schema Repository.

View

Opens the selected schema in Oxygen XML Editor plugin.

Oracle Database Connections

The Oracle database is a common relational type of database system. Oxygen XML Editor plugin comes with built-in support for the 11g version of the database system. The Oracle database also includes a Oracle XML DB component that adds native XML support. Oxygen XML Editor plugin allows you to browse Oracle repositories in the **Data Source Explorer** view, open tables in the **Table Explorer** view, and perform various operations on the resources in the repository.

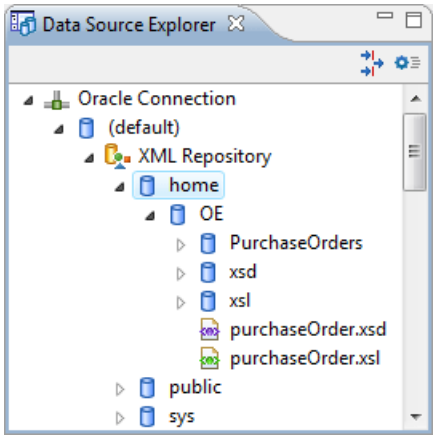


Figure 596: Oracle Database Connection

Related Information:
Using XQuery with Oracle XML DB

Configuring an Oracle 11g Database Connection

To configure the support for a Oracle 11g database, follow this procedure:

1. Go to http://www.oracle.com/technetwork/database/enterprise-edition/jdbc-112010-090769.html and download the Oracle 11g JDBC driver called `ojdbc6.jar`.
2. Configure Oracle 11g *Data Source* drivers.

3. Configure an Oracle 11g *Connection*.
4. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure Oracle 11g Data Source Drivers

Available in the Enterprise edition only.

To configure a data source for connecting to an Oracle 11g server, follow these steps:

1. Go to http://www.oracle.com/technetwork/database/enterprise-edition/jdbc-112010-090769.html and download the Oracle 11g JDBC driver called `ojdbc6.jar`.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.

   The dialog box for configuring a data source is opened.

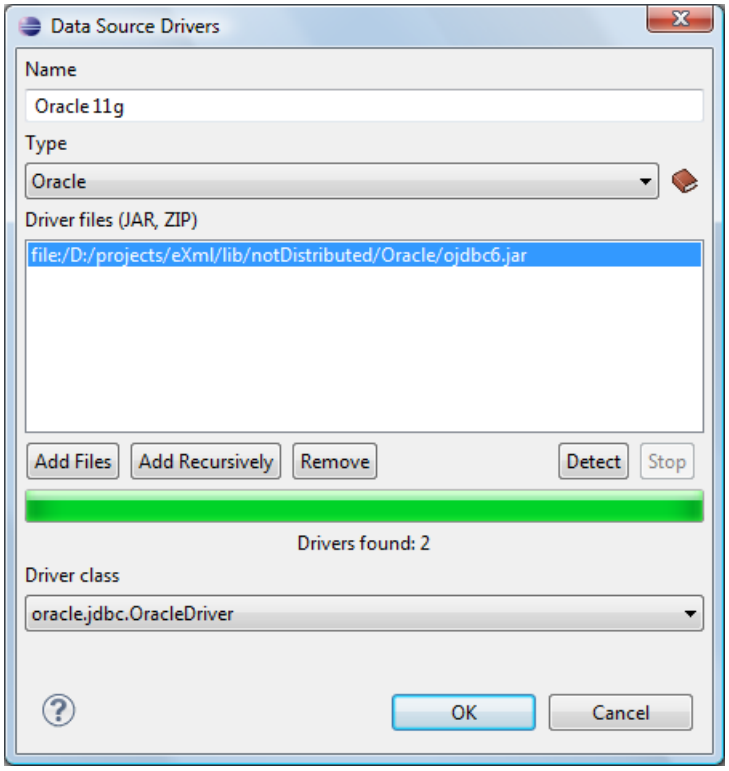


Figure 597: Data Source Drivers Configuration Dialog Box

4. Enter a unique name for the data source.
5. Select *Oracle* in the driver **Type** drop-down menu.
6. Click the **Add Files** button and select the Oracle driver file that you downloaded.

   The Oracle driver file is called `ojdbc5.jar`.
7. Select the most appropriate **Driver class**.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure your Oracle connection.

How to Configure an Oracle 11g Connection

Available in the Enterprise edition only.

To configure a connection to an Oracle 11g server, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.

The dialog box for configuring a database connection is displayed.

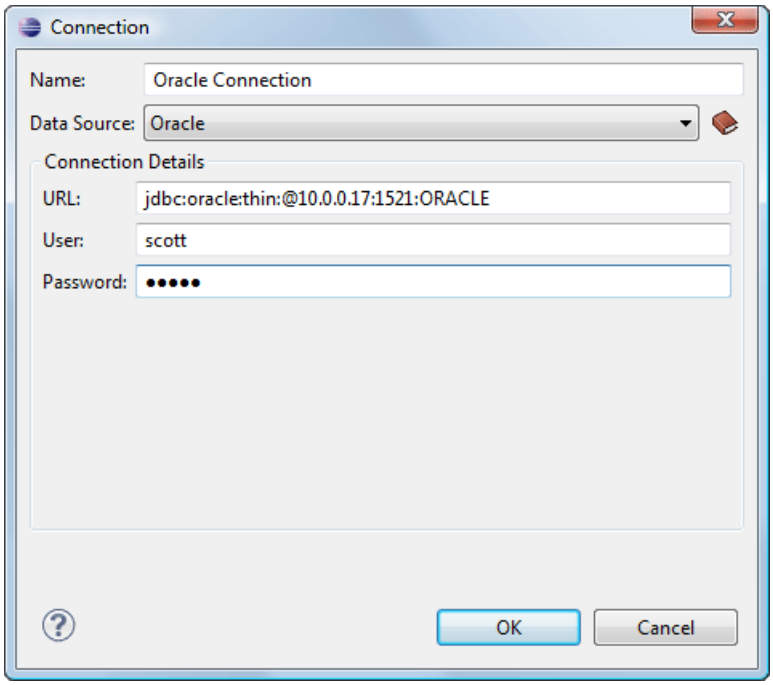


Figure 598: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select the *Oracle 11g* data source in the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Enter the URL of the Oracle server.
   b) Enter the user name for the connection to the Oracle server.
   c) Enter the password for the connection to the Oracle server.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Oracle Database Contextual Menu Actions

General Contextual Menu Actions

For relational databases, the following general actions are available in the contextual menu of the **Data Source Explorer** view, depending on the node in which it is invoked:

Refresh

Performs a refresh on the selected node.

Disconnect (available on Connection nodes)

Closes the current database connection. If a table is already open, you are warned to close it before proceeding.

Configure Database Sources (available on Connection nodes)

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Edit (available on Table nodes)

Opens the selected table in the **Table Explorer** view.

Export to XML (available on Table nodes)

Opens the **Export Criteria** dialog box (a thorough description of this dialog box can be found in the Import from Database chapter).

Database-Specific Contextual Menu Actions

In addition to the general contextual menu actions in the **Data Source Explorer** view, the various nodes in Oracle database connections include the following additional contextual menu actions:

XML Schema Repository Level Nodes

Register

Opens a dialog box for adding a new schema file in the XML repository. To add an XML Schema, enter the schema URI and location on your file system. *Local* scope means that the schema is visible only to the user who registers it. *Global* scope means that the schema is public.

Note: Registering a schema may involve dropping/creating types. Hence you need type-related privileges such as DROP TYPE, CREATE TYPE, and ALTER TYPE. You need privileges to delete and register the XML schemas involved in the registering process. You need all privileges on XMLType tables that conform to the registered schemas. For XMLType columns, the ALTER TABLE privilege is needed on corresponding tables. If there are schema-based XMLType tables or columns in other database schemas, you need privileges such as the following:

- `CREATE ANY TABLE`
- `CREATE ANY INDEX`
- `SELECT ANY TABLE`
- `UPDATE ANY TABLE`
- `INSERT ANY TABLE`
- `DELETE ANY TABLE`
- `DROP ANY TABLE`
- `ALTER ANY TABLE`
- `DROP ANY INDEX`

To avoid having to grant all these privileges to the schema owner, Oracle recommends that the registration be performed by a DBA if there are XML schema-based XMLType table or columns in other user database schemas.

XML Repository Level Nodes

Add container

Adds a new child container to the current one.

Add resource

Adds a new resource to the folder.

Container Level Nodes

Add container

Adds a new child container to the current one.

Add resource

Adds a new resource to the folder.

Delete

Deletes the current container.

Properties

Shows various properties of the current container.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default

application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Rename

Renames the current resource

Move

Moves the current resource to a new container (also available through drag and drop).

Delete

Deletes the current container.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

PostgreSQL Database Connections

Oxygen XML Editor plugin includes support for PostgreSQL database connections. Oxygen XML Editor plugin allows you to browse the structure of a PostgreSQL database in the **Data Source Explorer** view, open tables in the **Table Explorer** view, and perform various operations on the resources in the repository.

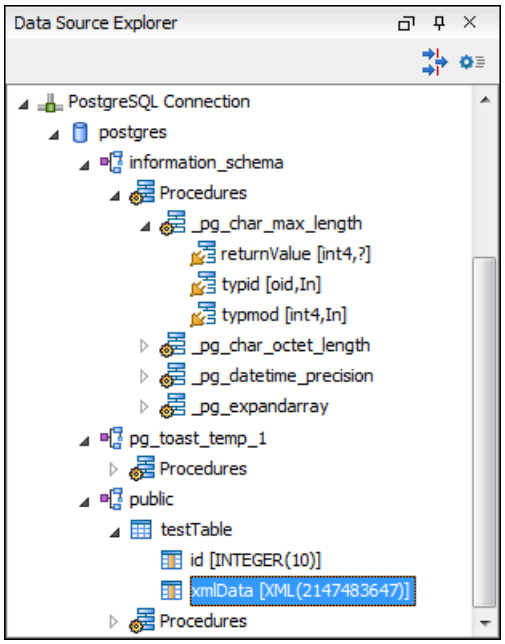


Figure 599: PostgreSQL Database Connection

Configuring a PostgreSQL Database Connection

To configure the support for a PostgreSQL database, follow this procedure:

1. Go to http://jdbc.postgresql.org/download.html and download the PostgreSQL 8.3 JDBC3 driver.
2. Configure PostgreSQL *Data Source* drivers.
3. Configure a PostgreSQL *Connection*.
4. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure PostgreSQL 8.3 Data Source Drivers

To configure a data source for connecting to a PostgreSQL server, follow these steps:

1. Go to http://jdbc.postgresql.org/download.html and download the PostgreSQL 8.3 JDBC3 driver.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.

   The dialog box for configuring a data source is opened.

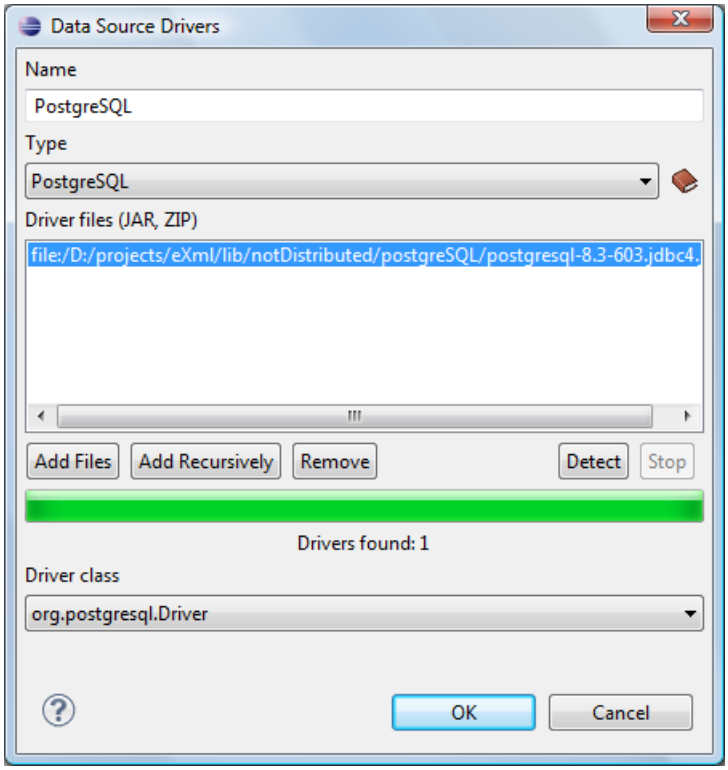


Figure 600: Data Source Drivers Configuration Dialog Box

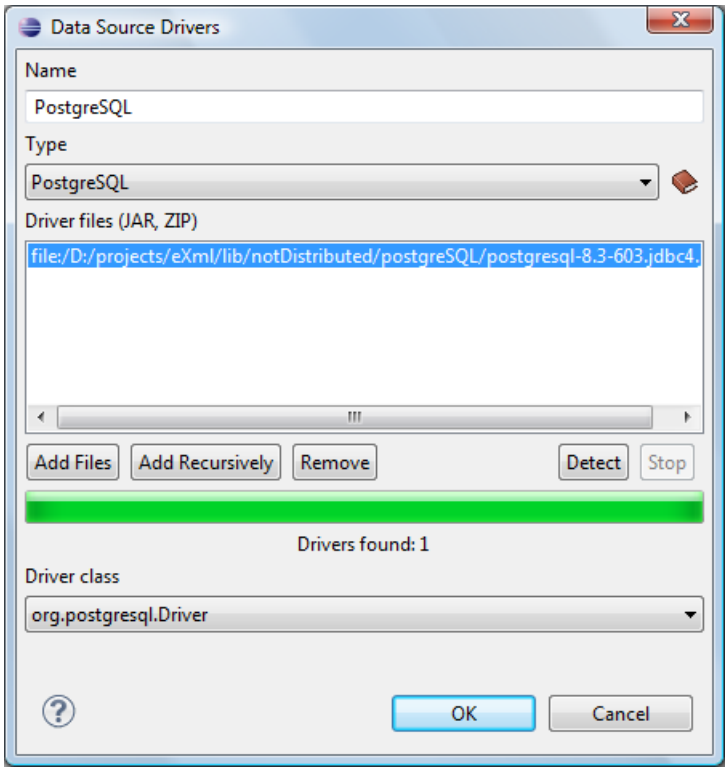


Figure 601: Data Source Drivers Configuration Dialog Box

4. Enter a unique name for the data source.
5. Select *PostgreSQL* in the driver **Type** drop-down list.
6. Click the **Add Files** button and select the PostgreSQL driver file that you downloaded.
   The PostgreSQL driver file is called `postgresql-8.3-603.jdbc3.jar`.
7. Select the most appropriate **Driver class**.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure your PostgreSQL connection.

How to Configure a PostgreSQL 8.3 Connection

To configure a connection to a PostgreSQL 8.3 server, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
   The dialog box for configuring a database connection is displayed.

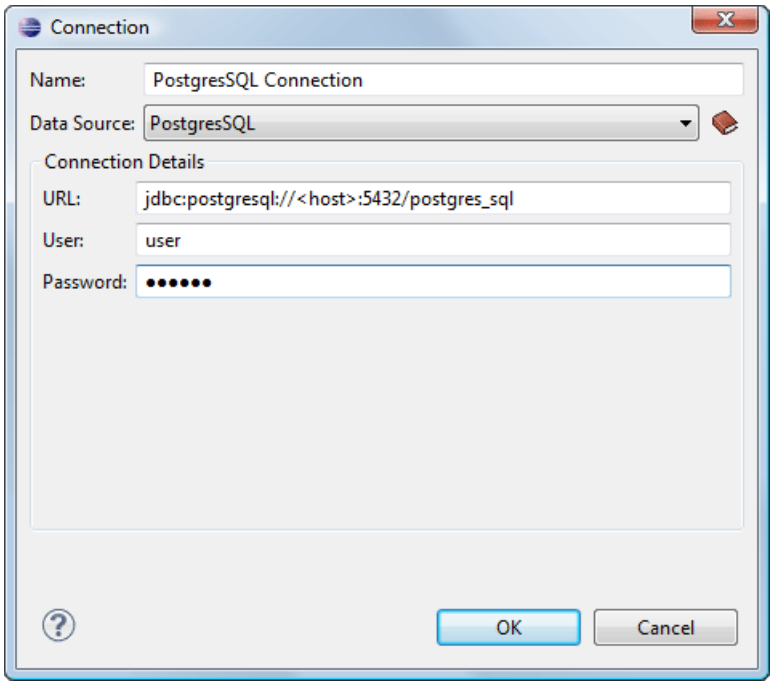


Figure 602: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select the *PostgreSQL 8.3* data source in the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Enter the URL of the PostgreSQL 8.3 server.
   b) Enter the user name for the connection to the PostgreSQL 8.3 server.
   c) Enter the password for the connection to the PostgreSQL 8.3 server.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

PostgreSQL Contextual Menu Actions

General Contextual Menu Actions

For relational databases, the following general actions are available in the contextual menu of the **Data Source Explorer** view, depending on the node in which it is invoked:

Refresh

Performs a refresh on the selected node.

Disconnect (available on Connection nodes)

Closes the current database connection. If a table is already open, you are warned to close it before proceeding.

Configure Database Sources (available on Connection nodes)

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Edit (available on Table nodes)

Opens the selected table in the **Table Explorer** view.

Export to XML (available on Table nodes)

Opens the **Export Criteria** dialog box (a thorough description of this dialog box can be found in the Import from Database chapter).

Database-Specific Contextual Menu Actions

In addition to the general contextual menu actions in the **Data Source Explorer** view, the resource level nodes in PostgreSQL connections include the following additional contextual menu action:

Resource Level Nodes

Compare

Compares two selected resources.

Berkeley DB XML Database Connections

Oxygen XML Editor plugin includes support for Berkeley DB XML database connections. Oxygen XML Editor plugin allows you to browse the structure of a Berkeley DB XML database in the **Data Source Explorer** view and perform various operations on the resources in the repository.

Oracle Berkeley DB XML is an open source, embeddable XML database with XQuery-based access to documents stored in containers and indexed based on their content. It is built on top of the Oracle Berkeley DB and inherits its features and attributes, along with native XML support. A detailed description can be found at: http://www.oracle.com/us/products/database/berkeley-db/xml/overview/index.html.

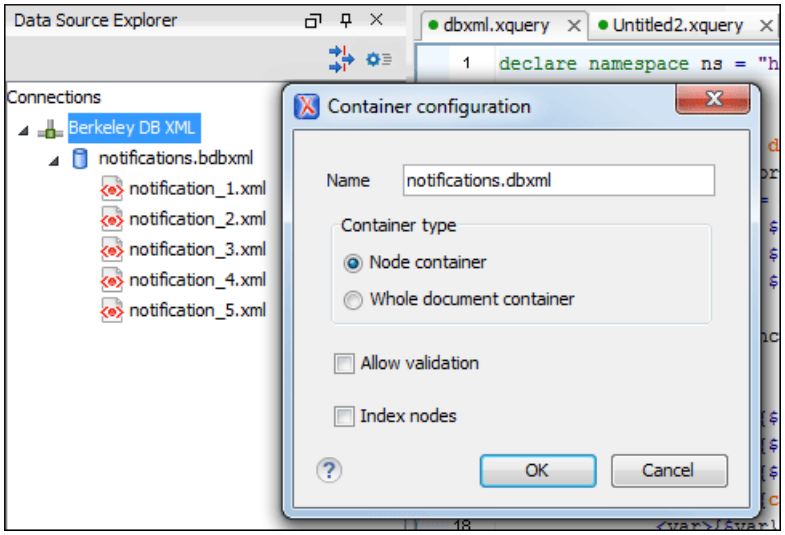


Figure 603: Berkeley DB XML Connection

Configuring a Berkeley DB XML Database Connection

Follow this procedure to configure the support for a Berkeley DB XML database:

1. Configure Berkeley DB XML *Data Source* drivers.
2. Configure a Berkeley DB XML *Connection*.
3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure Berkeley DB XML Data Source Drivers

For this procedure, you need to already have a Berkeley DB XML database installed on your system.

Oxygen XML Editor plugin supports Berkeley DB XML versions 2.3.10, 2.4.13, 2.4.16 & 2.5.16. To configure a data source for a Berkeley DB XML database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Data Sources** panel.
3. Enter a unique name for the data source.
4. Select *Berkeley DBXML* from the driver **Type** drop-down menu.
5. Click the **Add Files** button to add the Berkeley DB driver files.

   The driver files for the Berkeley DB database (and their locations) are as follows:

- `db.jar` (check for it in `[DBXML_DIR]/lib` or `[DBXML_DIR]/jar`)
- `dbxml.jar` (check for it in `[DBXML_DIR]/lib` or `[DBXML_DIR]/jar`)

Where `[DBXML_DIR]` is the Berkeley DB XML database root directory. For example, in Windows it is: `C:\Program Files\Oracle\Berkeley DB XML <version>`.

6. Click the **OK** button to finish the data source configuration.
7. Continue on to configure your Berkeley DB XML connection.

How to Configure a Berkeley DB XML Connection

Oxygen XML Editor plugin supports Berkeley DB XML versions 2.3.10, 2.4.13, 2.4.16 & 2.5.16. To configure a connection to a Berkeley DB XML database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select a previously configured Berkeley data source from the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Set the path to the Berkeley DB XML `database` directory in the **Environment home directory field**. Use a directory with write access. DO NOT use the installation directory where Berkeley DB XML is installed if you do not have write access to that directory.
   b) Select the **Verbosity** level: *DEBUG*, *INFO*, *WARNING*, or *ERROR*.
   c) Optionally, you can select the **Join existing environment** checkbox.

      If selected, an attempt is made to join an existing environment in the specified home directory and all the original environment settings are preserved. If that fails, try reconfiguring the connection with this option unchecked.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Berkeley DB XML Contextual Menu Actions

While browsing Berkeley DB XML connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

New Collection

Opens a **Container configuration** dialog box that allows you to adds a new container in the repository.

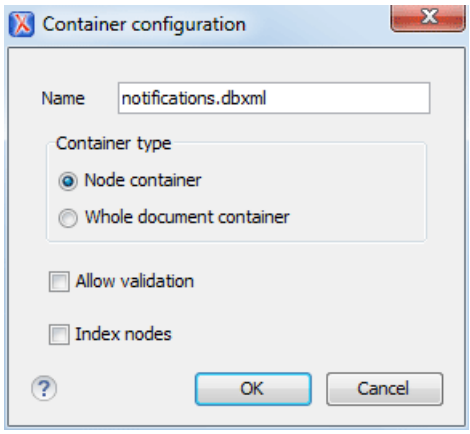


Figure 604: Container Configuration Dialog Box

This dialog box allows you to configure the following:

- **Name** - The name of the new container.
- **Container type** - At creation time, every container must have a type defined for it. This container type identifies how XML documents are stored in the container. As such, the container type can only be determined at container creation time. You cannot change it when subsequent container opens. You can select one of the following types:
  - **Node container** - XML documents are stored as individual nodes in the container. Each record in the underlying database contains a single leaf node, its attributes and attribute values (if any), and its text nodes (if any). Berkeley DB XML also keeps the information it requires to reassemble the document from the individual nodes stored in the underlying databases. This is the default selection and is the preferred container type.
  - **Whole document container** - The container contains entire documents. The documents are stored without any manipulation of line breaks or whitespace.
- **Allow validation** - If selected, documents will be validated when they are loaded into the container. The default behavior is to not validate documents.
- **Index nodes** - If selected, indices for the container will return nodes rather than documents. The default is to index at the document level. This property has no meaning if the container type is **Whole document container**.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Container Level Nodes

Import Files

Allows you to add a new file on the connection, in the current folder.

Export

Allows you to export the folder on the remote connection to a local folder.

Cut

Removes the current selection and places it in the clipboard.

Paste

Pastes the copied selection.

Rename

Renames the current resource

Delete

Deletes the current container.

Edit indices

Opens a **Container Indices** dialog box that allows you to configure indices properties for the selected Berkeley container.

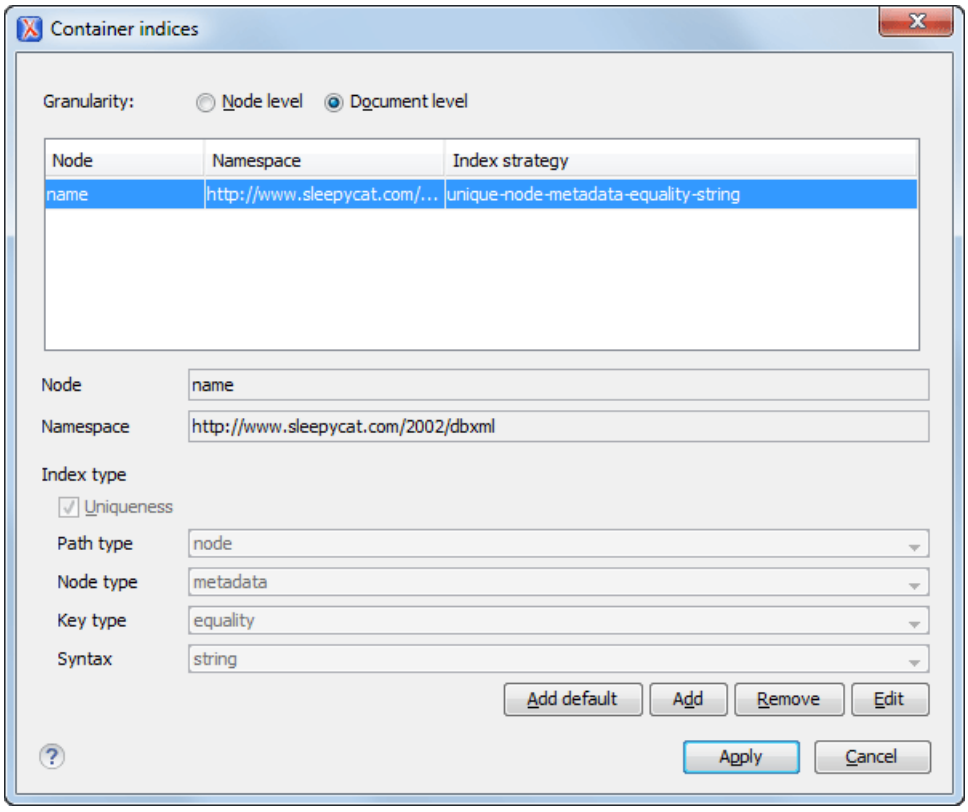


Figure 605: Container Indices Dialog Box

This dialog box allows you to configure the following properties:

- **Granularity** - A measure of the level of details of your data in the database. You can select one of the following:
  - **Document level** - Good option for retrieving large documents.
  - **Node level** - Good option for retrieving nodes from within documents.
- **Node** - The name of the node.
- **Namespace** - The index namespace.
- **Index type**:
  - **Uniqueness** - Indicates whether or not the indexed value must be unique within the container.
  - **Path type** - Drop-down menu that allows you to select from the following:
    - **node** - Indicates that you want to index a single node in the path.
    - **edge** - Indicates that you want to index the portion of the path where two nodes meet.
  - **Node type** - Drop-down menu that allows you to select from the following:
    - **element** - An element node in the document content.
    - **attribute** - An attribute node in the document content.
    - **metadata** - A node found only in the metadata content of a document.
  - **Key type** - Drop-down menu that allows you to select from the following:
    - **equality** - Improves the performances of tests that look for nodes with a specific value.
    - **presence** - Improves the performances of tests that look for the existence of a node regardless of its value.

- **substring** - Improves the performance of tests that look for a node whose value contains a given sub-string.
- **Syntax** - The syntax describes the type of data the index contains and is mostly used to determine how indexed values are compared. The default value is `string`.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Cut

Removes the current selection and places it in the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

Debugging with Berkeley DB XML

The Berkeley DB XML database added a debugging interface starting with version 2.5. The current version is supported in the Oxygen XML Editor plugin XQuery Debugger. The same restrictions and peculiarities apply for the Berkeley debugger as for the MarkLogic debugger.

eXist Database Connections

Oxygen XML Editor plugin includes support for eXist database connections. Oxygen XML Editor plugin allows you to browse the structure of a eXist database in the **Data Source Explorer** view and perform various operations on the resources in the repository.

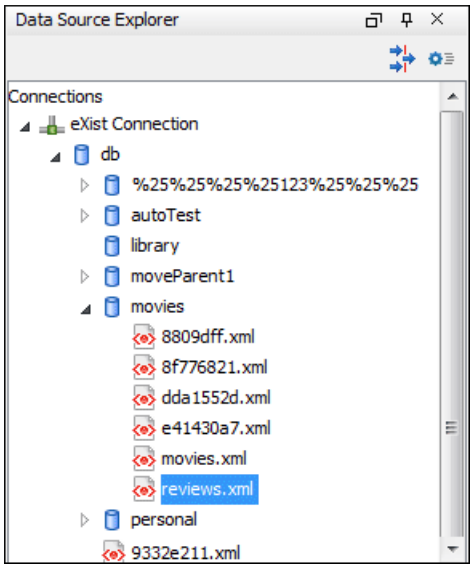


Figure 606: eXist Database Connection

Configuring an eXist Database Connection

There are two ways to configure the support for an eXist database:

- Use the dedicated **Create eXist-db XML connection** wizard.
  1. Open the **Preferences** dialog box , go to **Data Sources** and click the **Create eXist-db XML connection** link.
  2. Enter your connection details in the connection wizard and click **OK**.

     Important: To create an eXist connection using this wizard, Oxygen XML Editor plugin expects the `exist/webstart/exist.jnlp` path to be accessible at the provided **Host** and **Port**.
  3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.
- Use the **Data Sources** preferences page to configure your connection.
  1. Configure eXist *Data Source* drivers.
  2. Configure an eXist *Connection*.
  3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure eXist Data Source Drivers

For this procedure, you need to already have an eXist database server installed.

Oxygen XML Editor plugin supports eXist database server versions up to and including version 3.0. To configure a data source for an eXist database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Data Sources** panel.
3. Enter a unique name for the data source.
4. Select *eXist* from the driver **Type** drop-down menu.
5. Click the **Add Files** button to add the eXist driver files.

   The following driver files should be added and they are found in the installation directory of the eXist database server. Make sure you copy the files from the installation of the eXist server where you want to connect from Oxygen XML Editor plugin.

   eXist 3.x

   - `exist.jar`
   - `lib/core/xmldb.jar`
   - `lib/core/xmlrpc-client-3.1.x.jar`

- `lib/core/xmlrpc-common-3.1.x.jar`
- `lib/core/ws-commons-util-1.0.x.jar`
- `lib/core/slf4j-api-1.x.x.jar` (if available)
- `lib/core/slf4j-log4j12-1.x.x.jar` (if available)

eXist 4.x

- `exist.jar`
- `lib/core/log4j-api-*.jar`
- `lib/core/log4j-jul-*.jar`
- `lib/core/log4j-slf4j-impl-*.jar`
- `lib/core/slf4j-api-*.jar`
- `lib/core/ws-commons-util-*.jar`
- `lib/core/xmldb.jar`
- `lib/core/xmlrpc-client-*.jar`
- `lib/core/xmlrpc-common-*.jar`

The `*` represents the version number.

6. Click the **OK** button to finish the data source configuration.
7. Continue on to configure your eXist connection.

   For more information about running XQuery against an eXist XML database, watch our video demonstration:

   https://www.youtube.com/embed/Yoc5h1zSddA

How to Configure an eXist Connection

To configure a connection to an eXist database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select a previously configured eXist data source from the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Set the URI to the installed eXist engine in the **XML DB URI** field.
   b) Set the user name in the **User** field.
   c) Set the password in the **Password** field.
   d) Enter the start collection in the **Collection** field.

   eXist organizes all documents in hierarchical collections. Collections are like directories. They are used to group related documents together. This text field allows the user to set the default collection name.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

   For more information about running XQuery against an eXist XML database, watch our video demonstration:

   https://www.youtube.com/embed/Yoc5h1zSddA

eXist Contextual Menu Actions

While browsing eXist database connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

Refresh

Performs a refresh on the selected node.

Container Level Nodes

New File

Creates a new file on the connection, in the current folder.

New Collection

Creates a new collection on the connection.

Import Folders

Imports folders on the server.

Import Files

Allows you to add a new file on the connection, in the current folder.

Export

Allows you to export the folder on the remote connection to a local folder.

Cut

Removes the current selection and places it in the clipboard.

Paste

Pastes the copied selection.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Save As

Allows you to save the selected resource as a file on disk.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

MarkLogic Database Connections

Oxygen XML Editor plugin Enterprise edition includes support for MarkLogic database connections. Once you configure a MarkLogic connection, you can use the **Data Source Explorer** view to display all the application servers that are configured on the MarkLogic server. You can expand each application server and view all of its configured modules, and the **Data Source Explorer** view allows you to open and edit these modules.

Note: To browse modules located in a database, directory properties must be associated with them. These directory properties are generated automatically if the *directory creation* property of the database is set to automatic. If this property is set to **manual** or **manual-enforced**, add the directory properties of the modules manually, using the XQuery function `xdmp:directory-create()`. For example, for two documents with the `/code/modules/main.xqy` and `/code/modules/imports/import.xqy` IDs, run the following query:

```
(xdmp:directory-create('/code/modules/'), xdmp:directory-create('/code/modules/imports/'))
```

For more information about directory properties, go to: http://blakeley.com/blogofile/2012/03/19/directory-assistance/.

MarkLogic and XQuery

MarkLogic connections can be used in conjunction with XQuery scripts to debug and solve problems with XQuery transformations. XQuery modules can also be validated using a MarkLogic server to allow to you to spot possible issues without the need of actually executing the XQuery script.

When debugging XQuery files with MarkLogic, you can use the **Data Source Explorer** view to open the files from the application server that is involved in the debugging process. By using the **Data Source Explorer** view, any imported modules are better identified by the MarkLogic server. You can also use step actions and breakpoints in the modules to help identify problems.

Modules Container

For each Application server (for example: *Bill (HTTP port:8060)*), you have access to the XQuery modules that are visible to that server. When editing, executing, or debugging XQuery it is recommended to open the XQuery files from this **Modules** container.

Note: You can also manage resources for a MarkLogic database through a WebDAV connection, although it is not recommended if you work with XQuery files since imported modules may not be resolved correctly.

Requests Container

Each MarkLogic application server includes a **Requests** container. In this container, Oxygen XML Editor plugin displays both queries that are stopped for debugging purposes and queries that are still running. To clean up the entire **Requests** container at the end of your session, right-click it and use the **Cancel all requests** action.

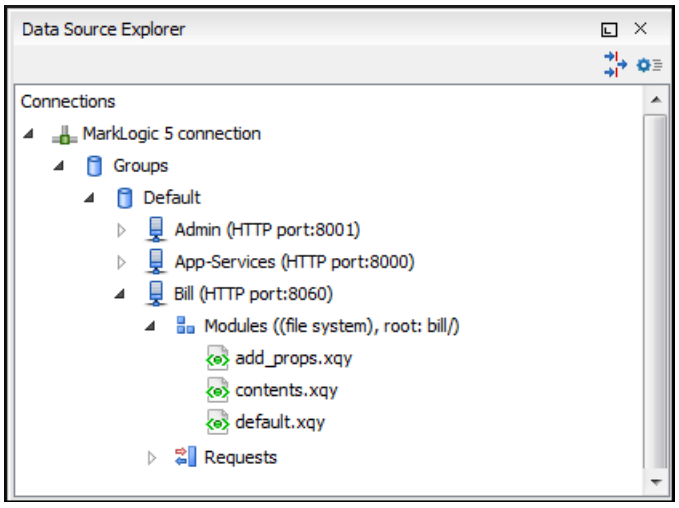


Figure 607: MarkLogic Connection in Data Source Explorer

Configuring a MarkLogic Database Connection

Note that this feature is available in Oxygen XML Editor plugin Enterprise edition only.

Follow this procedure to configure the support for a MarkLogic database connection:

1. Download the MarkLogic driver from MarkLogic Community site.
2. Configure MarkLogic *Data Source* drivers.
3. Configure a MarkLogic *Connection*.
4. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Related Information:

MarkLogic Development in Oxygen XML Editor plugin on page 1167

How to Configure MarkLogic Data Source Drivers

Available in the Enterprise edition only.

Note: Oxygen XML Editor plugin supports MarkLogic version 4.0 or later.

To configure a data source for MarkLogic, follow this procedure:

1. Download the **XCC Java distribution** zip file from: http://developer.marklogic.com/products/xcc.
2. Unzip the downloaded archive.
3. Open the **Preferences** dialog box and go to **Data Sources**.
4. Click the **New** button in the **Data Sources** panel.
5. Enter a unique name for the data source.
6. Select *MarkLogic* from the driver **Type** drop-down list.
7. Click the **Add Files** button and select the MarkLogic driver file from the `lib` folder of the archive that you downloaded and unzipped. The driver file name is `marklogic-xcc-{server_version}.jar`, where *{server_version}* is the MarkLogic server version.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure your MarkLogic Connection.

How to Configure a MarkLogic Connection

Available in the Enterprise edition only.

Note: Oxygen XML Editor plugin supports MarkLogic version 4.0 or later.

To configure a connection to a MarkLogic database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.

2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select a previously configured MarkLogic data source from the **Data Source** drop-down menu.
5. Enter the connection details.
   a) The host name or IP address of the installed MarkLogic engine in the **XDBC Host** field.

      Oxygen XML Editor plugin uses XCC connector to interact with MarkLogic XDBC server and requires the basic authentication schema to be set. Starting with version MarkLogic 4.0 the default authentication method when you create an HTTP or WebDAV Server is *digest*, so make sure to change it to *basic*.
   b) Set the port number of the MarkLogic engine in the **Port** field. A MarkLogic XDBC application server must be configured on the server on this port. This XDBC server will be used to process XQuery expressions against the server. Later, if you want to change the XDBC server, instead of editing the configuration just use the **Use it to execute queries** action from Data Source Explorer.
   c) Set the user name to access the MarkLogic engine in the **User** field.
   d) Set the password to access the MarkLogic engine in the **Password** field.
   e) Optionally, in the **WebDAV URL** field, set the URL used for browsing the MarkLogic database in the **Data Source Explorer** view.

      The **Database** field specifies the database for which the XQuery expressions are executed. If you set this option to default, the database associated to the application server of the configured port is used.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

MarkLogic Development in Oxygen XML Editor plugin

The Oxygen XML Editor plugin support for MarkLogic includes features designed for developers, such as debugging XQuery transformations, remote and collaborative debugging, XQuery editing and validation, and an XQuery builder that helps to improve productivity.

Working with XQuery Files

MarkLogic supports working with XQuery files to create queries over stored XML content. You can open an XQuery file, configure a transformation scenario to match your MarkLogic connection, write the XQuery, and then execute it.

When editing XQuery modules stored on the MarkLogic server, the **Outline** view collects and displays all the functions from all imported modules. The *Content Completion Assistant* also presents all of these functions along with the latest built-in XQuery functions in accordance with the server version.

When developing queries for MarkLogic, it is best to open the resources from the **Data Source Explorer** view. When you execute or debug XQuery files opened from this view, imported modules can be resolved better by the MarkLogic server. Another advantage is that validation is automatically performed on the MarkLogic server, including any imported modules.

XQuery Debugging

Oxygen XML Editor plugin allows you to use MarkLogic connections to debug real applications that use XQuery (for example, web applications that trigger XQuery executions). By setting the server in debug mode, you can intercept all the XQuery scripts that run on that server. Oxygen XML Editor plugin connects to the MarkLogic server, shows you the running XQuery scripts, and allows you to debug them. The remote debugging support also allows you to debug collaboratively. Multiple users can participate in the same debugging session. You can start a debugging session and another user can continue it, and vice versa.

Working with Modules

MarkLogic has a concept of two types of XQuery modules, *library* and *main* modules. A *library* module is used to define functions. Library modules cannot be evaluated directly. They are imported, either from other library modules or from main modules. A *main* module is used as an entry point that can be executed as an XQuery program. For more information on these types of modules, see XQuery Library Modules and Main Modules.

When working with *library* modules, you need to create a validation scenario and associate it with the module. In the validation scenario you need to specify a main module as the entry point for validation. The modules need to be deployed on a MarkLogic server because Oxygen XML Editor plugin will request the server to validate the modules.

To validate *library* modules stored on a MarkLogic server, follow these steps:

1. Configure a MarkLogic database connection.
2. Expand the MarkLogic connection in the **Data Source Explorer** view and open the *library* modules. The *main* module must also be opened from the **Data Source Explorer** view.
3. Configure a validation scenario for each *library* module. Specify the *main* module in the **URL of the file to validate** field.

   Result: Validation is done on the server that contains the *main* module. The *main* module and all other *library* modules involved in the validation must be saved. Otherwise, the server will validate what was saved on the server, without the uncommitted changes. Also, the *Content Completion Assistant* and the **Outline** view should now present the functions from all the modules.

Related Information:

Debugging with MarkLogic on page 1168
Configuring a MarkLogic Database Connection on page 1166

Debugging with MarkLogic

Oxygen XML Editor plugin includes support for debugging XQuery transformations that are executed against a MarkLogic database.

To use a debugging session against the MarkLogic engine, follow these steps:

1. Configure a MarkLogic data source and a MarkLogic connection.
2. Make sure that the debugging support is enabled in the MarkLogic server that Oxygen XML Editor plugin accesses. On the server side, debugging must be activated in the XDBC server and in the *Task Server* section of the server control console (the switch *debug allow*). If the debugging is not activated, the MarkLogic server reports a **DBG-TASKDEBUGALLOW** error.

   Note: An XDBC application server must be running to connect to the MarkLogic server and this XDBC server will be used to process XQuery expressions against the server. You can change the XDBC application server that Oxygen XML Editor plugin uses to process XQuery expressions by selecting the **Use it to execute queries** action from the contextual menu in the **Data Source Explorer** view.
3. Open the XQuery file and start the debugging process.
   - If you want to debug an XQuery file stored on the MarkLogic server, we recommend you to use the **Data Source Explorer** view and open the file from the application server that is involved in the debugging process. This improves the resolving of any imported modules.
   - The MarkLogic XQuery debugger integrates seamlessly into the XQuery Debugger *perspective*. If you have a MarkLogic validation scenario configured for the XQuery file, you can choose to debug the scenario directly.
   - Otherwise, switch to the **XQuery Debugger** *perspective*, open the XQuery file in the editor, and select the MarkLogic connection in the XQuery engine selector from the debug control toolbar.

     For general information about how a debugging session is started and controlled, see the Working with the Debugger section.

     Note: Before starting a debugging session, it is recommend that you link the MarkLogic connection with an Eclipse project. To do this, go to the **Data Source Explorer** view and select **Link to project** in the contextual menu of the MarkLogic connection. The major benefit of linking a debugging session with a project is that you can add *breakpoints* in the XQuery modules stored on the server. You are also able to access these modules from the Eclipse **Navigator** view and run debugging sessions from them.

In a MarkLogic debugging session, you can use step actions and *breakpoints* to help identify problems. When you add a *breakpoint* on a line where the debugger never stops, Oxygen XML Editor plugin displays a warning message. These warnings are displayed for *breakpoints* you add either in the main XQuery (which you can open locally or from the server) or for *breakpoints* you add in any XQuery that is opened from the connection that

participates in the debugging session. For more information, see Using Breakpoints for Debugging Queries that Import Modules with MarkLogic on page 1169.

Remote Debugging with MarkLogic

Oxygen XML Editor plugin allows you to debug remote applications that use XQuery (for example, web applications that trigger XQuery executions). Oxygen XML Editor plugin connects to a MarkLogic server, shows you the running XQuery scripts and allows you to debug them. You can even pause the scripts so that you can start the debugging queries in the exact context of the application. You can also switch a server to debug mode to intercept all XQuery scripts.

Oxygen XML Editor plugin also supports collaborative debugging. This feature allows multiple users to participate in the same debugging session. You can start a debugging session and at a certain point, another user can continue it.

Important: When using the remote debugging feature, the HTTP and the XDBC servers involved in the debugging session must have the same module configuration.

For more information about the XQuery debugger for MarkLogic, watch our video demonstration:

https://www.youtube.com/embed/eQ4ThDZq1bk

Related Information:

MarkLogic Development in Oxygen XML Editor plugin on page 1167
Configuring a MarkLogic Database Connection on page 1166

Using Breakpoints for Debugging Queries that Import Modules with MarkLogic

When debugging queries that imports modules stored in the database, it is recommended to place *breakpoints* in the modules. When starting a new debugging session, make sure that the modules that you will debug are already opened in the editor. This is necessary so that the *breakpoints* in all the modules will be considered. Also, make sure that there are no other opened modules that are not involved in the current debugging session.

To place *breakpoints* in the modules, use the following procedure:

1. In the **Data Source Explorer** view, open all the modules from the **Modules** container of the XDBC application server that performs the debugging.
2. Set *breakpoints* in the module as needed.
3. Continue debugging the query.

If you get a warning that the *breakpoints* failed to initialize, try the following solutions:

- Check the **Breakpoints** view and make sure there are no older *breakpoints* (set on resources that are not part of the current debugging context).
- Make sure you open the modules from the context of the application server that does the debugging and place *breakpoints* there.

Related Information:

MarkLogic Database Connections on page 1165
MarkLogic Development in Oxygen XML Editor plugin on page 1167

Peculiarities and Limitations of the MarkLogic Debugger

MarkLogic debugger has the following peculiarities and limitations:

- Debugging support is only available for MarkLogic server versions 4.0 or newer.
- For MarkLogic server versions 4.0 or newer, there are three XQuery syntaxes that are supported: *'0.9-ml' (inherited from MarkLogic 3.2)*, *'1.0-ml'*, and *'1.0'*.
- All declared variables are presented as strings. The **Value** column of the **Variables** view contains the expression from the variable declaration. It can be evaluated by copying the expression with the **Copy value** action from the contextual menu of the **Variables** view and pasting it in the **XWatch** view.
- There is no support for output to source mapping.
- There is no support for showing the trace.

- You can only set breakpoints in imported modules in one of the following cases:
  - When you open the module from the context of the application server involved in the debugging, using the **Data Source Explorer** view.
  - When the debugger automatically opens the modules in the Editor.
- No *breakpoints* are set in modules from the same server that are not involved in the current debugging session.
- No support for profiling when an XQuery transformation is executed in the debugger.

MarkLogic Contextual Menu Actions

While browsing MarkLogic connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

Link to Project

Links the connection to a project. This is helpful for MarkLogic debugging sessions.

Refresh

Performs a refresh on the selected node.

Container Level Nodes

Enable Debug Mode

Switches the server to a debugging mode. For more information, see MarkLogic debugging sessions.

Use it to Execute Queries

The server will be used to process XQuery expressions against it.

Refresh

Performs a refresh on the selected node.

Module or Folder Level Nodes

Export

Allows you to export the folder on the remote connection to a local folder.

Refresh

Performs a refresh on the selected node.

Requests Level Nodes

Refresh

Performs a refresh on the selected node.

Cancel all requests

Cancels all queries that are either running or stopped on the application server. You can use this action to clean up the entire **Requests** container at the end of your sessions.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default

application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Refresh

Performs a refresh on the selected node.

Compare

Compares two selected resources.

Related Information:

Configuring a MarkLogic Database Connection on page 1166
MarkLogic Development in Oxygen XML Editor plugin on page 1167
Debugging with MarkLogic on page 1168

Documentum xDB (X-Hive/DB) 10 Database Connections [Deprecated]

Oxygen XML Editor plugin includes support for Documentum xDB (X-Hive/DB) 10 database connections. Oxygen XML Editor plugin allows you to browse the structure of a Documentum xDB (X-Hive/DB) 10 database in the **Data Source Explorer** view and perform various operations on the resources in the repository.

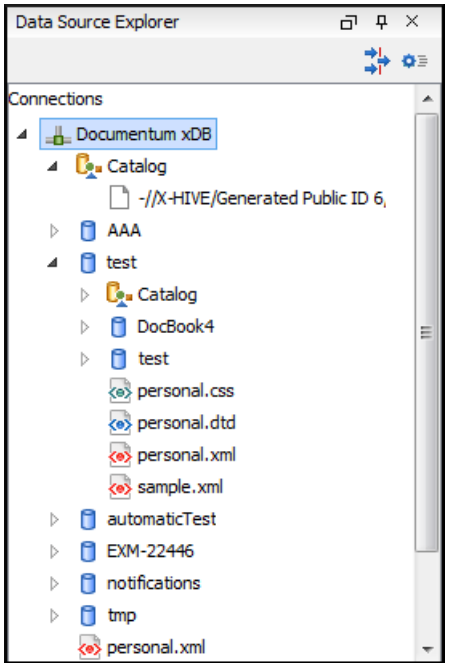


Figure 608: Documentum xDB (X-Hive/DB) 10 Connection

Configuring a Documentum xDB (X-Hive/DB) 10 Database Connection [Deprecated]

Follow this procedure to configure the support for a Documentum xDB (X-Hive/DB) 10 database:

1. Configure Documentum xDB *Data Source* drivers.
2. Configure a Documentum xDB *Connection*.
3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure Documentum xDB (X-Hive/DB) 10 Data Source Drivers [Deprecated]

Available in the Enterprise edition only. For this procedure, you need to already have a Documentum xDB server installed.

To configure a data source for Documentum xDB (X-Hive/DB) 10, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Data Sources** panel.
3. Enter a unique name for the data source.
4. Select *Documentum xDB* from the driver **Type** drop-down menu.
5. Click the **Add** button to add the driver files.

   The driver files for the Documentum xDB (X-Hive/DB) 10 database are found in the Documentum xDB (X-Hive/DB) 10 lib directory from the server installation folder:

   - `antlr-runtime.jar`
   - `aspectjrt.jar`
   - `icu4j.jar`
   - `xhive.jar`
   - `google-collect.jar`
6. Click the **OK** button to finish the data source configuration.
7. Continue on to configure your Documentum xDB (X-Hive/DB) 10 connection.

How to Configure an Documentum xDB (X-Hive/DB) 10 Connection [Deprecated]

To configure a connection to a Documentum xDB (X-Hive/DB) 10 database, follow these steps:

Note: The bootstrap type of X-Hive/DB connections is not supported in Oxygen XML Editor plugin. The following procedure explains the `xhive://` protocol connection type.

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select a previously configured data source from the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Set the URL property of the connection in the **URL** field.

      If the property is a URL of the form *xhive://host:port*, the Documentum xDB (X-Hive/DB) 10 connection will attempt to connect to a Documentum xDB (X-Hive/DB) 10 server running behind the specified TCP/IP port.
   b) Set the user name to access the Documentum xDB (X-Hive/DB) 10 engine in the **User** field.
   c) Set the password to access the Documentum xDB (X-Hive/DB) 10 engine in the **Password** field.
   d) Set the name of the database to access from the Documentum xDB (X-Hive/DB) 10 engine in the **Database** field.
   e) Select the **Run XQuery in read / write session (with committing)** checkbox if you want to end the session with a commit. Otherwise, the session ends with a rollback.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Documentum xDB (X-Hive/DB) 10 Contextual Menu Actions [Deprecated]

While browsing Documentum xDB (X-Hive/DB) 10 connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

Add Library

Allows you to add a new library.

Insert XML Instance

Allows you to add a new XML resource directly into the database root. See Documentum xDB (X-Hive/DB) 10 Parser Configuration for more details.

Insert non-XML Instance

Allows you to add a new non-XML resource directly in the database root.

Refresh

Performs a refresh on the selected node.

Catalog Level Nodes

Add AS Models

Allows you to add a new abstract schema model to the selected catalog.

Export

Allows you to export the folder on the remote connection to a local folder.

Set Default Schema

Allows you to set a default DTD to be used for parsing. It is not possible to set a default XML Schema.

Clear Default Schema

Allows you to clear the default DTD. The action is available only if there is a DTD set as default.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Container (Library) Level Nodes

New File

Creates a new file on the connection, in the current folder.

Add Library

Allows you to add a new library.

Import Folders

Imports folders on the server.

Add Local Catalog

Adds a catalog to the selected library. By default, only the root-library has a catalog, and all models are stored there.

Insert XML Instance

Allows you to add a new XML resource directly into the database root. See Documentum xDB (X-Hive/DB) 10 Parser Configuration for more details.

Insert non-XML Instance

Allows you to add a new non-XML resource directly in the database root.

Export

Allows you to export the folder on the remote connection to a local folder.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Paste

Pastes the copied selection.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Save As

Allows you to save the selected resource as a file on disk.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Add AS model

Allows you to add an XML schema to the selected XML resource.

Set AS model

Allows you to set an active AS model for the selected XML resource.

Clear AS model

Allows you to clear the active AS model of the selected XML resource.

Properties

Displays the resource properties. Available only for XML resources.

Set Default Schema

Allows you to set the selected DTD to be used as default for parsing. The action is available only for DTD.

Clear Default Schema

Allows you to unset the selected DTD. The action is available only if the selected DTD is the current default to be used for parsing.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Compare

Compares two selected resources.

Documentum xDB (X-Hive/DB) 10 Parser Configuration for Adding XML Instances [Deprecated]

When an XML instance document is added to a Documentum xDB (X-Hive/DB) 10 connection or library, it is parsed with an internal XML parser of the database server. The following options are available for configuring this parser:

- DOM Level 3 parser configuration parameters. More about each parameter can be found here: DOM Level 3 Configuration.
- Documentum xDB (X-Hive/DB) 10 specific parser parameters (for more information, consult the Documentum xDB (X-Hive/DB) 10 manual):
  - **xhive-store-schema** - If selected, the corresponding DTD or XML schemas are stored in the catalog during validated parsing.
  - **xhive-store-schema-only-internal-subset** - Stores only the internal sub-set of the document (not an external sub-set). This option modifies the **xhive-store-schema** (only has a function when that parameter is set to true, and when a DTD is involved). Select this option if you only want to store the internal sub-set of the document (not the external sub-set).
  - **xhive-ignore-catalog** - Ignores the corresponding DTD and XML schemas in the catalog during validated parsing.
  - **xhive-psvi** - Stores **psvi** information about elements and attributes. Documents parsed with this feature turned on give access to **psvi** information and enable support of data types by XQuery queries.
  - **xhive-sync-features** - With this convenience setting turned on, parameter settings of **XhiveDocumentIf** are synchronized with the parameter settings of **LSParser**. Note that parameter settings **xhive-psvi** and **schema-location** are always synchronized.

Troubleshooting Documentum xDB [Deprecated]

Question:

I am able to access my XML Database in the **Data Source Explorer** and open files for reading but when I try to save changes to a file back into the database, I receive the following error: **"Cannot save the file. DTD factory class org.apache.xerces.impl.dv.dtd.DTDDVFactoryImpl does not extend from DTDDVFactory"**. How can I fix this?

Answer:

`xhive.jar` contains a MANIFEST.MF with a classpath:

```
Class-Path: core/antlr-runtime.jar core/aspectjrt.jar core/fastutil-shrinked.jar
    core/google-collect.jar core/icu4j.jar core/lucene-regex.jar core/lucene.jar
    core/serializer.jar core/xalan.jar core/xercesImpl.jar
```

Since the driver was configured to use `xhive.jar` directly from the *xDB* installation (where many other *JARS* are located), `core/xercesImpl.jar` from the *xDB* installation directory is loaded even though it is not specified in the list of *JARS* from the data source driver configuration (it is in the classpath from `xhive.jar` - `MANIFEST.MF`). A simple workaround for this issue is to copy **ONLY** the *JAR* files used in the driver configuration to a separate folder and configure the data source driver to use them from there.

MySQL Database Connections

Oxygen XML Editor plugin includes support for MySQL database connections. Oxygen XML Editor plugin allows you to browse the structure of a SQL Server database in the **Data Source Explorer** view, open tables in the **Table Explorer** view, and perform various operations on the resources in the repository.

Configuring a MySQL Database Connection

To configure the support for a MySQL database, follow this procedure:

1. Configure MySQL *Data Source* drivers.
2. Configure a MySQL *Connection*.

3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure MySQL Data Source Drivers

To connect to a MySQL server, you need to create a generic JDBC type data source based on the MySQL JDBC driver available on the MySQL website.

To configure this data source, follow these steps:

1. Go to https://www.oxygenxml.com/database_drivers.html and download the appropriate MySQL driver.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.

   The dialog box for configuring a data source is opened.

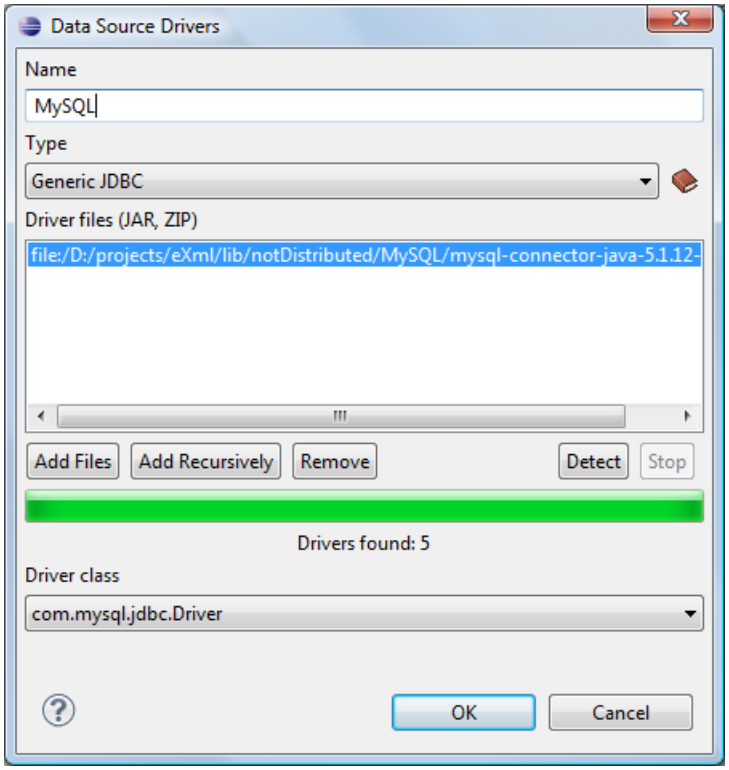


Figure 609: Data Source Drivers Configuration Dialog Box

4. Enter a unique name for the data source.
5. Select *Generic JDBC* in the driver **Type** drop-down list.
6. Click the **Add Files** button and select the MySQL driver file that you downloaded.
   The driver file for the MySQL server is called `mysql-com.jar`.
7. Select the most appropriate **Driver class**.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure your MySQL connection.

How to Configure a MySQL Connection

To configure a connection to a MySQL server, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.

   The dialog box for configuring a database connection is displayed.

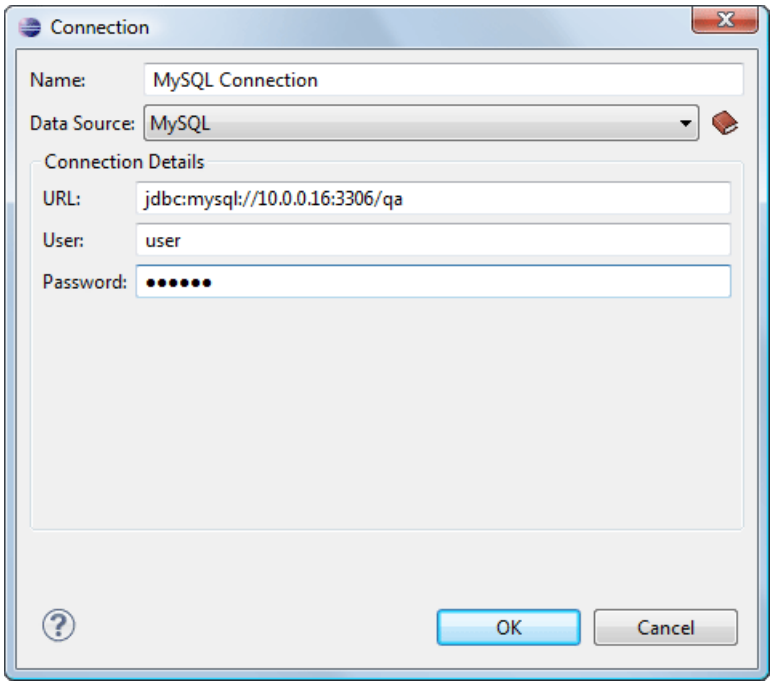


Figure 610: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select the *MySQL* data source in the **Data Source** drop-down list.
5. Enter the connection details.
   a) Enter the URL of the MySQL server.
   b) Enter the user name for the connection to the MySQL server.
   c) Enter the password for the connection to the MySQL server.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

Generic JDBC Database Connections

Oxygen XML Editor plugin includes support for Generic JDBC database connections.

Configuring a Generic JDBC Database Connection

To configure the support for a generic JDBC database, follow this procedure:

1. Configure Generic JDBC *Data Source* drivers.
2. Configure a Generic JDBC *Connection*.
3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure Generic JDBC Data Source Drivers

Starting with version 17, Oxygen XML Editor plugin comes bundled with Java 8, which does not provide built-in access to JDBC-ODBC data sources. To access such sources, you need to find an alternative JDBC-ODBC bridge or use a platform-independent distribution of Oxygen XML Editor plugin along with a Java VM version 7 or 6.

To configure a generic JDBC data source, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Data Sources** panel.
3. Enter a unique name for the data source.
4. Select *Generic JDBC* in the driver **Type** drop-down list.
5. Add the driver file(s) using the **Add Files** button.

6. Select the most appropriate **Driver class**.
7. Click the **OK** button to finish the data source configuration.
8. Continue on to configure a generic JDBC connection.

How to Configure a Generic JDBC Connection

To configure a connection to a generic JDBC database, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select the *Generic JDBC* data source in the **Data Source** drop-down menu.
5. Enter the connection details.
   a) Enter the URL of the generic JDBC database, with the following format:`jdbc: <subprotocol>: <subname>`.
   b) Enter the user name for the connection to the generic JDBC database.
   c) Enter the password for the connection to the generic JDBC database.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

JDBC-ODBC Database Connections

Oxygen XML Editor plugin includes support for JDBC-ODBC database connections.

How to Configure a JDBC-ODBC Connection

Starting with version 17, Oxygen XML Editor plugin comes bundled with Java 8, which does not provide built-in access to JDBC-ODBC data sources. To access such sources, you need to find an alternative JDBC-ODBC bridge or use a platform-independent distribution of Oxygen XML Editor plugin along with a Java VM version 7 or 6.

To configure a connection to an ODBC data source, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.

   The dialog box for configuring a database connection is displayed.

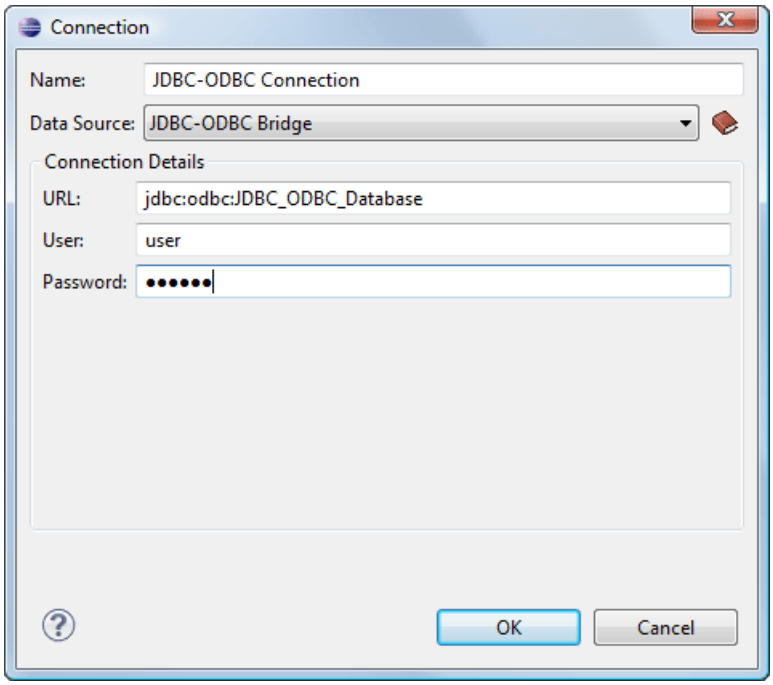


Figure 611: Connection Configuration Dialog Box

3. Enter a unique name for the connection.
4. Select *JDBC-ODBC Bridge* in the **Data Source** drop-down list.
5. Enter the connection details.
   a) Enter the URL of the ODBC source.
   b) Enter the user name of the ODBC source.
   c) Enter the password of the ODBC source.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

BaseX Database Connections

Oxygen XML Editor plugin includes support for BaseX database connections using a WebDAV connection. BaseX is a light-weight XML database engine and XQuery processor. Oxygen XML Editor plugin allows you to browse the structure of a BaseX database in the **Data Source Explorer** view and perform XQuery executions.

How to Configure a BaseX Connection

To configure a BaseX connection, follow these steps:

1. First of all, make sure the BaseX HTTP Server is started. For details about starting the BaseX HTTP server, go to http://docs.basex.org/wiki/Startup#BaseX_HTTP_Server. The configuration file for the HTTP server is named `.basex` and is located in the BaseX installation directory. This file helps you to find out which port the HTTP server using. The default port for BaseX WebDAV is 8984.
2. To ensure that everything is functioning, open a WebDAV URL inside a browser and check to see if it works. For example, the following URL retrieves a document from a database named TEST: `http://localhost:8984/webdav/TEST/etc/factbook.xml`.
3. Once you are sure that the BaseX WebDAV service is working, you can configure the WebDAV connection in Oxygen XML Editor plugin as described in How to Configure a WebDAV Connection on page 1182. The WebDAV URL should resemble this: `http://{hostname }:{port}/webdav/`. If the BaseX server is running on your own machine and it has the default configuration, the data required by the WebDAV connection is:
   - WebDAV URL: `http://localhost:8984/webdav`
   - User: `admin`

- Password: `admin`

4. Once the WebDAV connection is created, to view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

BaseX Contextual Menu Actions

While browsing BaseX connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

New Folder

Creates a new folder on the connection.

Import Files

Allows you to add a new file on the connection, in the current folder.

Refresh

Performs a refresh on the selected node.

Folder Level Nodes

New File

Creates a new file on the connection, in the current folder.

New Folder

Creates a new folder on the connection.

Import Folders

Imports folders on the server.

Import Files

Allows you to add a new file on the connection, in the current folder.

Export

Allows you to export the folder on the remote connection to a local folder.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Paste

Pastes the copied selection.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

Base X XQJ Connection

XQuery execution is possible in a BaseX connection through an XQJ connection.

Important: The XQJ connector is only capable of running XQuery 1.0 scrips, therefore XQuery 3.0 and 3.1 scripts are not supported.

BaseX XQJ Data Source

First of all, create an XQJ data source as described in How to Configure an XQJ Data Source on page 1182. The BaseX XQJ API-specific files that must be added in the configuration dialog box are `xqj-api-1.0.jar`, `xqj2-0.1.0.jar` and `basex-xqj-1.2.3.jar` (the version names of the *JAR* file may differ). These libraries can be downloaded from *xqj.net/basex/basex-xqj-1.2.3.zip*. As an alternative, you can also find the libraries in the BaseX installation directory, in the **lib** sub-directory.

BaseX XQJ Connection

The next step is to create an XQJ connection.

For a default BaseX configuration, the following connection details apply (you can modify them when necessary):

- **Port**: 1984
- **serverName**: localhost
- **user**: admin
- **password**: admin

XQuery Execution

Now that the XQJ connection is configured, open the XQuery file you want to execute in Oxygen XML Editor plugin and create an XQuery Transformation on page 974. In the **Transformer** drop-down menu, select the name of the XQJ connection you created. Apply the transformation scenario and the XQuery will be executed.

How to Configure an XQJ Data Source

Any transformer that offers an XQJ API implementation can be used when validating XQuery or transforming XML documents. An example of an XQuery engine that implements the XQJ API is Zorba.

1. If your XQJ Implementation is native, make sure the directory containing the native libraries of the engine is added to your system environment variables: to **PATH** - on Windows, to **LD_LIBRARY_PATH** - on Linux, or to **DYLD_LIBRARY_PATH** - on OS X. Restart Oxygen XML Editor plugin after configuring the environment variables.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.
4. Enter a unique name for the data source.
5. Select **XQuery API for Java (XQJ)** in the **Type** combo box.
6. Press the **Add** button to add XQJ API-specific files.

   You can manage the driver files using the **Add**, **Remove**, **Detect**, and **Stop** buttons.

   Oxygen XML Editor plugin detects any implementation of *javax.xml.xquery.XQDataSource* and presents it in **Driver class** field.
7. Select the most suited driver in the **Driver class** combo box.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure the XQJ connection.

How to Configure an XQJ Connection

The steps for configuring an XQJ connection are the following:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select one of the previously configured XQJ data sources in the **Data Source** combo box.
5. Fill-in the connection details.

   The properties presented in the connection details table are automatically detected depending on the selected data source.
6. Click the **OK** button to finish the connection configuration.

WebDAV Connections

Oxygen XML Editor plugin includes support for WebDAV server connections. Oxygen XML Editor plugin allows you to browse the structure of a WebDAV connection in the **Data Source Explorer** view and perform various operations on the resources in the repository.

How to Configure a WebDAV Connection

By default, Oxygen XML Editor plugin contains built-in data source drivers for **WebDAV** connections. Based on this data source, you can create a WebDAV connection for browsing and editing data from a database that provides a WebDAV interface. The connection is available in the **Data Source Explorer** view.

To configure a WebDAV connection, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select one of the WebDAV data sources in the **Data Source** drop-down menu.

5. Enter the connection details:
   a) Set the URL to the WebDAV repository in the field **WebDAV URL**.
   b) Set the user name that is used to access the WebDAV repository in the **User** field.
   c) Set the password that is used to access the WebDAV repository in the **Password** field.
6. Click the **OK** button to finish the connection configuration.
7. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

   For more information about the WebDAV support in Oxygen XML Editor plugin, watch our video demonstration:

   https://www.youtube.com/embed/vDXO36CqbvM

WebDAV Contextual Menu Actions

While browsing WebDAV connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources
Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect
Stops the connection.

New Folder
Creates a new folder on the connection.

Import Files
Allows you to add a new file on the connection, in the current folder.

Refresh
Performs a refresh on the selected node.

Folder Level Nodes

New File
Creates a new file on the connection, in the current folder.

New Folder
Creates a new folder on the connection.

Import Folders
Imports folders on the server.

Import Files
Allows you to add a new file on the connection, in the current folder.

Export
Allows you to export the folder on the remote connection to a local folder.

Cut
Removes the current selection and places it in the clipboard.

Copy
Copies the current selection into the clipboard.

Paste
Pastes the copied selection.

Rename
Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

SQL Execution Support

The database support in Oxygen XML Editor plugin includes support for writing SQL statements, syntax highlighting, *folding*, and dragging and dropping from the **Data Source Explorer** view. It also includes transformation scenarios for executing the statements, and the results are displayed in the **Table Explorer** view.

Drag and Drop from Data Source Explorer View

Dragging operations from the **Data Source Explorer** view and dropping them in the SQL Editor allows you to create SQL statements quickly by inserting the names of tables and columns in the SQL statements.

1. Configure a database connection (see the specific procedure for your database server in the Database Connection Support section).
2. Browse to the table you will use in your statement.
3. Drag the table or a column of the table into the editor where a SQL file is open.

   Drag and drop actions are available both on the table and on its fields. A pop-up menu is displayed in the SQL editor.

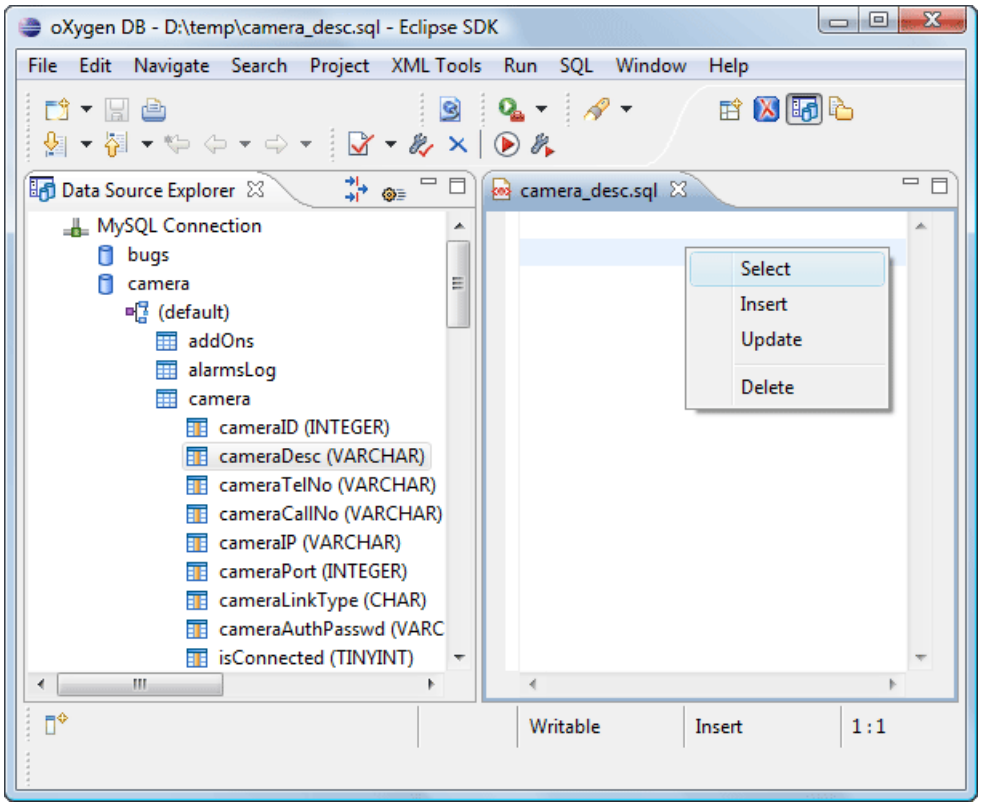


Figure 612: SQL Statement Editing with Drag and Drop

4. Select the type of statement from the pop-up menu.

   Depending on your choice, dragging a table results in one of the following statements being inserted into the document:

   - **SELECT `*field1*`,`*field2*`, ... FROM `*catalog*`. `*table*`** (for example: `SELECT` `` `DEPT`,`DEPTNAME`,`LOCATION` FROM `camera`.`cameraDesc` ``)
   - **UPDATE `*catalog*`. `*table*` SET `*field1*`=, `*field2*`=,....** (for example: `UPDATE` `` `camera`.`cameraDesc` SET `DEPT`=, `DEPTNAME`=, `LOCATION`= ``)
   - **INSERT INTO `*catalog*`. `*table*` (`*field1*`,`*field2*`, ...) VALUES (, ,)** (for example: `INSERT INTO` `` `camera`.`cameraDesc` (`DEPT`,`DEPTNAME`,`LOCATION`) VALUES (, , )) ``)
   - **DELETE FROM `*catalog*`. `*table*`** (for example: `DELETE FROM` `` `camera`.`cameraDesc` ``)

   Depending on your choice, dragging a column results in one of the following statements being inserted into the document:

   - **SELECT `*field*` FROM `*catalog*`. `*table*`** (for example: `SELECT` `` `DEPT` FROM `camera`.`cameraDesc` ``)
   - **UPDATE `*catalog*`. `*table*` SET `*field*`=** (for example: `UPDATE` `` `camera`.`cameraDesc` SET `DEPT`= ``)
   - **INSERT INTO `*catalog*`. `*table*` (`*field1*`) VALUES ()** (for example: `INSERT INTO` `` `camera`.`cameraDesc` (`DEPT`) VALUES ()) ``)
   - **DELETE FROM `*catalog*`. `*table*`** (for example: `DELETE FROM` `` `camera`.`cameraDesc` WHERE `DEPT`= ``)

SQL Validation

SQL validation support is offered for IBM DB2. Note that if you choose a connection that does not support SQL validation, you will receive a warning when trying to validate. The SQL document is validated using the connection from the associated transformation scenario.

Executing SQL Statements

The steps for executing an SQL statement on a relational database are as follows:

1. Configure a transformation scenario using the **Configure Transformation Scenario(s)** action from the toolbar or the **XML** menu.

   A SQL transformation scenario needs a database connection. You can configure a connection using the **Preferences** button from the SQL transformation dialog box.

   The dialog box contains the list of existing scenarios that apply to SQL documents.
2. Set parameter values for SQL placeholders using the **Parameters** button from the SQL transformation dialog box.

   For example, in `SELECT * FROM `test`.`department` where DEPT = ? or DEPTNAME = ?` the two parameters can be configured for the place holders (?) in the transformation scenario.

   When the SQL statement is executed, the first placeholder is replaced with the value set for the first parameter in the scenario, the second placeholder is replaced by the second parameter value, and so on.

   Restriction: When a stored procedure is called in an SQL statement executed on an SQL Server database, mixing inline parameter values with values specified using the **Parameters** button of the scenario dialog box is not recommended. This is due to a limitation of the SQL Server driver for Java applications. An example of stored procedure that is not recommended: `call dbo.Test(22, ?)`.
3. Execute the SQL scenario by clicking the **OK** or **Apply associated** button.

   The result of a SQL transformation is displayed in a view at the bottom of the Oxygen XML Editor plugin window.
4. View more complex return values of the SQL transformation in a separate editor panel.

   A more complex value returned by the SQL query (for example, an *XMLTYPE* or *CLOB* value) cannot be displayed entirely in the result table.

   a) Right-click the cell containing the complex value.
   b) Select the action **Copy cell** from the contextual menu.
   The action copies the value in the clipboard.
   c) Paste the value into an appropriate editor.

   For example, you can paste the value in an opened XQuery editor panel of Oxygen XML Editor plugin.

XQuery and Databases

XQuery is a native XML query language that is useful for querying XML views of relational data to create XML results. It also provides the mechanism to efficiently and easily extract information from Native XML Databases (NXD) and relational data. The following database systems supported in Oxygen XML Editor plugin offer XQuery support:

- *Native XML Databases:*
  - Berkeley DB XML
  - eXist
  - MarkLogic (validation support available starting with version 5)
  - Documentum xDB (X-Hive/DB) 10
- *Relational Databases:*
  - IBM DB2
  - Microsoft SQL Server (validation support not available)
  - Oracle (validation support not available)

Related Information:

Editing XQuery Documents on page 721

Build Queries with Drag and Drop from the Data Source Explorer View

When a query is edited in the XQuery editor, the XPath expressions can be composed quickly by dragging them from the **Data Source Explorer** view and dropping them into the editor panel.

1. Configure the data source drivers for the particular relational database in the **Data Sources** preferences page.
2. Configure the connection for the particular relational database in the **Data Sources** preferences page.

3. Browse the connection in the **Data Source Explorer** view, expanded to the table or column that you want to insert in the query.
4. Drag the table or column name to the XQuery editor panel.
5. Drop the table or column name where the XPath expression is needed.

An XPath expression that selects the dragged name is inserted in the XQuery document at the cursor position.

XQuery Validation When Connected to a Database

With Oxygen XML Editor plugin, you can validate your XQuery documents when connected to a database. When you open an XQuery document from a connection that supports validation (for example, MarkLogic, or eXist), by default Oxygen XML Editor plugin uses this connection for validation. If you open an XQuery file using a MarkLogic connection, the validation resolves imports better.

Related Information:

XQuery Validation on page 721

XQuery Transformation for Databases

XQuery is designed to retrieve and interpret XML data from any source, whether it is a database or document. Data is stored in relational databases but it is often required that the data be extracted and transformed as XML when interfacing to other components and services. Also, it is an XPath-based querying language supported by most NXD vendors. To perform a query, you need an XQuery transformation scenario.

1. Configure the data source drivers and the connection for the particular database.
2. Configure an XQuery transformation scenario.
   a) Click the **Configure Transformation Scenario** toolbar button or go to menu **Document** > **Transformation** > **Configure Transformation Scenario**.

      The **Configure Transformation Scenario** dialog box is opened.
   b) Click the **New** button toward the bottom of the dialog box.
   c) Select **XML Transformation with XQUERY**.

      The **New Scenario** dialog box for configuring an XQuery scenario is opened.

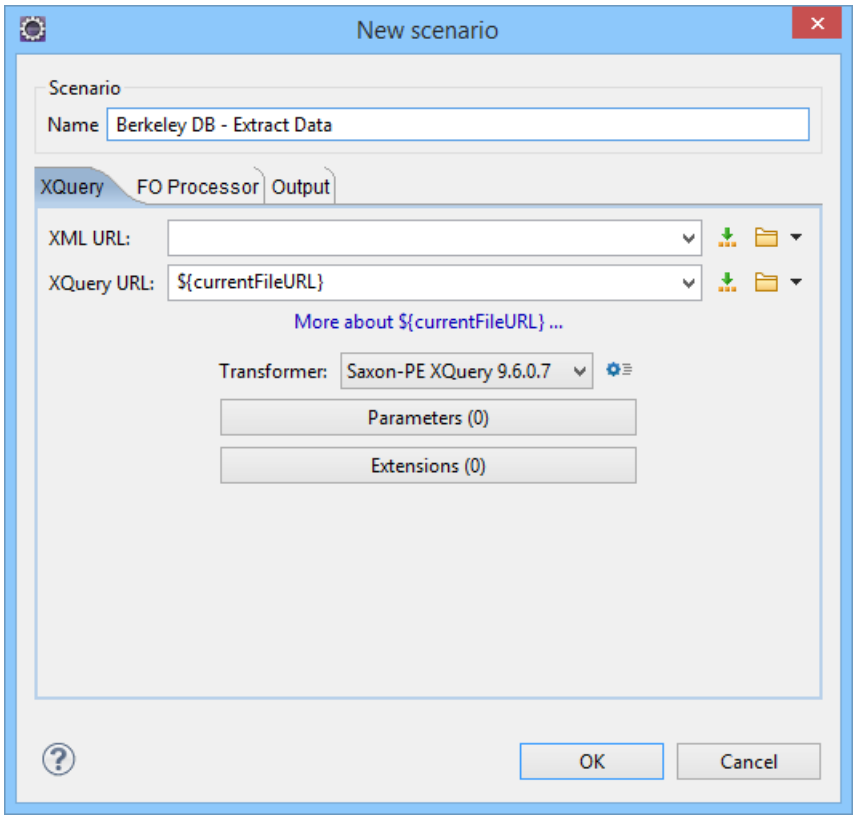


Figure 613: New Scenario Dialog Box

d) Insert the scenario name in the dialog box for editing the scenario.

e) Choose the database connection in the **Transformer** drop-down list.

f) Configure any other parameters as needed.

For an XQuery transformation, the output tab has an option called **Sequence** that allows you to run an XQuery in lazy mode. The amount of data extracted from the database is controlled from the **Size limit on Sequence view** option in the **XQuery** preferences page. If you choose **Perform FO Processing** in the **FO Processor** tab, the **Sequence** option is ignored.

g) Click the **OK** button to finish editing the scenario.

Once the scenario is associated with the XQuery file, the query can include calls to specific XQuery functions that are implemented by that engine. The available functions depend on the target database engine selected in the scenario. For example, for eXist and Berkeley DB XML, the *Content Completion Assistant* lists the functions supported by that database engine. This is useful for only inserting calls to the supported functions (standard XQuery functions or extension ones) into the query .

Note: An XQuery transformation is executed against a Berkeley DB XML server as a transaction using the query transaction support of the server.

3. Run the transformation scenario.

To view a more complex value returned by the query that cannot be entirely displayed in the XQuery query result table at the bottom of the Oxygen XML Editor plugin window (for example, an XMLTYPE or CLOB value), do the following:

- Right-click that table cell.
- Select the **Copy cell** action from the contextual menu to copy the value into the clipboard.
- Paste the value wherever you need it (for example, in an opened XQuery editor panel of Oxygen XML Editor plugin).

Related Information:

XML Transformation with XQuery on page 946
This type of transformation specifies the transform parameters and location of an XQuery file that is applied to the edited XML document.

XQuery XQJ Transformation on page 1189

XQuery XQJ Transformation

XQuery API for Java (XQJ) refers to the common Java API for the W3C XQuery 1.0 specification. The XQJ API enables you to execute XQuery against an XML data source.

Important: The XQJ connector is only capable of running XQuery 1.0 scrips, therefore XQuery 3.0 and 3.1 scripts are not supported.

Oxygen XML Editor plugin supports any transformer that offers an XQJ API implementation and it be used for validating XQuery or transforming XML documents.

To configure the support for XQJ, do the following:

1. Configure an XQJ *Data Source*.
2. Configure an XQJ *Connection*.
3. To view your connection, go to the **Data Source Explorer** view (if the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu) or switch to the **Database** *perspective*.

How to Configure an XQJ Data Source

Any transformer that offers an XQJ API implementation can be used when validating XQuery or transforming XML documents. An example of an XQuery engine that implements the XQJ API is Zorba.

1. If your XQJ Implementation is native, make sure the directory containing the native libraries of the engine is added to your system environment variables: to **PATH** - on Windows, to **LD_LIBRARY_PATH** - on Linux, or to **DYLD_LIBRARY_PATH** - on OS X. Restart Oxygen XML Editor plugin after configuring the environment variables.
2. Open the **Preferences** dialog box and go to **Data Sources**.
3. Click the **New** button in the **Data Sources** panel.
4. Enter a unique name for the data source.
5. Select **XQuery API for Java (XQJ)** in the **Type** combo box.
6. Press the **Add** button to add XQJ API-specific files.

   You can manage the driver files using the **Add**, **Remove**, **Detect**, and **Stop** buttons.

   Oxygen XML Editor plugin detects any implementation of *javax.xml.xquery.XQDataSource* and presents it in **Driver class** field.
7. Select the most suited driver in the **Driver class** combo box.
8. Click the **OK** button to finish the data source configuration.
9. Continue on to configure the XQJ connection.

How to Configure an XQJ Connection

The steps for configuring an XQJ connection are the following:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. Click the **New** button in the **Connections** panel.
3. Enter a unique name for the connection.
4. Select one of the previously configured XQJ data sources in the **Data Source** combo box.
5. Fill-in the connection details.

   The properties presented in the connection details table are automatically detected depending on the selected data source.
6. Click the **OK** button to finish the connection configuration.

XQuery Database Debugging

Oxygen XML Editor plugin includes a debugging interface that helps you to detect and solve problems with XQuery transformations that are executed against MarkLogic and Berkeley DB XML databases.

For more information about the debugging support in Oxygen XML Editor plugin, see Debugging XSLT Stylesheets and XQuery Documents on page 1205.

Debugging with MarkLogic

Oxygen XML Editor plugin includes support for debugging XQuery transformations that are executed against a MarkLogic database.

To use a debugging session against the MarkLogic engine, follow these steps:

1. Configure a MarkLogic data source and a MarkLogic connection.
2. Make sure that the debugging support is enabled in the MarkLogic server that Oxygen XML Editor plugin accesses. On the server side, debugging must be activated in the XDBC server and in the *Task Server* section of the server control console (the switch *debug allow*). If the debugging is not activated, the MarkLogic server reports a **DBG-TASKDEBUGALLOW** error.

   Note: An XDBC application server must be running to connect to the MarkLogic server and this XDBC server will be used to process XQuery expressions against the server. You can change the XDBC application server that Oxygen XML Editor plugin uses to process XQuery expressions by selecting the **Use it to execute queries** action from the contextual menu in the **Data Source Explorer** view.
3. Open the XQuery file and start the debugging process.

   - If you want to debug an XQuery file stored on the MarkLogic server, we recommend you to use the **Data Source Explorer** view and open the file from the application server that is involved in the debugging process. This improves the resolving of any imported modules.
   - The MarkLogic XQuery debugger integrates seamlessly into the XQuery Debugger *perspective*. If you have a MarkLogic validation scenario configured for the XQuery file, you can choose to debug the scenario directly.
   - Otherwise, switch to the **XQuery Debugger** *perspective*, open the XQuery file in the editor, and select the MarkLogic connection in the XQuery engine selector from the debug control toolbar.

     For general information about how a debugging session is started and controlled, see the Working with the Debugger section.

     Note: Before starting a debugging session, it is recommend that you link the MarkLogic connection with an Eclipse project. To do this, go to the **Data Source Explorer** view and select **Link to project** in the contextual menu of the MarkLogic connection. The major benefit of linking a debugging session with a project is that you can add *breakpoints* in the XQuery modules stored on the server. You are also able to access these modules from the Eclipse **Navigator** view and run debugging sessions from them.

In a MarkLogic debugging session, you can use step actions and *breakpoints* to help identify problems. When you add a *breakpoint* on a line where the debugger never stops, Oxygen XML Editor plugin displays a warning message. These warnings are displayed for *breakpoints* you add either in the main XQuery (which you can open locally or from the server) or for *breakpoints* you add in any XQuery that is opened from the connection that participates in the debugging session. For more information, see Using Breakpoints for Debugging Queries that Import Modules with MarkLogic on page 1169.

Remote Debugging with MarkLogic

Oxygen XML Editor plugin allows you to debug remote applications that use XQuery (for example, web applications that trigger XQuery executions). Oxygen XML Editor plugin connects to a MarkLogic server, shows you the running XQuery scripts and allows you to debug them. You can even pause the scripts so that you can start the debugging queries in the exact context of the application. You can also switch a server to debug mode to intercept all XQuery scripts.

Oxygen XML Editor plugin also supports collaborative debugging. This feature allows multiple users to participate in the same debugging session. You can start a debugging session and at a certain point, another user can continue it.

Important: When using the remote debugging feature, the HTTP and the XDBC servers involved in the debugging session must have the same module configuration.

For more information about the XQuery debugger for MarkLogic, watch our video demonstration:

https://www.youtube.com/embed/eQ4ThDZq1bk

Related Information:

MarkLogic Development in Oxygen XML Editor plugin on page 1167

Configuring a MarkLogic Database Connection on page 1166

Using Breakpoints for Debugging Queries that Import Modules with MarkLogic

When debugging queries that imports modules stored in the database, it is recommended to place *breakpoints* in the modules. When starting a new debugging session, make sure that the modules that you will debug are already opened in the editor. This is necessary so that the *breakpoints* in all the modules will be considered. Also, make sure that there are no other opened modules that are not involved in the current debugging session.

To place *breakpoints* in the modules, use the following procedure:

1. In the **Data Source Explorer** view, open all the modules from the **Modules** container of the XDBC application server that performs the debugging.
2. Set *breakpoints* in the module as needed.
3. Continue debugging the query.

If you get a warning that the *breakpoints* failed to initialize, try the following solutions:

- Check the **Breakpoints** view and make sure there are no older *breakpoints* (set on resources that are not part of the current debugging context).
- Make sure you open the modules from the context of the application server that does the debugging and place *breakpoints* there.

Related Information:

MarkLogic Database Connections on page 1165

MarkLogic Development in Oxygen XML Editor plugin on page 1167

Peculiarities and Limitations of the MarkLogic Debugger

MarkLogic debugger has the following peculiarities and limitations:

- Debugging support is only available for MarkLogic server versions 4.0 or newer.
- For MarkLogic server versions 4.0 or newer, there are three XQuery syntaxes that are supported: *'0.9-ml' (inherited from MarkLogic 3.2)*, *'1.0-ml'*, and *'1.0'*.
- All declared variables are presented as strings. The **Value** column of the **Variables** view contains the expression from the variable declaration. It can be evaluated by copying the expression with the **Copy value** action from the contextual menu of the **Variables** view and pasting it in the **XWatch** view.
- There is no support for output to source mapping.
- There is no support for showing the trace.
- You can only set breakpoints in imported modules in one of the following cases:
  - When you open the module from the context of the application server involved in the debugging, using the **Data Source Explorer** view.
  - When the debugger automatically opens the modules in the Editor.
- No *breakpoints* are set in modules from the same server that are not involved in the current debugging session.
- No support for profiling when an XQuery transformation is executed in the debugger.

Debugging with Berkeley DB XML

The Berkeley DB XML database added a debugging interface starting with version 2.5. The current version is supported in the Oxygen XML Editor plugin XQuery Debugger. The same restrictions and peculiarities apply for the Berkeley debugger as for the MarkLogic debugger.

Integration with Microsoft SharePoint

Oxygen XML Editor plugin provides support for browsing and managing SharePoint connections in the **Data Source Explorer** view. You can easily create new resources on the repository, copy and move them using contextual actions or the drag and drop support, or edit and transform the documents in the editor.

Note: You can access documents stored on SharePoint Online for Office 365 sites that use either **Cloud identity (default)** or **Federated identity (ADFS)** as the authentication method.

Restriction: The SharePoint connection is only available in the Enterprise edition of Oxygen XML Editor plugin.

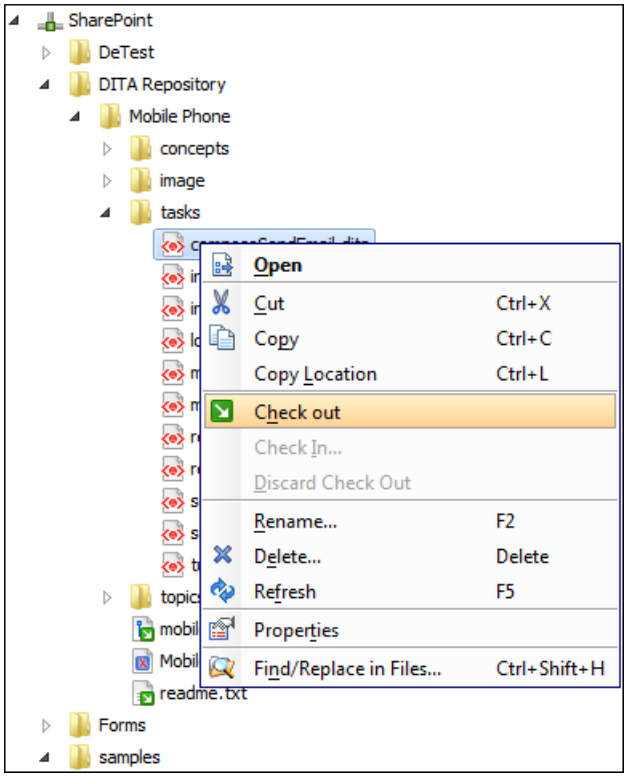


Figure 614: SharePoint Connection

Related Information:
Working with Databases on page 1138

How to Configure a SharePoint Connection

By default, Oxygen XML Editor plugin contains built-in data source drivers for **SharePoint**. Use this data source to create a connection to a SharePoint server that will be available in the **Data Source Explorer** view.

To configure a SharePoint connection, follow these steps:

1. Open the **Preferences** dialog box and go to **Data Sources**.
2. In the **Connections** panel click the **New** button.
3. Enter a unique name for the connection.
4. Select SharePoint in the **Data Source** combo box.
5. Fill-in the connection details:
   a) Set the URL to the SharePoint repository in the field **SharePoint URL**.
   b) Set the server domain in the **Domain** field. If you are using a SharePoint 365 account, leave this field empty.
   c) Set the user name to access the SharePoint repository in the **User** field.
   d) Set the password to access the SharePoint repository in the **Password** field.

SharePoint Contextual Menu Actions

While browsing SharePoint connections in the **Data Source Explorer** view, the various nodes include the following contextual menu actions:

Connection Level Nodes

Configure Database Sources

Opens the **Data Sources** preferences page where you can configure both data sources and connections.

Disconnect

Stops the connection.

New Folder

Creates a new folder on the connection.

Import Files

Allows you to add a new file on the connection, in the current folder.

Refresh

Performs a refresh on the selected node.

Folder Level Nodes

New File

Creates a new file on the connection, in the current folder.

New Folder

Creates a new folder on the connection.

Import Folders

Imports folders on the server.

Import Files

Allows you to add a new file on the connection, in the current folder.

Export

Allows you to export the folder on the remote connection to a local folder.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Paste

Pastes the copied selection.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Resource Level Nodes

Open

Opens the selected resource in the editor.

Open in System Application

When you use this action, Oxygen XML Editor plugin downloads the selected resource to a local temporary folder and opens the selected resource in the system application that is currently set as the default application associated with that type of resource. You can then edit the resource, save it, and when you switch the focus back to the **Data Source Explorer** view, Oxygen XML Editor plugin will detect that there was a change and will ask if you want to upload the edited resource to the server.

Cut

Removes the current selection and places it in the clipboard.

Copy

Copies the current selection into the clipboard.

Copy location

Allows you to copy (to the clipboard) an application-specific URL for the resource that can then be used for various actions, such as opening or transforming the resources.

Check Out

Checks out the selected document on the server.

Check In

Checks in the selected document on the server. This action opens the **Check In** dialog box. In this dialog box, the following options are available:

- **Minor Version** - Increments the minor version of the file on the server.
- **Major Version** - Increments the major version of the file on the server.
- **Overwrite** - Overwrites the latest version of the file on the server.
- **Comment** - Allows you to comment on a file that you check in.

Discard Check Out

Discards the previous checkout operation, making the file available for editing to other users.

Rename

Renames the current resource

Delete

Deletes the current container.

Refresh

Performs a refresh on the selected node.

Properties

Shows various properties of the current container.

Compare

Compares two selected resources.

Importing Data

14

Topics:

- Import from Text Files
- Import from MS Excel Files
- Import Database Data as an XML Document
- Import from HTML Files
- Import Content Dynamically

Computer systems and databases contain data in incompatible formats and exchanging data between these systems can be very time consuming. Converting the data to XML can greatly reduce the complexity and create data that can be read by various types of applications.

Oxygen XML Editor plugin offers support for importing text files, MS Excel files, Database Data, and HTML files into XML documents. The XML documents can be further converted into other formats using the Transform features.

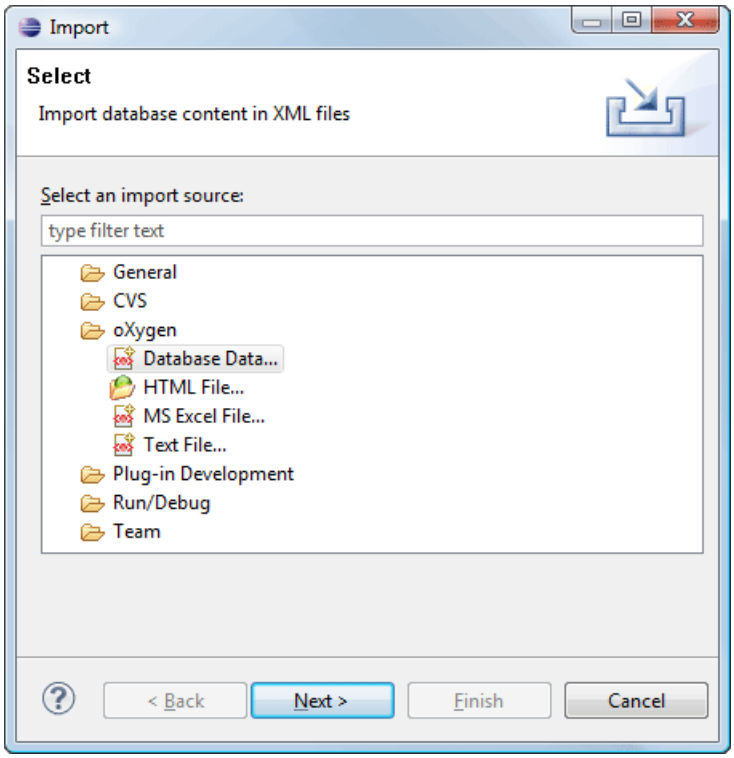


Figure 615: Import Wizards of the Oxygen XML Editor plugin Plugin

Import from Text Files

To import a text file into an XML file, follow these steps:

1. Go to **File** > **Import** > **Oxygen XML Editor plugin** > **Text File** and click **Next**.
   A **Select text file** dialog box is displayed.
2. Select the URL of the text file.
3. Select the encoding of the text file.

4. Click the **Next** button.
   The **Import from text file** dialog box is displayed.

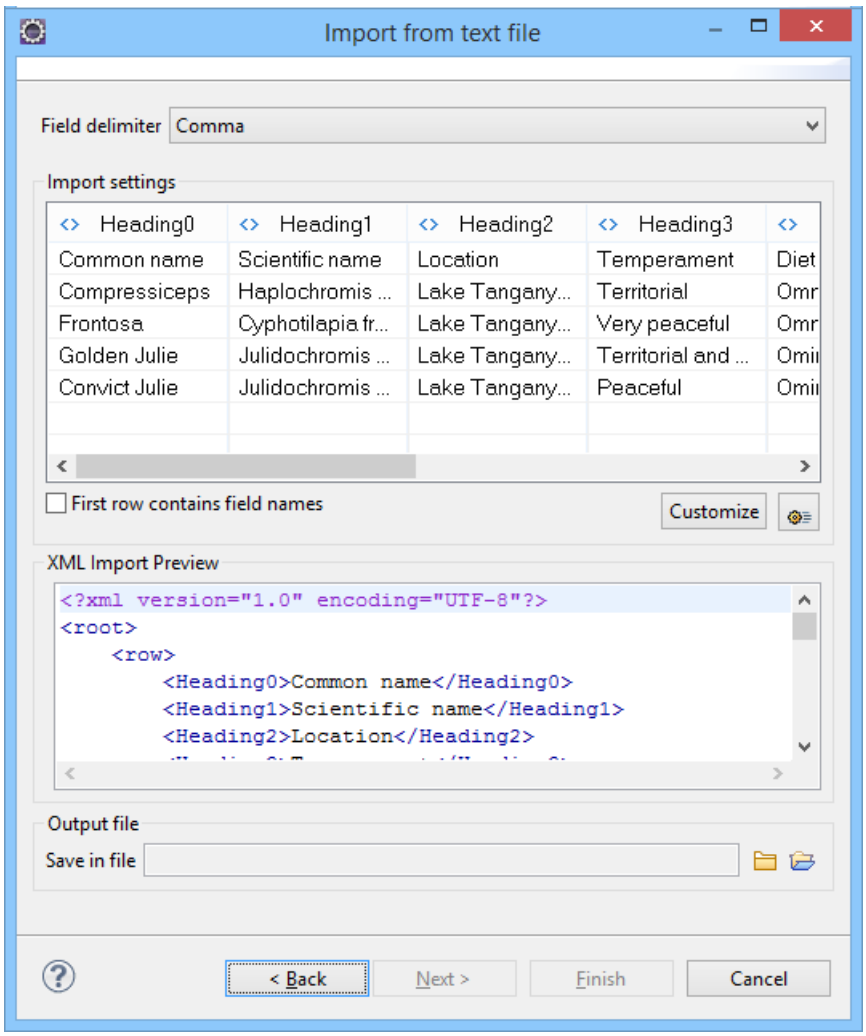


Figure 616: Import from Text File Dialog Box

5. Configure the settings for the conversion.
   a) Select the **Field delimiter** for the import settings. You can choose between the following: `Comma`, `Semicolon`, `Tab`, `Space`, or `Pipe`.
   b) The **Import settings** section presents the input data in a tabular form. By default, all data items are converted to element content (<> symbol), but this can be overridden by clicking the individual column headers. Clicking a column header once causes the data from this column to be converted to attribute values (= symbol). Clicking a second time causes the column data to be ignored (× symbol) when generating the XML file. You can cycle through these three options by continuing to click the column header.
   c) **First row contains field names** - If this option is selected, the default column headers are replaced (where such information is available) by the content of the first row. In other words, the first row is interpreted as containing the field names. The changes are also visible in the preview panel.
   d) **Customize** - This button opens a **Presentation Names** dialog box that allows you to edit the name, XML name, and conversion criterion for the root and row elements. The XML names can be edited by double-clicking the desired item and entering the label. The conversion criteria can also be modified by selecting one of the following option in the drop-down menu: `ELEMENT`, `ATTRIBUTE`, or `SKIPPED`.
   e) **Import Settings** - Clicking this button opens the **Import** preferences page that allows you to configure more import options.
   f) The **XML Import Preview** panel contains an example of what the generated XML document looks like.
   g) **Save in file** - If selected, the new XML document is saved in the specified path.

6. Click **Finish** to generate the XML document.

Import from MS Excel Files

Oxygen XML Editor plugin provides several methods for importing MS Excel files into an XML file. The first method is to use the Oxygen XML Editor plugin **Smart Paste** mechanism by simply copying data from Excel and pasting it into a document in **Author** mode (note that this is only supported in DITA, DocBook, TEI, JATS, and XHTML documents). You can also copy data from Excel and paste it into inserted cells in **Grid** mode, but this is a more manual process. If you want to import an entire Excel file, Oxygen XML Editor plugin also offers a configurable import wizard that works with any type of XML document.

Smart Paste Method in Author Mode

If you are importing data into DITA, DocBook, TEI, JATS, or XHTML documents, you can open the Excel spreadsheet in your office application, copy its content, and simply paste it into your document in **Author** mode.

The Oxygen XML Editor plugin **Smart Paste** mechanism will convert the pasted content to the equivalent XML markup and considers various pasting solutions to keep the resulting document valid, while preserving the original text styling (such as bold, italics, underline) and formatting (such as lists, tables, paragraphs).

Grid Mode Method

The **Grid** mode in Oxygen XML Editor plugin displays all content in an XML document as a structured grid of nested tables and you can work with the cells in those tables much like you would with any spreadsheet application. When importing Excel data into **Grid** mode, you first need to insert new cells in the particular nested table and then you can paste data from Excel the same as you would in any table or spreadsheet.

1. Copy the particular cells from your Excel spreadsheet that you want to import into an XML file.
2. Switch to **Grid** mode in Oxygen XML Editor plugin.
3. Expand the particular nodes and locate the nested table where you want to insert the copied cells.
4. Right-click a particular row or column where you want to insert the data and select **Insert row** or **Insert column**, depending on the structure of the copied cells.
5. Paste the copied cells from the clipboard into the newly inserted cells in **Grid** mode.
6. You may need to make some manual adjustments. For example, if the selection of copied cells contained an empty cell, Oxygen XML Editor plugin might ignore that cell.

Import Wizard Method

By default, this method supports importing Excel 97/2000/XP/2003 formats out-of-the-box. To import spreadsheet data from Excel 2007 or newer, additional libraries are needed before using this procedure. See Import Data from MS Excel 2007 or Newer on page 1199 for instructions on adding more libraries.

To use the **Import** wizard to import an Excel file into an XML file, follow these steps:

1. Go to **File** > **Import** > **Oxygen XML Editor plugin** > **MS Excel file**.
2. Select the URL of the Excel file.

   The sheets of the document you are importing are presented in the **Available Sheets** section of this dialog box.
3. Click the **Next** button to proceed to the next stage of the wizard.

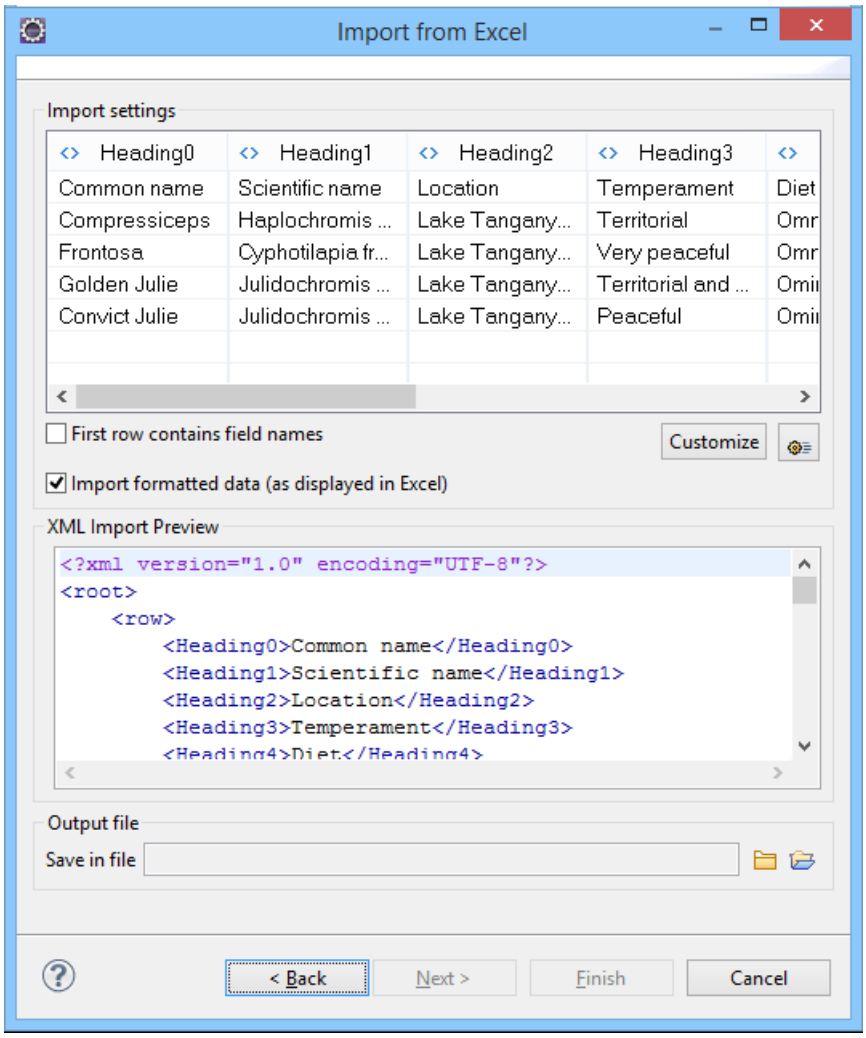


Figure 617: Import Wizard

4. Configure the settings for the conversion. This stage of the wizard offers the following options:

Import settings section

Presents the input data in a tabular form. By default, all data items are converted to element content (‹› symbol), but this can be overridden by clicking the individual column headers. Clicking a column header once causes the data from this column to be converted to attribute values (= symbol). Clicking a second time causes the column data to be ignored (× symbol) when generating the XML file. You can cycle through these three options by continuing to click the column header.

First row contains field names

If this option is selected, the default column headers are replaced (where such information is available) by the content of the first row. In other words, the first row is interpreted as containing the field names. The changes are also visible in the preview panel.

Customize

This button opens a **Presentation Names** dialog box that allows you to edit the name, XML name, and conversion criterion for the root and row elements. The XML names can be edited by double-clicking the desired item and entering the label. The conversion criteria can also be modified by selecting one of the following option in the drop-down menu: `ELEMENT`, `ATTRIBUTE`, or `SKIPPED`.

Import Settings

Clicking this button opens the **Import** preferences page that allows you to configure more import options.

Import formatted data (as displayed in Excel)

If this option is selected, the imported data retains the Excel data formatting (such as the representation of numeric values or dates). If deselected, the data formatting is not imported.

XML Import Preview panel

Contains an example of what the generated XML document will look like.

Save in file

If selected, the new XML document is saved in the specified path.

5. Click **Finish** to generate the XML document.

For more information about exchanging data between Oxygen XML Editor plugin and spreadsheet applications, watch our video demonstration:

https://www.youtube.com/embed/8VwsF58zLkU

Related Information:

Exporting XML Content to Excel on page 441

Import Data from MS Excel 2007 or Newer

To import spreadsheet data from Excel 2007 or newer (`.xlsx`), Oxygen XML Editor plugin needs additional libraries from the release 3.10 of the Apache POI project.

Manually Add the Libraries

To manually add the libraries, follow these steps:

1. Download version 3.10 of the Apache POI project from http://archive.apache.org/dist/poi/release/bin/. The specific ZIP file that you need is: `poi-bin-3.10-FINAL-20140208.zip`.
2. Unpack `poi-bin-3.10-FINAL-20140208.zip`.
3. Copy the following `.jar` files in the `plugin.xml` file of the Oxygen XML Editor plugin Eclipse plugin (if you installed the plugin via the Eclipse update site, you will find it in the `eclipse/plugins/com.oxygenxml...` folder, and if you installed it via the dropins ZIP distribution, it is located in the `eclipse/dropins/plugins/com.oxygenxml...` folder):
   - `dom4j-1.6.1.jar`
   - `poi-ooxml-3.10-FINAL-20140208.jar`
   - `poi-ooxml-schemas-3.10-FINAL-20140208.jar`
   - `xmlbeans-2.3.0.jar`

Result: You can now use the **Import** wizard to import data from Excel 2007 or newer.

Related Information:

Exporting XML Content to Excel on page 441

Import Database Data as an XML Document

To import the data from a relational database table as an XML document, follow these steps:

1. Go to **File** > **Import** > **Oxygen / Database Data** and click **Next** to start the **Import** wizard.

   This opens a **Select database table** dialog box that lists all the defined database connections:

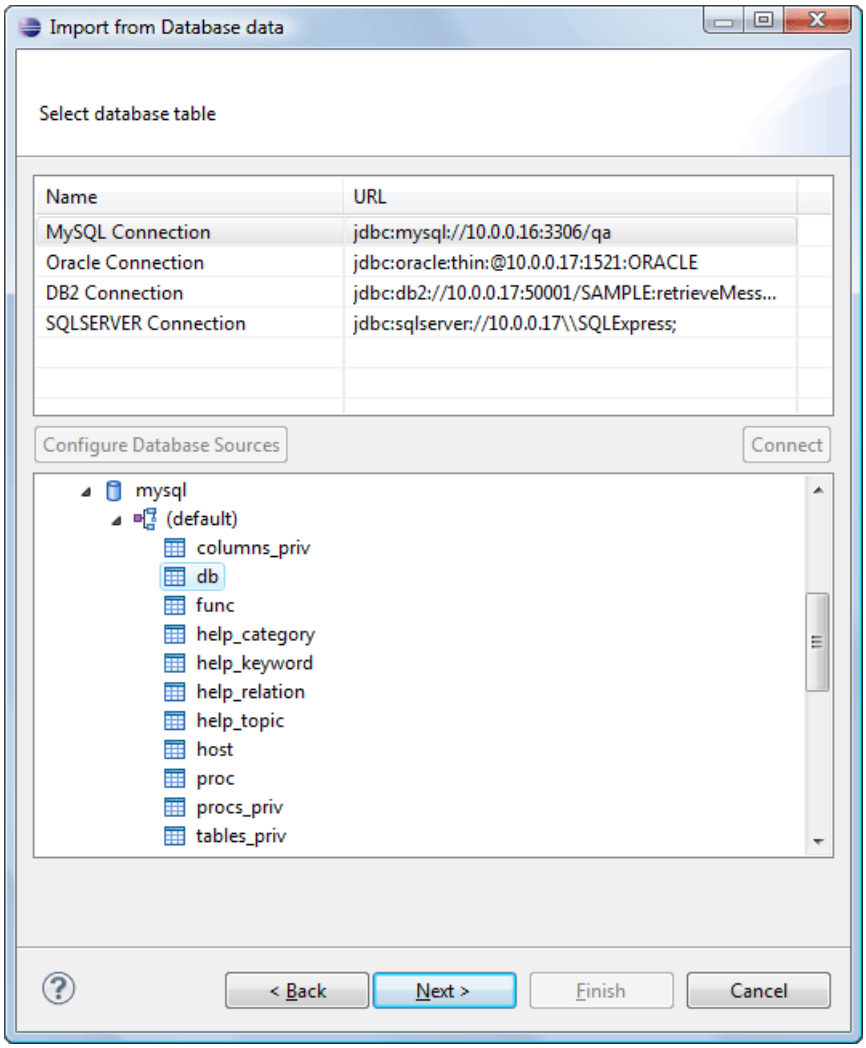


Figure 618: Select Database Table Dialog Box

2. Select the connection to the database that contains the appropriate data.

   Only connections configured in relational data sources can be used to import data.
3. If you want to edit, delete, or add a data source or connection, click the **Configure Database Sources** button. The **Preferences**/**Data Sources** option page is opened.
4. Click **Connect**.
5. In the list of sources, expand a schema and choose the required table.
6. Click the **Next** button.

   The **Import Criteria** dialog box is opened with a default query string in the **SQL Query** pane.

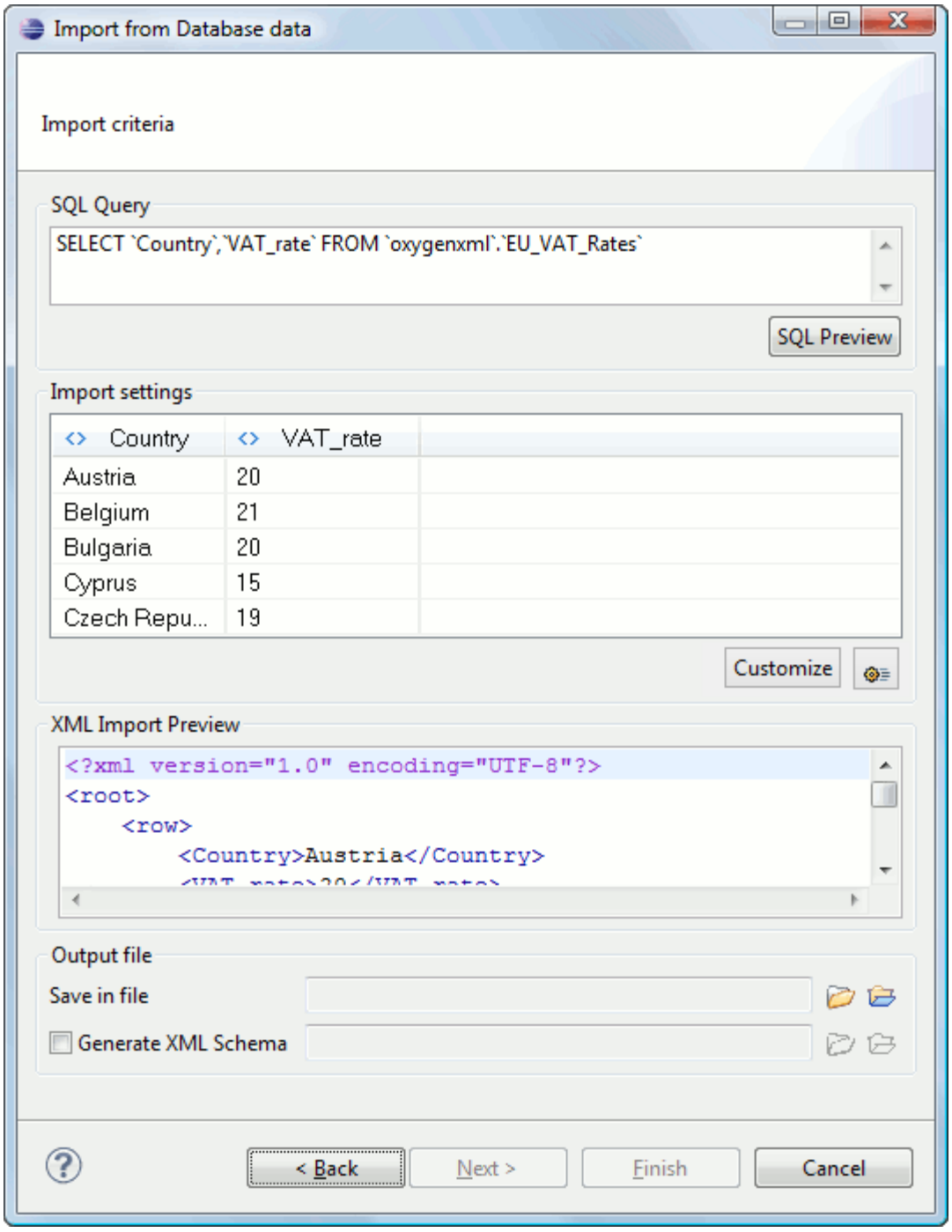


Figure 619: Import from Database Criteria Dialog Box

7. Configure the settings for the conversion.
   a) **SQL Preview** - If this button is pressed, the **Import settings** pane displays the labels that are used in the XML document and the first five lines from the database. By default, all data items are converted to element content (‹› symbol), but this can be overridden by clicking the individual column headers. Clicking a column header once causes the data from this column to be converted to attribute values (= symbol). Clicking a second time causes the column data to be ignored (× symbol) when generating the XML file. You can cycle through these three options by continuing to click the column header.
   b) **Customize** - This button opens a **Presentation Names** dialog box that allows you to edit the name, XML name, and conversion criterion for the root and row elements. The XML names can be edited by double-clicking the desired item and entering the label. The conversion criteria can also be modified by selecting one of the following option in the drop-down menu: `ELEMENT`, `ATTRIBUTE`, or `SKIPPED`.

c) **Import Settings** - Clicking this button opens the **Import** preferences page that allows you to configure more import options.
d) The **XML Import Preview** panel contains an example of what the generated XML document looks like.
e) **Save in file** - If selected, the new XML document is saved in the specified path.
f) **Generate XML Schema** - Allows you to specify the path of the generated XML Schema file.

8. Click **Finish** to generate the XML document.

Import from HTML Files

Oxygen XML Editor plugin offers two methods for importing HTML files into an XML document. The first method is to simply copy data from an HTML document and paste it into a document in **Author** mode, but this is only supported in DITA, DocBook, TEI, JATS, and XHTML documents. Oxygen XML Editor plugin also offers a configurable import wizard that works with any type of XML document.

Smart Paste Method

If you are importing data into DITA, DocBook, TEI, JATS, or XHTML documents, you can open the HTML document in your web browser, copy its content, and paste it into your document in **Author** mode.

The Oxygen XML Editor plugin **Smart Paste** mechanism will convert the pasted content to the equivalent XML markup and considers various pasting solutions to keep the resulting document valid, while preserving the original text styling (such as bold, italics, underline) and formatting (such as lists, tables, paragraphs).

Import Wizard Method

To use the **Import** wizard to import from HTML files, follow these steps:

1. Go to **File** > **Import** > **Oxygen XML Editor plugin** > **HTML File**. The **Import HTML** wizard is displayed.
2. Select a parent folder and file name for the resulting XHTML document.
3. Enter the URL of the HTML document.
4. Select the type of the resulting XHTML document:
   - XHTML5
   - XHTML 1.0 Transitional
   - XHTML 1.0 Strict
5. Click the **Finish** button.

Result: The resulting document is an XHTML file containing a DOCTYPE declaration that references the XHTML DTD definition on the Web. The parsed content of the imported file is transformed to XHTML5, XHTML Transitional, or XHTML Strict depending on the option you chose.

Import Content Dynamically

Along with the built-in support for various useful URL protocols (such as HTTP or FTP), Oxygen XML Editor plugin also provides special support for a *convert* protocol that can be used to chain predefined processors to dynamically import content from various sources.

A *dynamic conversion URL* chains various processors that can be applied, in sequence, on a target resource and has the following general syntax:

```
convert:/processor=xslt;ss=urn:processors:excel2d.xsl/processor=excel!/urn:files:my.xls
```

The previous example first applies a processor (`excel`) on a target identified by the identifier (`urn:files:sample.xls`) and converts the Excel™ resource to XML. The second applied processor (`xslt`) applies an XSLT stylesheet identified using the identifier (`urn:processors:excel2d.xsl`) over the resulting

content from the first applied processor. These identifiers are all mapped to real resources on disk via an *XML catalog* that is configured in the application, as in the following example:

```
<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
  <rewriteURI uriStartString="urn:files:" rewritePrefix="./resources/"/>
  <rewriteURI uriStartString="urn:processors:" rewritePrefix="./processors/"/>
</catalog>
```

The target resource part of the conversion URL must always follow the `!/` pattern. It can be any of the following:

- An absolute URL that points to a resource.
- An identifier that will be resolved to an actual resource via the *XML Catalog* support in the application. In the example above, the **urn:files:sample.xls** target resource is resolved via the *XML catalog*.
- A relative location. This location can only be resolved to an actual resource URL when the application has enough information about the location where the URL is referenced.

  For example, for a *DITA map* with a `topicref` such as:

  ```
  <topicref href="convert:/.../processor=excel!/resources/sample.xls"/>
  ```

  the `resources/sample.xls` path will be resolved relative to the *DITA map* location.

This type of URL can be opened in the application by using the **Open URL** action from the **File** menu. It can also be referenced from existing XML resources via `xi:include` or as a topic reference from a *DITA map*.

A *GitHub* project that contains various dynamic conversion samples for producing DITA content from various sources (and then publishing it) can be found here: https://github.com/oxygenxml/dita-glass.

Conversion Processors

A set of predefined conversion processors is provided in Oxygen XML Editor plugin. Each processor has its own parameters that can be set to control the behavior of the conversion process. All parameters that are resolved to resources are passed through the *XML catalog* mapping.

The following predefined conversion processors are included:

- **`xslt` Processor** - Converts an XML input using the Saxon EE XSLT processor. The `ss` parameter indicates the stylesheet resource to be loaded. All other specified parameters will be set as parameters to the XSLT transformation.

  ```
  convert:/processor=xslt;ss=urn:processors:convert.xsl;p1=v1!/urn:files:sample.xml
  ```

- **`xquery` Processor** - Converts an XML input using the Saxon EE XQuery processor. The `ss` parameter indicates the XQuery script to be loaded. All other specified parameters will be set as parameters to the XSLT transformation.

  ```
  convert:/processor=xquery;ss=urn:processors:convert.xquery;p1=v1!/urn:files:sample.xml
  ```

- **`excel` Processor** - Converts an Excel™ input to an XML format that can later be converted by other piped processors. It has a single parameter `sn`, which indicates the name of the sheet that needs to be converted. If this parameter is missing, the XML will contain the combined content of all sheets included in the Excel™ document.

  ```
  convert:/processor=excel;sn=test!/urn:files:sample.xls
  ```

- **`java` Processor** - Converts an input to another format by applying a specific Java method. The `jars` parameter is a comma-separated list of *JAR* libraries, or folders that libraries will be loaded from. The `ccn` parameter is the fully qualified name of the conversion class that will be instantiated. The conversion class needs to have a method with the following signature:

  ```
    public void convert(String systemID, String originalSourceSystemID,
  InputStream is, OutputStream os, LinkedHashMap<String, String> properties)
  throws IOException
  ```

  ```
  convert:/processor=java;jars=libs;ccn=test.JavaToXML!/
  urn:files:java/WSEditorBase.java
  ```

- **`js` Processor** - Converts an input to another format by applying a JavaScript method. The `js` parameter indicates the script that will be used. The `fn` parameter is the name of the method that will be called from the

script. The method must take a string as an argument and return a string. If any of the parameters are missing, an error is thrown and the conversion stops.

```
convert:/processor=js;js=urn:processors:md.js;fn=convertExternal!/urn:files:sample.md
```

- **`json` Processor** - Converts a JSON input to XML. It has no parameters.

  ```
  convert:/processor=json!/urn:files:personal.json
  ```

- **`xhtml` Processor** - Converts HTML content to well-formed XHTML. It has no parameters.

  ```
  convert:/processor=xhtml!/urn:files:test.html
  ```

- **`wrap` Processor** - Wraps content in a tag name making it well-formed XML. The `rn` parameter indicates the name of the root tag to use. By default, it is `wrapper`. The `encoding` parameter specifies the encoding that should be used to read the content. By default, it is UTF8. As an example, this processor can be used if you want to process a comma-separated values file with an XSLT stylesheet to produce XML content. The CSV file is first wrapped as well-formed XML, which is then processed with an `xslt` processor.

  ```
  convert:/processor=wrap!/urn:files:test.csv
  ```

- **`cache` Processor** - Caches the converted content obtained from the original document to a temporary file. The cache will be used on subsequent uses of the same URL, thus increasing the speed for the application returning the converted content. If the original URL points to the local disk, the cache will be automatically invalidated when the original file content gets modified. Otherwise, if the original URL points to a remote resource, the cache will need to be invalidated by reloading (**File** > **Reload (F5)**) the URL content that is opened in the editor.

  ```
  convert:/processor=cache/processor=xslt;…..!/urn:files:test.csv
  ```

Reverse Conversion Processors

All processors defined above can also be used for saving content back to the target resource if they are defined in the URL as reverse processors. Reverse processors are evaluated right to left. These reverse processors allow *round-tripping* content to and from the target resource.

As an example, the following URL converts HTML to DITA when the URL is opened using the `h2d.xsl` stylesheet and converts DITA to HTML when the content is saved in the application using the `d2h.xsl` stylesheet.

```
convert:/processor=xslt;ss=h2d.xsl/rprocessor=xslt;ss=d2h.xsl!/urn:files:sample.html
```

Important: If you are publishing a *DITA map* that has such conversion URL references inside, you need to edit the transformation scenario and set the value of the parameter *fix.external.refs.com.oxygenxml* to **true**. This will instruct Oxygen XML Editor plugin to resolve such references during a special pre-processing stage. Depending on the conversion, you may also require additional libraries to be added using the **Libaries** button in the **Advanced** tab of the transformation scenario.

Related Information:

Debugging XSLT Stylesheets and XQuery Documents 15

Topics:

- Debugger Layout
- Steps in a Typical Debugging Process
- Identify the XSLT / XQuery Expression that Generated Particular Output
- Using Breakpoints
- Performance Profiling of XSLT Stylesheets and XQuery Documents
- Debugging XSLT that Call Java Extensions
- Supported Processors for XSLT / XQuery Debugging

Oxygen XML Editor plugin includes a powerful debugging interface that helps you to detect and solve problems with XSLT and XQuery transformations.

XSLT Debugger Perspective

The **XSLT Debugger** *perspective* allows you to detect problems in an XSLT transformation by executing the process step by step. To switch the focus to this *perspective*, select **Window** > **Open Perspective** > **Other** > **Oxygen XSLT Debugger**.

XQuery Debugger Perspective

The **XQuery Debugger** *perspective* allows you to detect problems in an XQuery transformation process by executing the process step by step in a controlled environment and inspecting the information provided in the special views. To switch the focus to this *perspective*, select **Window** > **Open Perspective** > **Other** > **Oxygen XQuery Debugger**.

XSLT/XQuery Debugging Overview

The **XSLT Debugger** and **XQuery Debugger** *perspectives* allows you to test and debug XSLT 1.0 / 2.0 / 3.0 stylesheets and XQuery 1.0 / 3.0 documents including complex XPath 2.0 / 3.0 expressions. The interface presents simultaneous views of the source XML document, the XSLT/XQuery document and the result document. As you go step by step through the XSLT/XQuery document the corresponding output is generated step by step, and the corresponding position in the XML file is highlighted. At the same time, special views provide various types of debugging information and events useful to understand the transformation process.

The following set of features allow you to test and solve XSLT/XQuery problems:

- Support for XSLT 1.0 stylesheets (using Saxon 6.5.5 and Xalan XSLT engines), XSLT 2.0 / 3.0 stylesheets and XPath 2.0 / 3.0 expressions that are included in the stylesheets (using Saxon 9.8.0.8 XSLT engine) and XQuery 1.0 / 3.0 (using Saxon 9.8.0.8 XQuery engine).
- Stepping capabilities: step in, step over, step out, run, run to cursor, run to end, pause, stop.
- Output to source mapping between every line of output and the instruction element / source context that generated it.
- *Breakpoints* on both source and XSLT/XQuery documents.
- Call stack on both source and XSLT/XQuery documents.
- Trace history on both source and XSLT/XQuery documents.
- Support for XPath expression evaluation during debugging.
- Step into imported/included stylesheets as well as included source entities.
- Available templates and hits count.
- Variables view.
- Dynamic output generation.

For even more information, watch our video demonstration:

https://www.youtube.com/embed/m9d8c4V-LJw

Debugger Layout

The XML and XSL files are displayed in **Text** mode. The other modes (**Author** mode, **Grid** mode) are available only in the **Editor** *perspective*.

The **XSLT/XQuery Debugger** *perspective* contains the following components:

- **Source Document View (XML)** - Displays and allows the editing of XML files (documents).
- **XSLT/XQuery Document View (XSLT/XQuery)** - Displays and allows the editing of XSL files (stylesheets) or XQuery documents.
- **Output View** - Displays the output that results from inputting a document (XML) and a stylesheet (XSL) or XQuery document in the transformer. The transformation result is written dynamically while the transformation is processed (using the **Run** button on the Control toolbar). Several actions are available in the contextual menu for this view, including **Find/Replace**, **Copy**, and **Format and Indent**. There are two types of output views: a text-based **Output** view (with XML syntax highlights) and **HTML** view.
- **Control Toolbar** - Contains a variety of actions to help you configure and control the debugging process.
- **Information Views** - The information views at the bottom of the editor display various types of information to help you understand the transformation process.

Tip: The **Output** view and the various other information views are dockable so that you can configure the workspace according to your preferences.

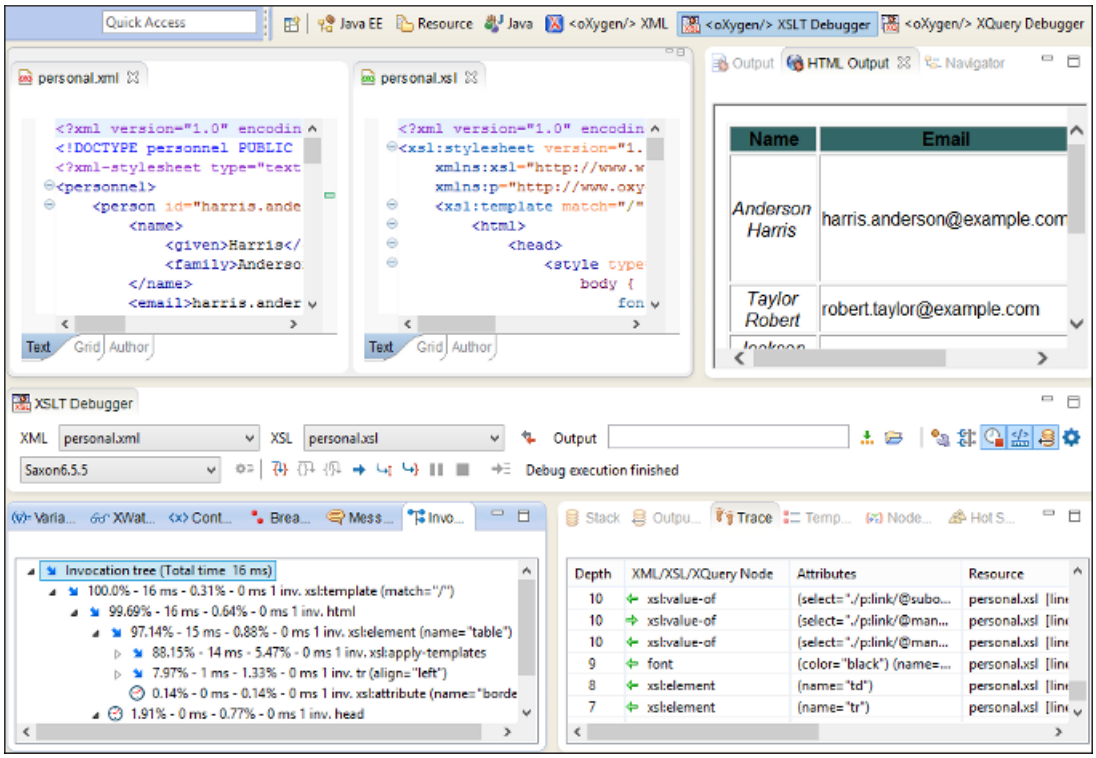


Figure 620: Debugger Interface

XML documents and XSL stylesheets or XQuery documents that were opened in the **Editor** *perspective* are automatically sorted into the first two panes. When multiple files of each type are opened, the individual documents and stylesheets are separated using the familiar tab management system that you are used to in the **Editor** *perspective*. Selecting a tab brings the document or stylesheet into focus and enables editing without the need to go back to the **Editor** *perspective*.

During debugging, the current execution node is highlighted in both document (XML) and XSLT/XQuery views.

Related Information:

Steps in a Typical Debugging Process on page 1217
Identify the XSLT / XQuery Expression that Generated Particular Output on page 1218
Supported Processors for XSLT / XQuery Debugging on page 1224
Performance Profiling of XSLT Stylesheets and XQuery Documents on page 1220

Control Toolbar

The **Control** toolbar contains all the actions that you need to configure and control the debugging process. The following actions are described as they appear in the toolbar from left to right.

Figure 621: Control Toolbar

XML source selector

The current selection represents the source document used as input by the transformation engine. The selection list contains all opened files (XML files being emphasized). This option allows you to use other file types also as source documents. In an XQuery debugging session this selection field can be set to the default value NONE, because usually XQuery documents do not require an input source.

XSL / XQuery selector

The current selection represents the stylesheet or XQuery document to be used by the transformation engine. The selection list contains all opened files (XSLT / XQuery files being emphasized).

Link with editor

When selected, the XML and XSLT/XQuery selectors display the names of the files opened in the central editor panels. This button is toggled off by default.

Output selector

The selection represents the output file specified in the associated transformation scenario. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Configure parameters

Opens a dialog box that allows you to configure the XSLT / XQuery parameters to be used by the transformation.

Edit extensions

Allows you to add and remove the Java classes and *JARS* used as XSLT extensions.

Turn on/off profiling

Enables / Disables current transformation profiling.

Enable XHTML output

Enables the rendering of the output in the **HTML** output view during the transformation process. For performance issues, disable XHTML output when working with very large files. Note that only XHTML conformant documents can be rendered by this view. To view the output result of other formats, such as HTML, save the **Text output** area to a file and use an external browser for viewing.

When starting a debug session from the **Editor** *perspective* by using the **Debug Scenario** action, the state of this toolbar button reflects the state of the **Show as XHTML** output option from the scenario.

Turn on/off output to source mapping

Enables or disables the output to source mapping between every line of output and the instruction element / source context that generated it.

Debugger preferences

Quick link to Debugger preferences page.

XSLT / XQuery engine selector

Lists the processors available for debugging XSLT and XQuery transformations.

XSLT / XQuery engine advanced options

Advanced options available for Saxon 9.8.0.8.

Step into F7

Starts the debugging process and runs until the next instruction is encountered.

Step over F8 (Alt + F8 on OS X)

Run until the current instruction and its sub-instructions are over. Usually this will advance to the next sibling instruction.

Step out Shift + F7 (Command + F8 on OS X)

Run until the parent of the current instruction is over. Usually this will advance to the next sibling of the parent instruction.

Run Shift + F5

Starts the debugging process. The execution of the process is paused when a breakpoint is encountered or the transformation ends.

Run to cursor Ctrl + F5

Starts the debugging process and runs until one of the following conditions occur: the line of cursor is reached, a valid *breakpoint* is reached or the execution ends.

Run to end Alt + F5

Runs the transformation until the end, without taking into account enabled *breakpoints*, if any.

Pause Shift + F6

Request to pause the current transformation as soon as possible.

Stop F6

Request to stop the current transformation without completing its execution.

Show current execution nodes

Reveals the current debugger context showing both the current instruction and the current node in the XML source. Possible displayed states:

- Entering ( ) or leaving ( ) an XML execution node.
- Entering ( ) or leaving ( ) an XSL execution node.
- Entering ( ) or leaving ( ) an XPath execution node.

  Note: When you set a MarkLogic server as a processor, the **Show current execution nodes** button is named **Refresh current session context from server**. Click this button to refresh the information in all the views.

Note: For some of the XSLT processors (Saxon-HE/PE/EE) the debugger could be configured to step into the XPath expressions affecting the behavior of the following debugger actions: **Step into**, **Step over** or **Step Out**.

Related Information:

Advanced Saxon HE/PE/EE XQuery Transformation Options on page 948

Debugging Information Views

The information views at the bottom of the editor is comprised of two panes that are used to display various types of information used to understand the transformation process. For each information type there is a

corresponding tab. While running a transformation, relevant events are displayed in the various information views. This enables the developer to obtain a clear view of the transformation progress. By using the debug controls, developers can easily isolate parts of stylesheet. Therefore, they may be more easily understood and modified.

The information types include the following:

Left side information views

- **Breakpoints** view
- **XWatch** view
- **Context** view
- **Messages** view (XSLT only)
- **Variables** view
- **Invocation Tree** view

Right side information views

- **Stack** view
- **Output Mapping Stack** view
- **Trace** view
- **Templates** view (XSLT only)
- **Nodes/Values Set** view
- **Hotspots** view

Tip: The information views are dockable so that you can configure the workspace according to your preferences.

Breakpoints View

The **Breakpoints** view lists all *breakpoints* that are set on opened documents. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu. *Breakpoints* can be inserted in the XML source document or the XSLT/XQuery document in debugging sessions.

Once you insert a *breakpoint*, it is automatically added to the list in the **Breakpoints** view and you can edit its associated *condition*. A *breakpoint* can have an associated break condition that represents an XPath expression evaluated in the current debugger context. In order to be processed, their evaluation result should be a boolean value. A *breakpoint* with an associated condition only stops the execution of the Debugger if the *breakpoint condition* is evaluated as **true**.

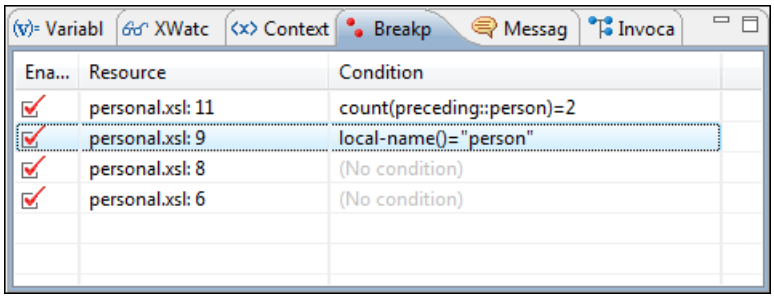


Figure 622: Breakpoints View

The **Breakpoints** view contains the following columns:

- **Enabled** - If selected, the current condition is evaluated and taken into account.
- **Resource** - Resource file and number of the line where the *breakpoint* is set.
- **Condition** - XSLT/XQuery expression to be evaluated during debugging. The expression will be evaluated at every debug step.

Clicking a record highlights the *breakpoint* line in the document.

Note: The *breakpoints* list is not deleted at the end of a transformation (it is preserved between debugging sessions).

The following actions are available in the contextual menu of the table:

Go to

Moves the cursor to the source of the *breakpoint*.

Run to Breakpoint

Runs the debugger up to the point of this particular *breakpoint* and ignores the others (regardless of whether they were previously enabled or disabled).

Enable

Enables the *breakpoint*.

Disable

Disables the *breakpoint*. A disabled *breakpoint* will not be evaluated by the Debugger.

Add

Allows you to add a new *breakpoint* and *breakpoint condition*.

Edit

Allows you to edit an existing *breakpoint*.

Remove

Deletes the selected *breakpoint*.

Enable all

Enables all *breakpoints*.

Disable all

Disables all *breakpoints*.

Remove all

Removes all *breakpoints*.

Related Information:

Using Breakpoints on page 1219

Context View

The context node is valid only for XSLT debugging sessions and is a source node corresponding to the XSL expression that is evaluated. It is also called the context of execution. The context node implicitly changes as the processor hits various steps (at the point where XPath expressions are evaluated). This node has the same value as evaluating '.' (dot) XPath expression in **XWatch** view. The value of the context node is presented as a tree in the **Context** view. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

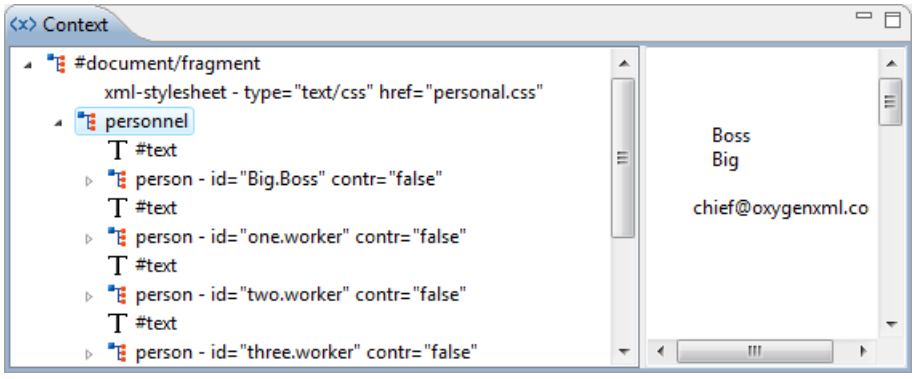


Figure 623: Context node view

The context nodes are presented in a tree-like fashion. Nodes from a defined namespace bound to a prefix are displayed using the qualified name. If the namespace is not bound to a prefix, the namespace URI is presented before the node name. The value of the selected attribute or node is displayed in the right side panel. The **Context** view also presents the current mode of the XSLT processor if this mode differs from the default one.

XPath Watch (XWatch) View

The **XWatch** view shows XPath expressions evaluated during the debugging process. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Expressions are evaluated dynamically as the processor changes its source context. When you type an XPath expression in the **Expression** column, Oxygen XML Editor plugin supports you with syntax highlight and content completion assistance.

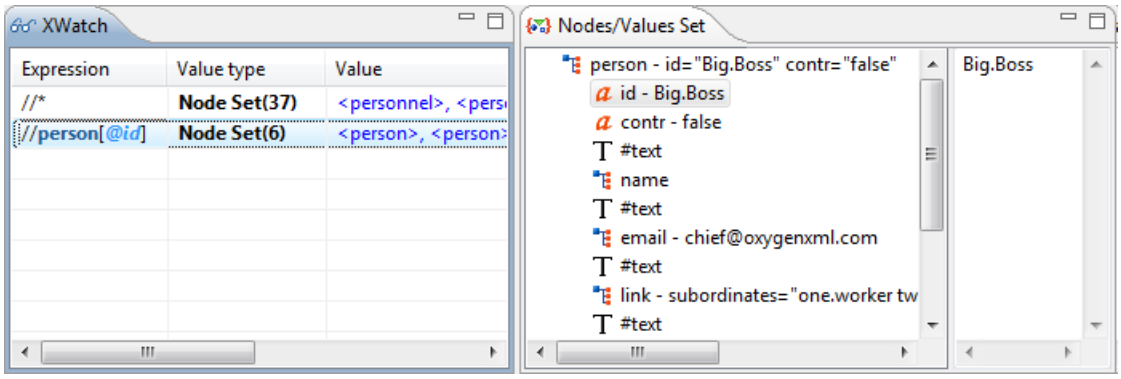


Figure 624: XPath Watch View

Table 66: XWatch columns

Column	Description
Expression	XPath expression to be evaluated (XPath 1.0 or 2.0 / 3.0 compliant).
Value	Result of XPath expression evaluation. Value has a type (see the possible values in the section Variables View on page 1216). For *Node Set* results, the number of nodes in the set is shown in parenthesis.

Important: Notes about working with the **XWatch** view:

- Expressions that reference variable names are not evaluated.
- The expression list is not deleted at the end of the transformation (it is preserved between debugging sessions).
- To insert a new expression, click the first empty line of the **Expression** column and start typing.
- To delete an expression, click its **Expression** column and delete its content.
- If the expression result type is a *Node Set*, click it (**Value** column) and its value is displayed in the **Nodes/Values Set** view.
-

Messages View

Using **xsl:message** instructions is one way to signal special situations encountered during transformation as well as a raw way of doing the debugging. The **Messages** view is available only for XSLT debugging sessions and shows all `xsl:message` calls executed by the XSLT processor during transformation. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

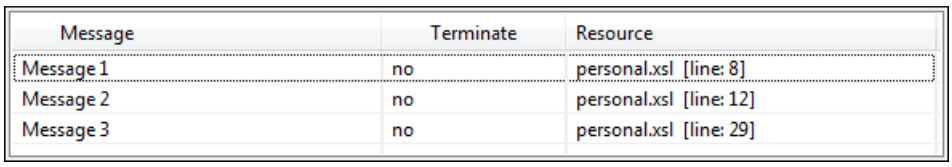


Figure 625: Messages View

Table 67: Messages columns

Column	Description
Message	Message content.
Terminate	Signals if processor terminates the transformation or not once it encounters the message (yes/no respectively).
Resource	Resource file where *xsl:message* instruction is defined and the message line number.

The following actions are available in the contextual menu:

Go to

Highlight the XSL fragment that generated the message.

Copy

Copies to clipboard message details (system ID, severity info, description, start location, terminate state).

Clear all

Removes all messages from the view.

Important:

- Clicking a record from the table highlights the `xsl:message` declaration line.
- Message table values can be sorted by clicking the corresponding column header. Clicking the column header switches the sorting order between: ascending, descending, no sort.

Stack View

The **Stack** view shows the current execution stack of both source and XSLT/XQuery nodes. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

During the transformation, two stacks are managed. One for source nodes being processed and the other for XSLT/XQuery nodes being processed. Oxygen XML Editor plugin shows both node types in one common stack. The source (XML) nodes are preceded by a red color icon while XSLT/XQuery nodes are preceded by a green color icon. The advantage of this approach is that you can always see the source scope on which an XSLT/XQuery instruction is executed (the last red color node on the stack). The stack is oriented upside down.

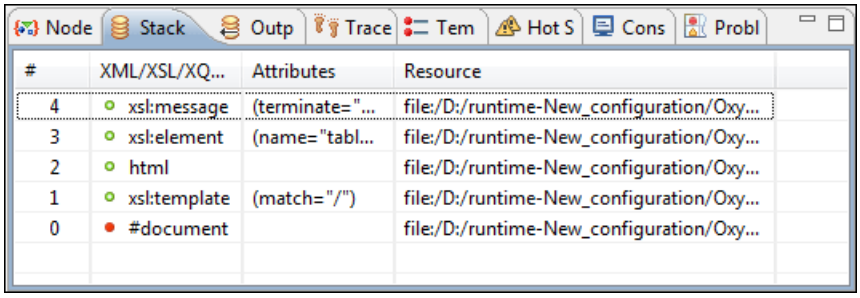


Figure 626: Stack View

The contextual menu contains one action: **Go to**, which moves the selection in the editor panel to the line containing the XSLT element that is displayed on the selected line from the view.

Table 68: Stack Columns

Column	Description
#	Order number, represents the depth of the node (0 is the stack base).
XML/XSLT/XQuery Node	Node from source or stylesheet document currently being processed. One particular stack node is the document root, noted as **#document**.

Column	Description
Attributes	Attributes of the node (a list of *id="value"* pairs).
Resource	Resource file where the node is located.

Important: Remarks:

- Clicking a record from the stack highlights that node's location inside resource.
- Using Saxon, the stylesheet elements are qualified with XSL proxy, while using Xalan you only see their names. (example: `xsl:template` using Saxon and `template` using Xalan).
- Only the Saxon processor shows element attributes.
- The Xalan processor shows also the built-in rules.

Output Mapping Stack View

The **Output Mapping Stack** view displays context data and presents the XSLT templates/XQuery elements that generated specific areas of the output. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

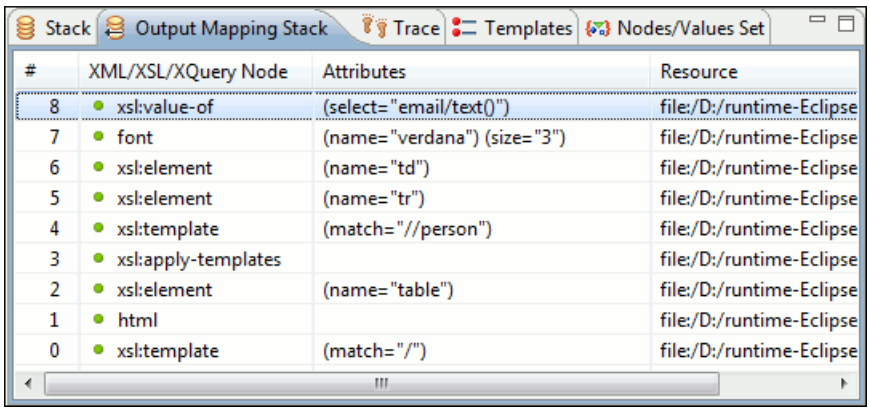


Figure 627: Output Mapping Stack view

The **Go to** action of the contextual menu takes you to the line that contains the XSLT element displayed in the **Output Mapping Stack** view.

Table 69: Output Mapping Stack Columns

Column	Description
#	The order number in the stack of XSLT templates/XQuery elements. Number 0 corresponds to the bottom of the stack in the status of the XSLT/XQuery processor. The highest number corresponds to the top of the stack.
XSL/XQuery Node	The name of an XSLT template/XQuery element that participated in the generation of the selected output area.
Attributes	The attributes of the XSLT template/XQuery node.
Resource	The name of the file containing the XSLT template/XQuery element.

Important: Remarks:

- Clicking a record highlights that XSLT template definition/XQuery element inside the resource (XSLT stylesheet file/XQuery file).
- Saxon only shows the applied XSLT templates having at least one hit from the processor. Xalan shows all defined XSLT templates, with or without hits.
- The table can be sorted by clicking the corresponding column header. When clicking a column header the sorting order switches between: ascending, descending, no sort.

- Xalan shows also the built-in XSLT rules.

Related Information:

Identify the XSLT / XQuery Expression that Generated Particular Output on page 1218
Stack View on page 1212
Trace View on page 1214
Templates View on page 1215

Trace View

Usually, the XSLT/XQuery processors signal the following events during transformation:

- - Entering a source (XML) node.
- - Leaving a source (XML) node.
- - Entering an XSLT/XQuery node.
- - Leaving an XSLT/XQuery node.

The **Trace** view catches all of these events, so you can see how the process evolved. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The red icon lines denote source nodes while the green icon lines denote XSLT/XQuery nodes. It is possible to save the element trace in a structured XML document (using the **Export to XML** action in the contextual menu). Thus, you have the possibility of comparing the trace results from multiple debug sessions.

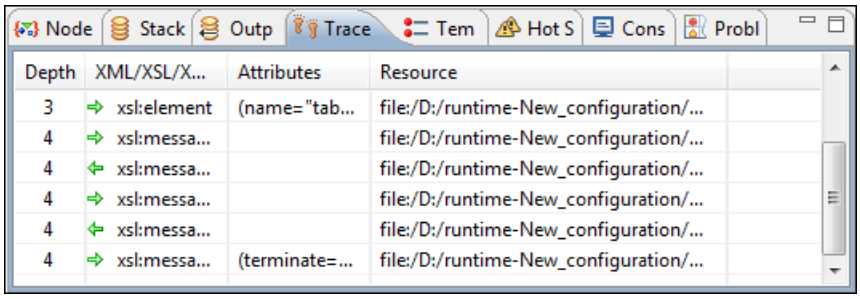


Figure 628: Trace History View

The contextual menu contains the following actions:

Go to

Moves the selection in the editor panel to the line containing the XSLT element or XML element that is displayed on the selected line from the view;

Export to XML

Saves the entire trace list in XML format.

Table 70: Trace History Columns

Column	Description
Depth	Shows you how deep the node is nested in the XML or stylesheet structure. The bigger the number, the more nested the node is. A depth 0 node is the document root.
XML/XSLT/XQuery Node	Represents the node from the processed source or stylesheet document. One particular node is the document root, noted as *#document*. Every node is preceded by an arrow that represents what action was performed on it (entering or leaving the node).
Attributes	Attributes of the node (a list of *id="value"* pairs).
Resource	Resource file where the node is located.

Important: Remarks:

- Clicking a record highlights that node's location inside the resource.
- Only the Saxon processor shows the element attributes.
- The Xalan processor shows also the built-in rules.

Templates View

The **xsl:template** is the basic element for stylesheets transformation. The **Templates** view is only available during XSLT debugging sessions and shows all *xsl:template* instructions used by the transformation. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Being able to see the number of *hits* for each of the templates allows you to get an idea of the stylesheet coverage by template rules with respect to the input source.

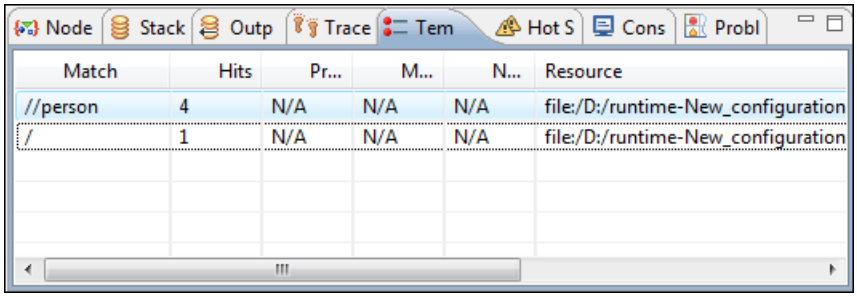


Figure 629: Templates view

The contextual menu contains one action: **Go to**, which moves the selection in the editor panel to the line that contains the XSLT template displayed on the selected line from the view.

Table 71: Templates columns

Column	Description
Match	The *match* attribute of the *xsl:template*.
Hits	The number of hits for the *xsl:template*. Shows how many times the XSLT processor used this particular template.
Priority	The template priority as established by XSLT processor.
Mode	The *mode* attribute of the *xsl:template*.
Name	The *name* attribute of the *xsl:template*.
Resource	The resource file where the template is located.

Important: Remarks:

- Clicking a record highlights that template definition inside the resource.
- Saxon only shows the applied templates having at least one hit from the processor. Xalan shows all defined templates, with or without hits.
- Template table values can be sorted by clicking the corresponding column header. When clicking a column header the sorting order switches between: ascending, descending, no sort.
- Xalan shows also the built-in rules.

Nodes/Values Set View

The **Nodes/Values Set** view is always used in relation with the **Variables** view and **XWatch** view. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu. It shows an XSLT node set value in a tree form. This view is updated as a response to the following events:

- You click a variable that has a node set value in the **Variables** or **XWatch** view.
- You click a tree fragment in the **Variables** or **XWatch** view.
- You click an XPath expression evaluated to a node set in the **Variables** or **XWatch** view.

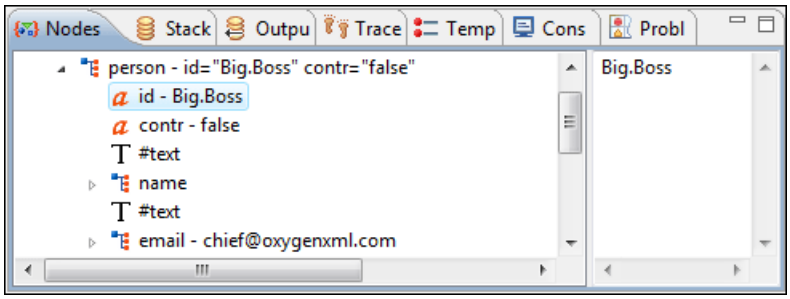


Figure 630: Node Set view

The nodes / values set is presented in a tree-like fashion. Nodes from a defined namespace bound to a prefix are displayed using the qualified name. If the namespace is not bound to a prefix, the namespace URI is presented before the node name. The value of the selected attribute or node is displayed in the right side panel.

Important: Remarks:

- For longer values in the right side panel, the interface displays it with an ellipsis (...) at the end. A more detailed value is available as a tooltip when hovering over it.
- Clicking a record highlights the location of that node in the source or stylesheet view.

Variables View

The **Variables** view displays variables and parameters (local and global), along with their values. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

Variables and parameters play an important role during an XSLT/XQuery transformation. Oxygen XML Editor plugin uses the following icons to differentiate variables and parameters:

- V - Global variable.
- {V} - Local variable.
- P - Global parameter.
- {P} - Local parameter.

The following value types are available:

- **Boolean**
- **String**
- **Date** - XSLT 2.0 / 3.0 only.
- **Number**
- **Set**
- **Object**
- **Fragment** - Tree fragment.
- **Any**
- **Undefined** - The value was not yet set, or it is not accessible.

  Note:

  When Saxon 6.5 is used, if the value is unavailable, then the following message is displayed in the **Value** field: "The variable value is unavailable".

  When Saxon 9 is used:

  - If the variable is not used, the **Value** field displays "The variable is declared but never used".
  - If the variable value cannot be evaluated, the **Value** field displays "The variable value is unavailable".
- **Document**
- **Element**
- **Attribute**
- **ProcessingInstruction**
- **Comment**
- **Text**

- **Namespace**
- **Evaluating** - Value under evaluation.
- **Not Known** - Unknown types.

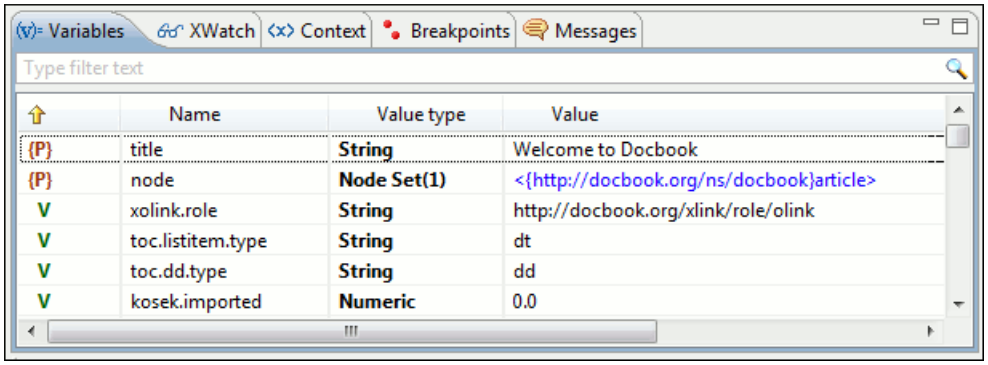


Figure 631: Variables View

Table 72: Variables Columns

Column	Description
Name	Name of variable / parameter.
Value Type	Type of variable/parameter.
Value	Current value of variable / parameter.

The value of a variable (the **Value** column) can be copied to the clipboard for pasting it to other editor areas with the **Copy value** action from the contextual menu. This is useful if you have long and complex values that cannot be easily remembered just by looking at them once.

Important: Remarks:

- Local variables and parameters are the first entries presented in the table.
- Clicking a record highlights the variable definition line.
- Variable values could differ depending on the transformation engine used or stylesheet version set.
- If the value of the variable is a node set or a tree fragment, clicking it causes the **Node Set** view to be shown with the corresponding set of values.
- Variable table values can be sorted by clicking the corresponding column header. Clicking the column header switches between the orders: ascending, descending, no sort.

Multiple Output Documents in XSLT 2.0 and XSLT 3.0

For XSLT 2.0 and XSLT 3.0 stylesheets that store the output in multiple files by using the `xsl:result-document` instruction, the content of the file created in this way is displayed dynamically while the transformation is running in an output view. There is one tab for each `xsl:result-document` instruction in the **Result Documents** view so that the output is not mixed while still being presented in multiple views.

Steps in a Typical Debugging Process

Depending on your situation and needs, the debugging process might be more complex, but the following procedure is an example of a typical debugging process:

1. Open the source XML document and the XSLT/XQuery document.
2. If you are in the **Editor** *perspective*, switch to the **XSLT Debugger** or **XQuery Debugger** *perspective* with one of the following actions:
   - Select **Window** > **Open Perspective** > **Other** > **Oxygen XSLT Debugger/XQuery Debugger**.

- Select the **Debug scenario** action on the toolbar.. This action initializes the Debugger *perspective* with the parameters of the transformation scenario. Any modification applied to the scenario parameters (the transformer engine, XSLT parameters, transformer extensions, etc.) will be saved back in the scenario when exiting from the Debugger *perspective*.

3. Select the source XML document in the XML source selector of the Control toolbar. In the case of XQuery debugging, if your XQuery document has no implicit source, set the source selector value to **NONE**.
4. Select the XSLT/XQuery document in the XSL/XQuery selector of the Control toolbar.
5. Set XSLT/XQuery parameters using the **Configure parameters** button on the Control toolbar.
6. Set one or more breakpoints.
7. Step through the stylesheet using the following buttons available on the Control toolbar:
   - **Step into**
   - **Step over**
   - **Step out**
   - **Run**
   - **Run to cursor**
   - **Run to end**
   - **Pause**
   - **Stop**
8. Examine the data in the information views to find the bug in the transformation process.

   For more information about fixing bugs in the transformation, see: Identify the XSLT / XQuery Expression that Generated Particular Output on page 1218.

Related Information:

Identify the XSLT / XQuery Expression that Generated Particular Output on page 1218

Identify the XSLT / XQuery Expression that Generated Particular Output

To quickly spot the XSLT templates or XQuery expressions with problems, it is important to know what XSLT template in the XSLT stylesheet (or XQuery expression in the XQuery document) and what element in the source XML document generated a specified area in the output.

Some of the debugging capabilities (for example, **Step in**) can be used for this purpose. Using **Step in**, you can see how output is generated and link it with the XSLT/XQuery element being executed in the current source context. However, this can become difficult on complex XSLT stylesheets or XQuery documents that generate a large output.

You can click particular text in the **Output** view and the editor will select the XML source context and the XSLT template/XQuery element that generated that text. Also, inspecting the whole stack of XSLT templates/XQuery elements that determined the state of the XSLT/XQuery processor at the moment of generating the specified output area speeds up the debugging process.

This is an example of a typical procedure for identifying an expression that generated particular output:

1. Switch to the **XSLT Debugger** or **XQuery Debugger** *perspective* with one of the following actions:
   - Select **Window** > **Open Perspective** > **Other** > **Oxygen XSLT Debugger/XQuery Debugger**.
   - Select the **Debug scenario** action on the toolbar.. This action initializes the Debugger *perspective* with the parameters of the transformation scenario. Any modification applied to the scenario parameters (the transformer engine, XSLT parameters, transformer extensions, etc.) will be saved back in the scenario when exiting from the Debugger *perspective*.
2. Select the source XML document in the XML source selector of the Control toolbar. In the case of XQuery debugging, if your XQuery document has no implicit source, set the source selector value to **NONE**.
3. Select the XSLT/XQuery document in the XSL/XQuery selector of the Control toolbar.
4. Select the appropriate engine in the XSLT/XQuery engine selector of the Control toolbar.

5. Set XSLT/XQuery parameters using the **Configure parameters** button on the Control toolbar.
6. Apply the XSLT stylesheet or XQuery transformation using the **Run to end** button that is available on the Control toolbar.
7. Inspect the mapping by clicking a section of the output in the **Output** view.

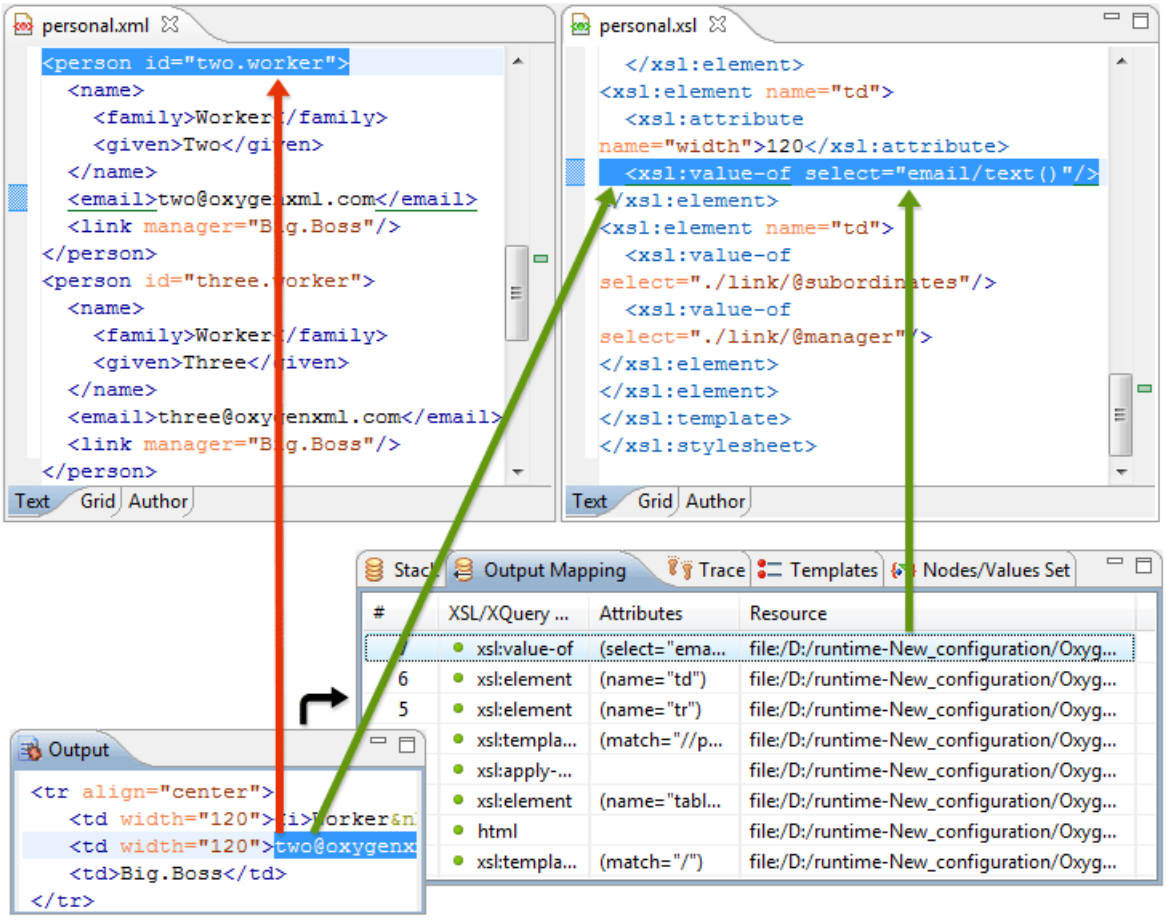


Figure 632: Text Output to Source Mapping

This action will highlight the XSLT / XQuery element and the XML source context. This XSLT template/XQuery element that is highlighted in the XSLT/XQuery editor represents only the top of the stack of XSLT templates/ XQuery elements that determined the state of the XSLT/XQuery processor at the moment of generating the clicked output section. In the case of complex transformations, inspecting the whole stack of XSLT templates/ XQuery elements speeds up the debugging process. This stack is available in the **Output Mapping Stack** view.

Related Information:

Output Mapping Stack View on page 1213
Trace View on page 1214
Templates View on page 1215

Using Breakpoints

The Oxygen XML Editor plugin XSLT/XQuery Debugger allows you to interrupt XSLT/XQuery processing to gather information about variables and processor execution at particular points. To ensure *breakpoints* are persistent between work sessions, they are saved at project level. You can set a maximum of 100 *breakpoints* per project.

Inserting Breakpoints

To insert a *breakpoint*, follow these steps:

1. Click the line where you want to insert the *breakpoint* in the XML source document or the XSLT/XQuery document. *Breakpoints* are automatically created on the ending line of a start tag, even if you click a different line.
2. Right-click the vertical stripe on the left side of the editor panel and select **Add breakpoint**.

Result:

Once you insert a *breakpoint*, it is automatically added to the list in the **Breakpoints** view and you can edit its associated *condition*. A *breakpoint* can have an associated break condition that represents an XPath expression evaluated in the current debugger context. In order to be processed, their evaluation result should be a boolean value. A *breakpoint* with an associated condition only stops the execution of the Debugger if the *breakpoint condition* is evaluated as **true**.

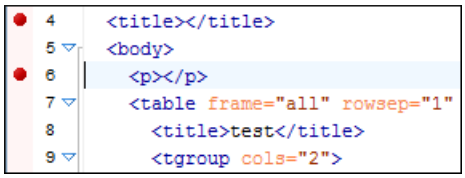


Figure 633: Example: Breakpoints

Tip: You can configure the color and how *breakpoints* are shown from the Eclipse **Annotations** preferences page (**Window ('Eclipse' on Mac OSX)** > **Preferences** > **General** > **Editors** > **Text Editors** > **Annotations**).

Removing Breakpoints

To remove a *breakpoint*, Right-click the *breakpoint* icon (●) in the vertical stripe on the left side of the editor panel and select **Remove breakpoint**.

Related Information:

Breakpoints View on page 1209

Performance Profiling of XSLT Stylesheets and XQuery Documents

Whether you are trying to identify a performance issue that is causing your production XSLT/XQuery transformation to not meet customer expectations or you are trying to proactively identify issues prior to deploying your XSLT/XQuery transformation, using the XSLT/XQuery profiler feature is essential to helping you save time and ultimately ensure a better performing, more scalable XSLT/XQuery transformation.

The XSLT/XQuery profiling feature can use any available XSLT/XQuery processor that can be used for debugging and it is available from the debugging *perspective*.

Enabling the Profiler

Enabling and disabling the profiler is controlled by the **Profiler** button from the debugger Control toolbar. The XSLT/XQuery profiler is off by default. This option is not available during a debugger session so you need to set it before starting the transformation. For information about a common debugging procedure, see Steps in a Typical Debugging Process on page 1217.

Profiling Information Views

Immediately after enabling the profiler, two new information views are added to the current debugger information views:

- **Invocation tree** view on left side
- **Hotspots** view on right side

Profiling data is available only after the transformation ends successfully.

On the left side (**Invocation tree** view), you can examine how style instructions are processed. This result view is also named call-tree, as it represents the order of style processing. The profiling result shows the duration time for each of the style-instruction including the time needed for its called children.

On the right side (**Hotspots** view), you can immediately spot the time the processor spent in each instruction. As an instruction usually calls other instructions, the used time of the called instruction is extracted from the duration time of the caller (the hotspot only presents the inherent time of the instruction).

Source Backmapping

In either the **Invocation tree** or **Hotspots** view, you can use the backmapping feature to find the XSLT stylesheet or XQuery expression definition. Clicking the selected item causes Oxygen XML Editor plugin to highlight the XSLT stylesheet or XQuery expression source line where the instruction is defined.

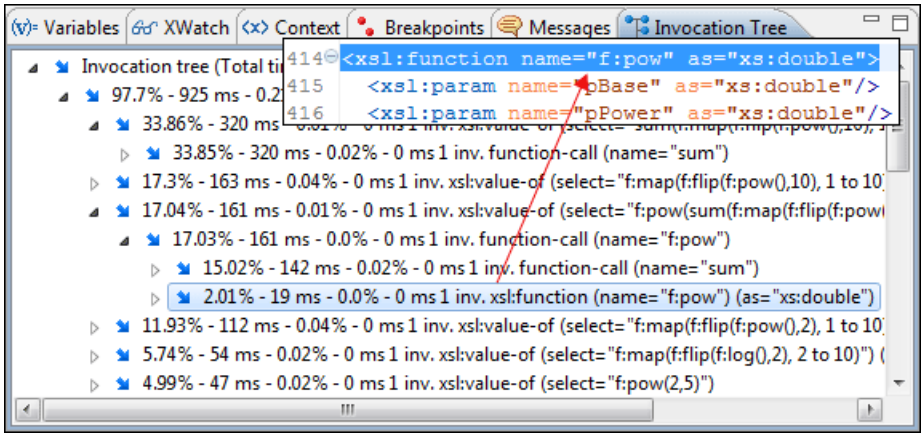


Figure 634: Source Backmapping

Saving and Customizing Profiling Data

The profiling data can be saved (exported) into XML and HTML format. In either the **Invocation tree** or **Hotspots** view, right-click anywhere in the view and select **Export to XML** or **Export to HTML**. The HTML report can be customized based upon the profiling raw data. When you select **Export to HTML**, Oxygen XML Editor plugin will save it as XML and apply an XSLT stylesheet to render the report as XML. You can customize these stylesheets to suit your needs. They are located in: *[OXYGEN_INSTALL_DIR]*`/frameworks/profiler/`.

Other Profiling Notes

- If you want to change the XSLT/XQuery profiler settings, use the contextual menu and choose the corresponding **View settings** entry.
- Profiling exhaustive transformations may run into an **OutOfMemory** error due to the large amount of information being collected. If this is the case, you can close unused projects when running the profiling or use high values for Java VM options `-Xms` and `-Xmx`. If this does not help you can shorten your source XML file and try again.
- For more information about the XSLT/XQuery Profiler, watch our video demonstration:

  https://www.youtube.com/embed/4ftHschjLqA

Invocation Tree View

The **Invocation Tree** view shows a top-down call tree that represents how XSLT instructions or XQuery expressions are processed. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

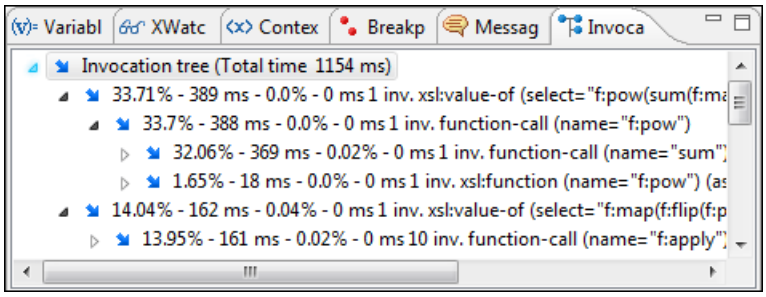


Figure 635: Invocation Tree View

The entries in the invocation tree include a few possible icons that indicate the following:

- - Points to a call whose inherent time is insignificant compared to its total time.
- - Points to a call whose inherent time is significant compared to its total time (greater than 1/3rd of its total time).

Every entry in the invocation tree includes textual information that depends on the **XSLT/XQuery profiler settings**:

- A percentage number of the total time that is calculated with respect to either the root of the tree or the calling instruction.
- A total time measurement in milliseconds or microseconds. This is the total execution time that includes calls into other instructions.
- A percentage number of the inherent time that is calculated with respect to either the root of the tree or the calling instruction.
- An inherent time measurement in milliseconds or microseconds. This is the inherent execution time of the instruction.
- An invocation count that shows how often the instruction has been invoked on this call-path.
- An instruction name that contains also the attributes description.

The **Invocation Tree** view also includes the following contextual menu actions:

Export to HTML

Selecting this option will save the profiling data as XML and then apply an XSLT stylesheet to render the report as HTML. These stylesheets are included in the subfolder: *[OXYGEN_INSTALL_DIR]*`/frameworks/profiler/`. You can use them to customize your own report based on the profiling raw data.

Export to XML

Use this option to save the profiling data as an XML file in a specified location.

View settings

Opens the XSLT/XQuery Profiler preferences page that allows you to configure various profiling settings.

Hotspots View

The **Hotspots** view displays a list of all instruction calls that lie above the threshold defined in the **XSLT/XQuery profiler settings**. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

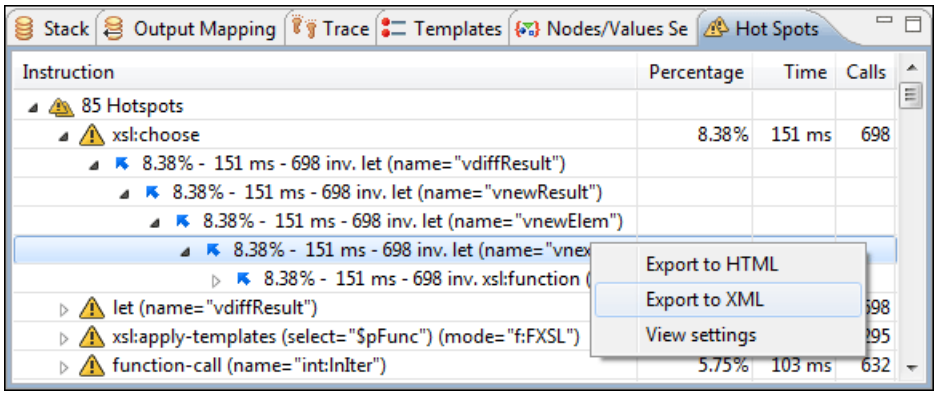


Figure 636: Hotspots View

By opening a hotspot instruction entry, the tree of back-traces leading to that instruction call are calculated and shown.

Every hotspot is described by the values from the following columns:

- **Instruction** - The name of the instruction.
- **Percentage** - The percentage number for this hotspot entry with respect to the total time.
- **Time** - The inherent time in milliseconds or microseconds of how much time has been spent in the hotspot. All calls into this instruction are summed up regardless of the particular call sequence.
- **Calls** - The invocation count of the hotspot entry.

If you click the ⚠ handle on the left side of a hotspot, a tree of back-traces will be shown.

Every entry in the backtrace tree has textual information attached to it that depends on the **XSLT/XQuery profiler settings**:

- A percentage number that is calculated with respect to either the total time or the called instruction.
- A time measured in milliseconds or microseconds of how much time has been contributed to the parent hotspot on this call-path.
- An invocation count that shows how often the hotspot has been invoked on this call-path.

  Note: This is not the number of invocations of this instruction.
- An instruction name that also contains its attributes.

The **Hotspots** view also includes the following contextual menu actions:

Export to HTML

Selecting this option will save the profiling data as XML and then apply an XSLT stylesheet to render the report as HTML. These stylesheets are included in the subfolder: *[OXYGEN_INSTALL_DIR]*`/frameworks/profiler/`. You can use them to customize your own report based on the profiling raw data.

Export to XML

Use this option to save the profiling data as an XML file in a specified location.

View settings

Opens the XSLT/XQuery Profiler preferences page that allows you to configure various profiling settings.

Debugging XSLT that Call Java Extensions

It is possible to debug XSLT that call Java extensions. This is achieved through a transformation scenario in which the Java extensions are specified, and the debugging can be done based upon the same scenario.

To debug XSLT with Java extensions, follow this procedure:

1. Create an XSLT transformation scenario for your XSLT document (select **Configure Transformation Scenario(s)** action from the toolbar, then click **New**, and select **XSLT transformation**).

2. In the **New scenario** dialog box, click the **Extensions** button (in the **XSLT** tab), specify the Java extensions (JAR libraries) that are needed, and click **OK**.
3. Once you are finished configuring the transformation scenario, click **OK**, then select **Save and close**.
4. Use the **Debug scenario** action on the toolbar and the debugging will be based upon the same transformation scenario you just configured and saved.

Tip: You could achieve this during a typical debugging process by specifying the Java extensions using the **Edit extensions** button on the debugger control toolbar.

Related Information:

Validating XSLT Stylesheets that Call Java Extensions on page 623

Debugging Java Extensions

The XSLT/XQuery debugger does not step into Java classes that are configured as XSLT/XQuery extensions of the transformation. To step into Java classes, inspect variable values, and set *breakpoints* in Java methods, you can set up a Java debug configuration in an IDE (such as the Eclipse SDK) as described in the following steps:

1. Create a debug configuration.
   a) Set at least 256 MB as heap memory for the Java virtual machine (recommended 512 MB) by setting the `-Xmx` parameter in the debug configuration (for example, "-Xmx512m").
   b) Make sure the *[OXYGEN_INSTALL_DIR]*`/lib/oxygen.jar` file and your Java extension classes are on the Java classpath.

      The Java extension classes should be the same classes that were set as an extension of the XSLT/XQuery transformation in the debugging *perspective*.
   c) Set the class *ro.sync.exml.Oxygen* as the main Java class of the configuration.

      The main Java class *ro.sync.exml.Oxygen* is located in the `oxygen.jar` file.
2. Start the debug configuration.

   Now you can set *breakpoints* and inspect Java variables as in any Java debugging process executed in the selected IDE (Eclipse SDK, and so on.).

Supported Processors for XSLT / XQuery Debugging

The following built-in XSLT processors are integrated in the debugger and can be selected in the Control Toolbar:

- **Saxon 9.8.0.8 HE (Home Edition)** - a limited version of the Saxon 9 processor, capable of running XSLT 1.0, XSLT 2.0 / 3.0 basic and XQuery 1.0 transformations, available in both the XSLT debugger and the XQuery one,
- **Saxon 9.8.0.8 PE (Professional Edition)** - capable of running XSLT 1.0 transformations, XSLT 2.0 basic ones and XQuery 1.0 ones, available in both the XSLT debugger and the XQuery one,
- **Saxon 9.8.0.8 EE (Enterprise Edition)** - a schema aware processor, capable of running XSLT 1.0 transformations, XSLT 2.0 /3.0 basic ones, XSLT 2.0 / 3.0 schema aware ones and XQuery 1.0 / 3.0 ones, available in both the XSLT debugger and the XQuery debugger,
- **Saxon 6.5.5** - capable of running only XSLT 1.0 transformations, available only in the XSLT debugger,
- **Xalan 2.7.2** - capable of running only XSLT 1.0 transformations, available only in the XSLT debugger.

Author Mode Customization

16

Topics:

- Author Mode Customization Guide
- CSS Support in Author Mode
- Creating and Running Automated Tests
- API Frequently Asked Questions (API FAQ)

This section contains an Author Mode Customization Guide on page 1225, CSS Support in Author Mode on page 1315, a collection of Frequently Asked Questions regarding the Oxygen XML Editor plugin API, and other topics in regards to customizing the **Author** mode.

Author Mode Customization Guide

The **Author** mode editor of Oxygen XML Editor plugin was designed to provide a user-friendly interface for editing XML documents. **Author** combines the power of source editing with the intuitive interface of a word processor. You can customize the **Author** mode editor to support new custom XML formats or to change how standard XML formats are edited.

Although Oxygen XML Editor plugin includes built-in, configured *frameworks* for DocBook, DITA, TEI, and XHTML you might need to create a customization of the editor to handle other types of documents. A common use case is when your organization holds a collection of XML document types used to define the structure of internal documents and they need to be visually edited by people with no experience working with XML files.

There are several ways to customize the editor:

1. Create a CSS file defining styles for the XML elements you will work with, and create XML files that reference the CSS through an `xml-stylesheet` processing instruction.
2. Fully configure a *framework*. This involves putting together the CSS stylesheets, XML schemas, actions, menus, bundling them, and distributing an archive. The CSS and GUI elements are settings for the Oxygen XML Editor plugin **Author** mode. The other settings such as the templates, catalogs, and transformation scenarios are general settings and are enabled whenever the association is active, regardless of the editing mode (**Text**, **Grid**, or **Author**).

Simple Customization Tutorial

The most important elements of a document type customization are represented by an XML Schema to define the XML structure, the CSS to render the information and the XML instance template that links the first two together.

XML Schema

To provide as-you-type validation and to compute valid insertion proposals, Oxygen XML Editor plugin needs an XML grammar (XML Schema, DTD, or RelaxNG) associated to the XML. The grammar specifies how the internal structure of the XML is defined. For information about associating a schema and how Oxygen XML Editor plugin detects the schema, see Associating a Schema to XML Documents on page 579.

Consider a use-case in which several users are testing a system and must send report results to a content management system. The customization should provide a visual editor for these kind of documents. The following XML Schema, `test_report.xsd` defines a report with results of a testing session. The report

consists of a title, few lines describing the test suite that was run, and a list of test results (each with a name and a boolean value indicating if the test passed or failed).

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
    <xs:element name="report">
        <xs:complexType>
            <xs:sequence>
                <xs:element ref="title"/>
                <xs:element ref="description"/>
                <xs:element ref="results"/>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
    <xs:element name="title" type="xs:string"/>
    <xs:element name="description">
        <xs:complexType>
            <xs:sequence maxOccurs="unbounded">
                <xs:element name="line">
                    <xs:complexType mixed="true">
                        <xs:sequence minOccurs="0"
                            maxOccurs="unbounded">
                            <xs:element name="important"
                              type="xs:string"/>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>

    <xs:element name="results">
        <xs:complexType>
            <xs:sequence maxOccurs="unbounded">
                <xs:element name="entry">
                    <xs:complexType>
                        <xs:sequence>
                            <xs:element name="test_name"
                              type="xs:string"/>
                            <xs:element name="passed"
                               type="xs:boolean"/>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
        </xs:complexType>
    </xs:element>
</xs:schema>
```

CSS Stylesheet

A set of rules must be defined for describing how the XML document is to be rendered in **Author** mode. This is done using Cascading Style Sheets (CSS). CSS is a language used to describe how an HTML or XML document should be formatted by a browser. CSS is widely used in the majority of websites.

The elements from an XML document are displayed in the layout as a series of boxes. Some of the boxes contain text and may flow one after the other, from left to right. These are called inline boxes. There are also other type of boxes that flow one below the other (such as paragraphs). These are called block boxes.

For example, consider the way a traditional text editor arranges the text. A paragraph is a block, because it contains a vertical list of lines. The lines are also blocks. However, blocks that contains inline boxes arrange its children in a horizontal flow. That is why the paragraph lines are also blocks, while the traditional "bold" and "italic" sections are represented as inline boxes.

The CSS allows us to specify that some elements are displayed as tables. In CSS, a table is a complex structure and consists of rows and cells. The `table` element must have children that have a *table-row* style. Similarly, the `row` elements must contain elements with a *table-cell* style.

To make it easy to understand, the following section describes how each element from a schema is formatted using a CSS file. Note that this is just one of infinite possibilities for formatting the content.

`report`

This element is the root element of a report document. It should be rendered as a box that contains all other elements. To achieve this the display type is set to **block**. Additionally, some margins are set for it. The CSS rule that matches this element is:

```
report{
    display:block;
    margin:1em;
```

```
}
```

`title`

The title of the report. Usually titles have a large font. The **block** display is used so that the subsequent elements will be placed below it, and its font is changed to double the size of the normal text.

```
title {
    display:block;
    font-size:2em;
}
```

`description`

This element contains several lines of text describing the report. The lines of text are displayed one below the other, so the description has the **block** display. Also, the background color is changed to make it standout.

```
description {
    display:block;
    background-color:#EEEEFF;
    color:black;
}
```

`line`

A line of text in the description. A specific aspect is not defined and it just indicates that the display should be **block** style.

```
line {
    display:block;
}
```

`important`

The `important` element defines important text from the description. Since it can be mixed with text, its display property must be set to **inline**. Also, the text is emphasized with **bold**to make it easier to spot.

```
important {
    display:inline;
    font-weight:bold;
}
```

`results`

The `results` element displays the list of *test_names* and the results for each one. To make it easier to read, it is displayed as a **table**, with a green border and margins.

```
results{
    display:table;
    margin:2em;
    border:1px solid green;
}
```

`entry`

An item in the results element. The results are displayed as a table so the entry is a row in the table. Thus, the display is **table-row**.

```
entry {
    display:table-row;
}
```

`test_name`, `passed`

The name of the individual test, and its result. They are cells in the results table with the display set to **table-cell**. Padding and a border are added to emphasize the table grid.

```
test_name, passed{
    display:table-cell;
    border:1px solid green;
    padding:20px;
}

passed{
    font-weight:bold;
```

```
}
```

The full content of the CSS file `test_report.css` is:

```
report {
    display:block;
    margin:1em;
}

description {
    display:block;
    background-color:#EEEEFF;
    color:black;
}

line {
    display:block;
}

important {
    display:inline;
    font-weight:bold;
}

title {
    display:block;
    font-size:2em;
}

results{
    display:table;
    margin:2em;
    border:1px solid green;
}

entry {
    display:table-row;
}

test_name, passed{
    display:table-cell;
    border:1px solid green;
    padding:20px;
}

passed{
    font-weight:bold;
}
```

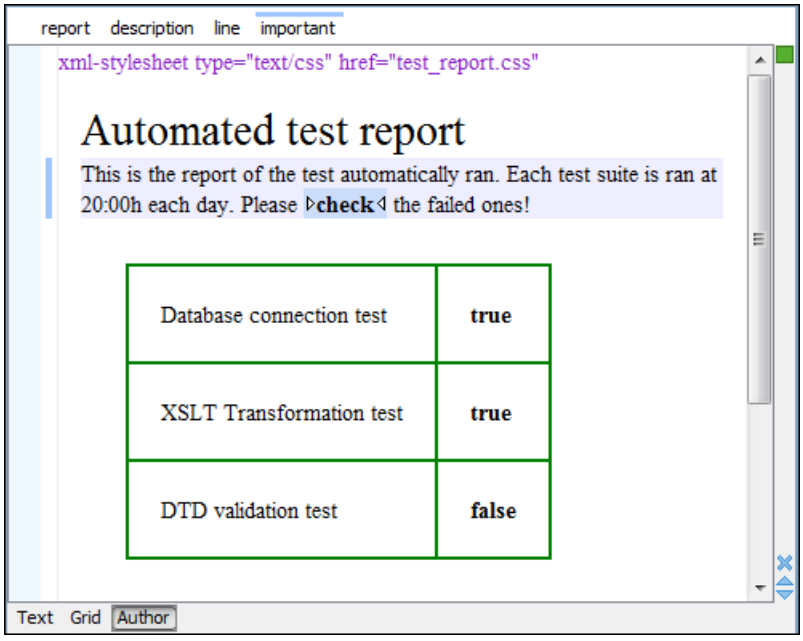


Figure 637: Report Rendered in Author Mode

Note: You can edit attributes in-place in the **Author** mode using form-based controls.

Associating a Stylesheet with an XML Document

The rendering of an XML document in the **Author** mode is driven by a CSS stylesheet that conforms to the version 2.1 of the CSS specification from the W3C consortium. Some CSS 3 features, such as namespaces and custom extensions, of the CSS specification are also supported.

There are several methods for associating a stylesheet (CSS) with an XML document:

1. Insert the `xml-stylesheet` processing instruction with the `type` attribute at the beginning of the XML document. If you do not want to alter your XML documents, you should create a new document type (*framework*).

   CSS example:

   ```
   <?xml-stylesheet type="text/css" href="test.css"?>
   ```

   Note: XHTML documents need a `link` element, with the `href` and `type` attributes in the `head` child element, as specified in the W3C CSS specification. XHTML example:

   ```
   <link href="/style/screen.css" rel="stylesheet" type="text/css"/>
   ```

   Tip: You can also insert the `xml-stylesheet` processing instruction by using the **Associate XSLT/CSS Stylesheet** action that is available on the toolbar or in the **XML** menu.
2. Add a new CSS file to a *framework* (document type). To do so, open the **Preferences** dialog box and go to **Document Type Association**. Edit the appropriate *framework*, open the **Author** tab, then the **CSS** subtab. Press the **New** button to add a new CSS file.

   Note: The predefined *frameworks* are read-only, so you need to **Extend** or **Duplicate** them to configure them as custom *frameworks*.

You can read more about associating a CSS to a document type in Customizing the Main CSS of a Framework on page 1297.

If a document has no CSS association or the referenced stylesheet files cannot be loaded, a default one is used. A warning message is also displayed at the beginning of the document, presenting the reason why the CSS cannot be loaded.

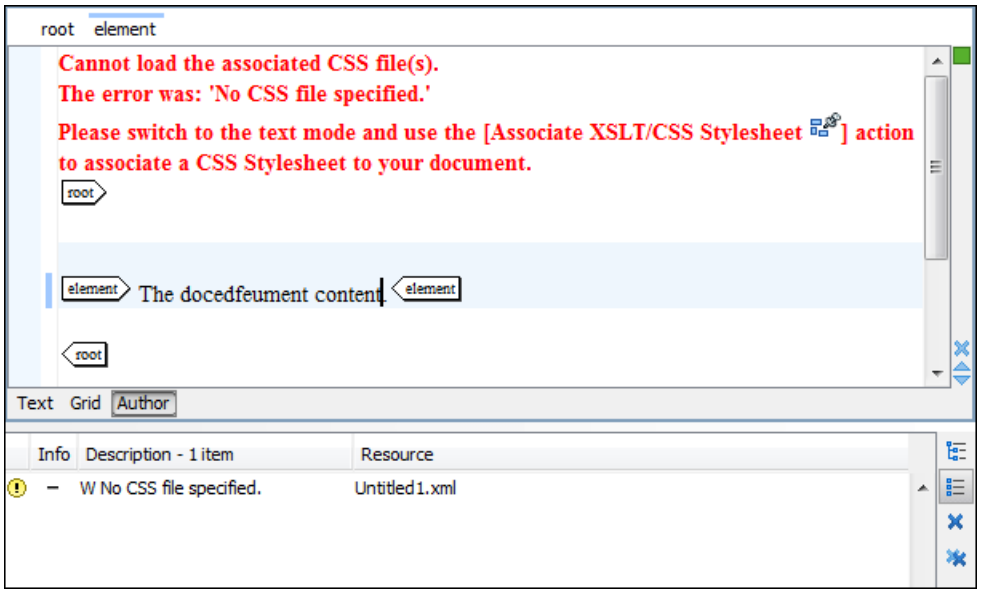


Figure 638: Document with no CSS association default rendering

XML Instance Template

Based on the XML Schema and CSS file Oxygen XML Editor plugin can help the content author in loading, editing, and validating the test reports. An XML document template must be created as a kind of skeleton that the users

can use as a starting point for creating new test reports. The template must be generic enough and reference the XML Schema file and the CSS stylesheet.

This is an example:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css" href="test_report.css"?>
<report xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="test_report.xsd">
  <title>Automated test report</title>
  <description>
    <line>This is the report of the test automatically ran.
      Each test suite is ran at 20:00h each day.
      Please <important>check</important> the failed ones!</line>
  </description>
  <results>
    <entry>
      <test_name>Database connection test</test_name>
      <passed>true</passed>
    </entry>
    <entry>
      <test_name>XSLT Transformation test</test_name>
      <passed>true</passed>
    </entry>
    <entry>
      <test_name>DTD validation test</test_name>
      <passed>false</passed>
    </entry>
  </results>
</report>
```

The processing instruction `xml-stylesheet` associates the CSS stylesheet to the XML file. The `href` pseudo attribute contains the URI reference to the stylesheet file. In our case the CSS is in the same directory as the XML file.

The next step is to place the XSD file and the CSS file on a web server and modify the template to use the HTTP URLs, like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-stylesheet type="text/css"
        href="http://www.mysite.com/reports/test_report.css"?>
<report xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
        xsi:noNamespaceSchemaLocation=
        "http://www.mysite.com/reports/test_report.xsd">
    <title>Test report title</title>
    <description>
.......
```

If you want to share the files with other team members, you could create an archive containing the *`test_report.xml`*, *`test_report.css`*, and *`test_report.xsd`* and send it to the other users.

Advanced Framework Customization

Oxygen XML Editor plugin supports individual document types and classes of document types through *frameworks*. A *framework* associates a document type or a class of documents with CSS stylesheets, validation schemas, catalog files, new files templates, transformation scenarios, and custom actions.

In this tutorial, we create a *framework* for a set of documents. As an example, we create a light documentation *framework* (similar to DocBook), then we set up a complete customization of the **Author** mode.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Related Information:

Built-in XML Frameworks on page 826
Predefined Document Types (Frameworks) on page 826

Creating the Basic Association

Let us go through an example of creating a custom document type (*framework*) and editing an XML document of this type.

First Step - XML Schema

To illustrate an example of creating an XML Schema a custom DocBook *framework*, suppose the documents are either `articles` or books, both composed of `sections`. The `sections` may contain `titles`, `paragraphs`,

`figures`, `tables`, and other `sections`. To complete the picture, each section includes a `def` element from another namespace.

The first schema file:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace="http://www.oxygenxml.com/sample/documentation"
    xmlns:doc="http://www.oxygenxml.com/sample/documentation"
    xmlns:abs="http://www.oxygenxml.com/sample/documentation/abstracts"
    elementFormDefault="qualified">

    <xs:import namespace=
    "http://www.oxygenxml.com/sample/documentation/abstracts"
     schemaLocation=
    "abs.xsd"/>
```

The namespace of the documents will be `http://www.oxygenxml.com/sample/documentation`. The namespace of the `def` element is `http://www.oxygenxml.com/sample/documentation/abstracts`.

Next, we define the structure of the sections. They all start with a title, then have the optional `def` element then either a sequence of other sections, or a mixture of paragraphs, images and tables.

```
<xs:element name="book" type="doc:sectionType"/>
<xs:element name="article" type="doc:sectionType"/>
<xs:element name="section" type="doc:sectionType"/>

<xs:complexType name="sectionType">
    <xs:sequence>
        <xs:element name="title" type="xs:string"/>
        <xs:element ref="abs:def" minOccurs="0"/>
        <xs:choice>
            <xs:sequence>
                <xs:element ref="doc:section" maxOccurs="unbounded"/>
            </xs:sequence>
            <xs:choice maxOccurs="unbounded">
                <xs:element ref="doc:para"/>
                <xs:element ref="doc:image"/>
                <xs:element ref="doc:table"/>
            </xs:choice>
        </xs:choice>
    </xs:sequence>
</xs:complexType>
```

The paragraph contains text and other styling markup, such as bold (b) and italic (i) elements.

```
<xs:element name="para" type="doc:paragraphType"/>

<xs:complexType name="paragraphType" mixed="true">
    <xs:choice minOccurs="0" maxOccurs="unbounded">
        <xs:element name="b"/>
        <xs:element name="i"/>
    </xs:choice>
</xs:complexType>
```

The `image` element has an attribute with a reference to the file containing image data.

```
<xs:element name="image">
    <xs:complexType>
        <xs:attribute name="href" type="xs:anyURI" use="required"/>
    </xs:complexType>
</xs:element>
```

The `table` contains a header row and then a sequence of rows (`tr` elements) each of them containing the cells. Each cell has the same content as the paragraphs.

```
 <xs:element name="table">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="header">
            <xs:complexType>
               <xs:sequence>
                   <xs:element name="td" maxOccurs="unbounded"
                        type="doc:paragraphType"/>
               </xs:sequence>
            </xs:complexType>
        </xs:element>
        <xs:element name="tr" maxOccurs="unbounded">
            <xs:complexType>
               <xs:sequence>
                   <xs:element name="td" type="doc:tdType"
                         maxOccurs="unbounded"/>
```

```
                </xs:sequence>
            </xs:complexType>
        </xs:element>
      </xs:sequence>
    </xs:complexType>
</xs:element>

<xs:complexType name="tdType">
    <xs:complexContent>
        <xs:extension base="doc:paragraphType">
            <xs:attribute name="row_span" type="xs:integer"/>
            <xs:attribute name="column_span" type="xs:integer"/>
        </xs:extension>
    </xs:complexContent>
</xs:complexType>
```

The `def` element is defined as a text only element in the imported schema `abs.xsd`:

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace=
     "http://www.oxygenxml.com/sample/documentation/abstracts">
    <xs:element name="def" type="xs:string"/>
</xs:schema>
```

Now the XML data structure will be styled.

Schema Settings

In the bottom section of the **Document Type** configuration dialog box, there are a series of tabs. The first one refers to the schema that is used for validation of the documents that match the defined **Association Rules**.

Important: If the document references a schema using a `DOCTYPE` declaration or a `xsi:schemaLocation` attribute, the schema from the document type configuration will not be used when validating.

Schema Type

Select from the combo box the value **XML Schema**.

Schema URI

Enter the value of the schema location (for example, `${frameworks}/sdf/schema/sdf.xsd`). Use the **${frameworks}** editor variable in the schema URI path instead of a full path to be valid for multiple Oxygen XML Editor plugin installations.

Important: The **${frameworks}** variable is expanded at the time of validation into the absolute location of the directory containing the *framework*.

Second Step - CSS

If you read the Simple Customization Tutorial then you already have some basic notions about creating simple styles. The example document contains elements from various namespaces, so you need to use CSS Level 3 extensions (supported by the **Author** mode layout engine) to associate specific properties with that element.

Defining the General Layout

Now the basic layout of the rendered documents is created.

Elements that are stacked one on top of the other are: `book`, `article`, `section`, `title`, `figure`, `table`, `image`. These elements are marked as having `block` style for display. Elements that are placed one after the other in a flowing sequence are: `b`, `i`. These will have `inline` display.

```
/* Vertical flow */
book,
section,
para,
title,
image,
ref {
    display:block;
}

/* Horizontal flow */
b,i {
    display:inline;
}
```

Important: Having `block` display children in an `inline` display parent results in Oxygen XML Editor plugin changing the style of the parent to `block` display.

Styling the `section` Element

The title of any section must be bold and smaller than the title of the parent section. To create this effect, a sequence of CSS rules must be created. The `*` operator matches any element, it can be used to match titles having progressive depths in the document.

```
title{
    font-size: 2.4em;
    font-weight:bold;
}
* * title{
    font-size: 2.0em;
}
* * * title{
    font-size: 1.6em;
}
* * * * title{
    font-size: 1.2em;
}
```

It's useful to have before the title a constant text, indicating that it refers to a section. This text can include also the current section number. The `:before` and `:after` pseudo elements will be used, plus the CSS counters.

First declare a counter named `sect` for each book or `article`. The counter is set to zero at the beginning of each such element:

```
book,
article{
    counter-reset:sect;
}
```

The `sect` counter is incremented with each `section`, that is a direct child of a book or an `article` element.

```
book > section,
article > section{
    counter-increment:sect;
}
```

The "static" text that will prefix the section title is composed of the constant "Section ", followed by the decimal value of the `sect` counter and a dot.

```
book > section > title:before,
article > section > title:before{
    content: "Section " counter(sect) ". ";
}
```

To make the documents easy to read, you add a margin to the sections. In this way the higher nesting level, the larger the left side indent. The margin is expressed relatively to the parent bounds:

```
section{
    margin-left:1em;
    margin-top:1em;
}
```

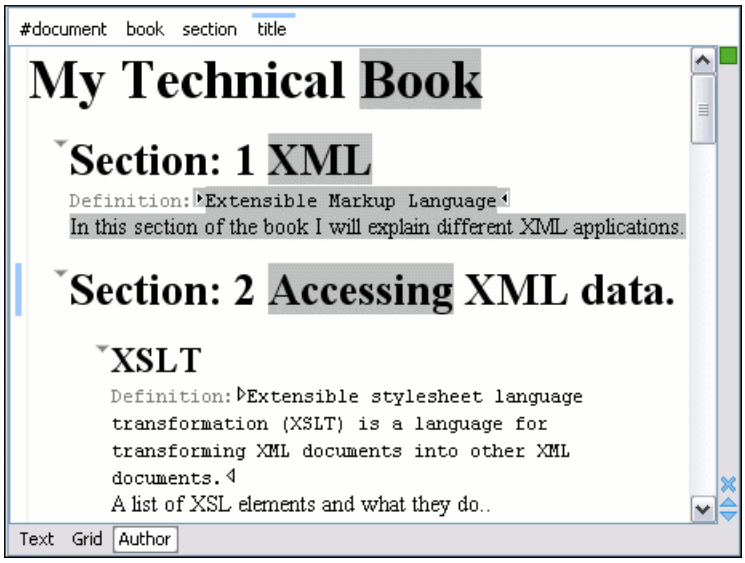


Figure 639: A sample of nested sections and their titles.

In the above screenshot you can see a sample XML document rendered by the CSS stylesheet. The selection "avoids" the text that is generated by the CSS "content" property. This happens because the CSS generated text is not present in the XML document and is just a visual aid.

Styling the Inline Elements

The "bold" style is obtained by using the `font-weight` CSS property with the value `bold`, while the "italic" style is specified by the `font-style` property:

```
b {
    font-weight:bold;
}

i {
    font-style:italic;
}
```

Styling Images

The CSS 2.1 does not specify how an element can be rendered as an image. To overpass this limitation, Oxygen XML Editor plugin supports a CSS Level 3 extension allowing to load image data from a URL. The URL of the image must be specified by one of the element attributes and it is resolved through the catalogs specified in Oxygen XML Editor plugin.

```
image{
    display:block;
    content: attr(href, url);
    margin-left:2em;
}
```

Our `image` element has the required attribute `href` of type `xs:anyURI`. The `href` attribute contains an image location so the rendered content is obtained by using the function:

```
attr(href, url)
```

The first argument is the name of the attribute pointing to the image file. The second argument of the `attr` function specifies the type of the content. If the type has the `url` value, then Oxygen XML Editor plugin identifies the content as being an image. If the type is missing, then the content will be the text representing the attribute value.

Oxygen XML Editor plugin handles both absolute and relative specified URLs. If the image has an *absolute* URL location (for example: "http://www.oasis-open.org/images/standards/oasis_standard.jpg") then it is loaded directly from this location. If the image URL is *relative* specified to the XML document (for example: "images/my_screenshot.jpg") then the location is obtained by adding this value to the location of the edited XML document.

An image can also be referenced by the name of a DTD entity that specifies the location of the image file. For example, if the document declares an entity **graphic** that points to a JPEG image file:

```
<!ENTITY graphic SYSTEM "depo/keyboard_shortcut.jpg" NDATA JPEG>
```

and the image is referenced in the XML document by specifying the name of the entity as the value of an attribute:

```
<mediaobject>
    <imageobject>
        <imagedata entityref="graphic" scale="50"/>
    </imageobject>
</mediaobject>
```

The CSS should use the functions `url`, `attr` and `unparsed-entity-uri` for displaying the image in the **Author** mode:

```
imagedata[entityref]{
    content: url(unparsed-entity-uri(attr(entityref)));
}
```

To take into account the value of the `width` attribute of the `imagedata` and use it for resizing the image, the CSS can define the following rule:

```
imagedata[width]{
  width:attr(width, length);
}
```

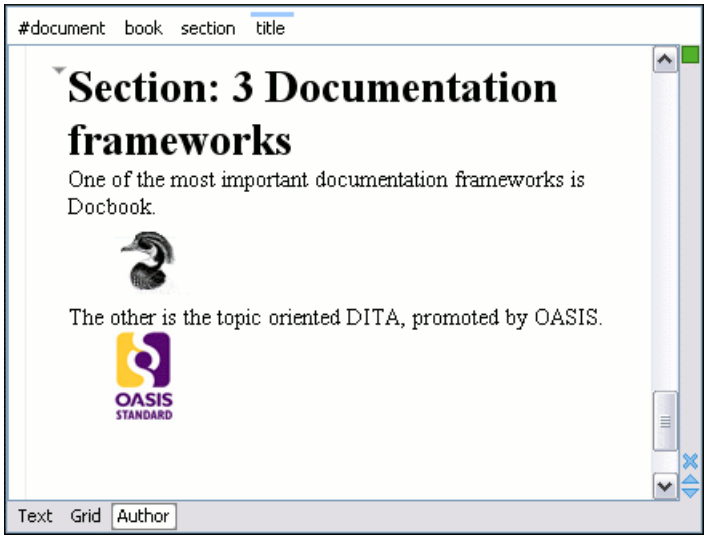


Figure 640: Samples of images in Author

Testing the Framework Customization

To test the new *framework* customization, create an XML instance that conforms with the association rules that you specified in your *framework* customization. You will not specify an XML Schema location directly in the document, using an `xsi:schemaLocation` attribute. Instead, Oxygen XML Editor plugin will detect its associated document type and use the specified schema.

```
<book xmlns="http://www.oxygenxml.com/sample/documentation"
      xmlns:abs="http://www.oxygenxml.com/sample/documentation/abstracts">

    <title>My Technical Book</title>
    <section>
        <title>XML</title>
        <abs:def>Extensible Markup Language</abs:def>
        <para>In this section of the book I will
           explain different XML applications.</para>
    </section>
</book>
```

When trying to validate the document there should be no errors. Now modify the `title` to `title2`. Validate again. This time there should be as error.

```
Invalid content was found starting with element
'title2'. One of '{"http://www.oxygenxml.com/sample/documentation":title}'
is expected.
```

Undo the tag name change, go to **Author** mode, and Oxygen XML Editor plugin should load the CSS from the *document type association* and create a layout similar to this:

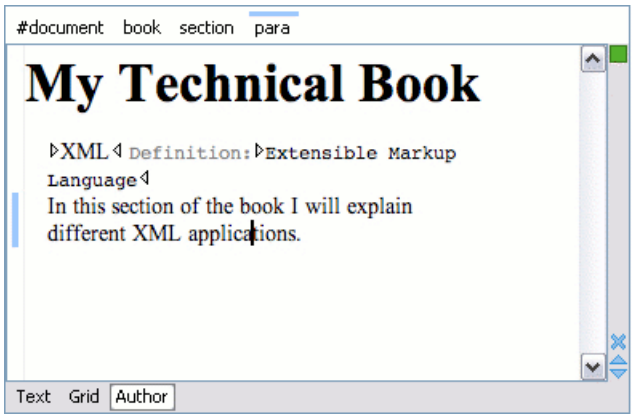


Figure 641: Example: Testing a Framework Customization

Organizing the Framework Files

First, create a new folder for your customized *framework* *[OXYGEN_INSTALL_DIR]*`/frameworks`. This folder will be used to store all files related to the documentation *framework*. The folder structure will look something like this:

```
oxygen
  frameworks
     sdf
       schema
       css
```

The `frameworks` directory is the container where all the Oxygen XML Editor plugin *framework* customizations are located. Each subdirectory contains files related to a specific type of XML documents (schemas, catalogs, stylesheets, CSS stylesheets, etc.) Distributing a *framework* means delivering a *framework* directory.

It is assumed that you have the right to create files and folders inside the Oxygen XML Editor plugin installation directory. If you do not have this right, you will have to install another copy of the program in a folder you have access to, the home directory for instance, or your desktop.

To test your *framework* distribution, copy it in the `frameworks` directory of the newly installed application and start Oxygen XML Editor plugin by running the provided start-up script files.

You should copy the created schema files `abs.xsd` and `sdf.xsd`, `sdf.xsd` being the master schema, to the `schema` directory and the CSS file `sdf.css` to the `css` directory.

Packaging and Deploying

Using a file explorer, go to the Oxygen XML Editor plugin *[OXYGEN_INSTALL_DIR]*`/frameworks` directory. Select the `sdf` directory and make an archive from it. Move it to another Oxygen XML Editor plugin installation (eventually on another computer). Extract it in the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory. Start Oxygen XML Editor plugin and test the association as explained above.

When deploying your customized `sdf` directory, make sure that your `sdf` directory contains the `sdf.framework` file (that is the file defined as External Storage in the **Document Type Association** preferences page shall always be stored inside the `sdf` directory). If your external storage points somewhere else Oxygen XML Editor plugin will not be able to update the *Document Type Association* options automatically on the deployed computers.

Adding/Editing a Framework (Document Type)

To add or edit a *framework* (document type), open the **Preferences** dialog box and go to **Document Type Association**. From this **Document Type Association** preferences page you can use the **New**, **Edit**, **Duplicate**, or **Extend** buttons to open a **Document Type** configuration dialog box that allows you to customize a new or existing document type (*framework*).

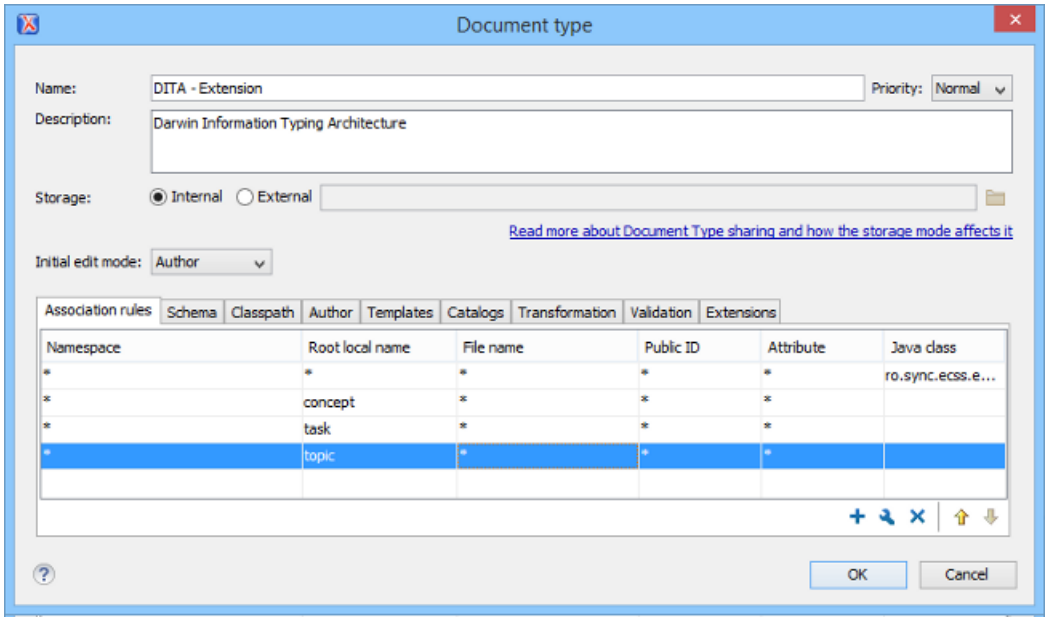


Figure 642: Document Type Configuration Dialog Box

You can specify the following properties for a document type:

- **Name** - The name of the document type.
- **Priority** - When multiple document types match the same document, the priority determines the order in which they are applied. It can be one of the following: Lowest, Low, Normal, High, Highest. The predefined document types that are already configured when the application is installed on the computer have the default Low priority.

  Note: *Frameworks* that have the same priority are sorted alphabetically.
- **Description** - The document type description displayed as a tool tip in the **Document Type Association** preferences page.
- **Storage** - The location where the document type is saved. If you select the **External** storage option, the document type is saved in the specified file with a mandatory `framework` extension, located in a subdirectory of the current `frameworks` directory. If you select the **Internal** storage option, the document type data is saved in the Oxygen XML Editor plugin internal options file.
- **Initial edit mode** - Allows you to select the initial editing mode for this document type: **Editor specific**, **Text**, **Author, Grid** and **Design** (available only for the W3C XML Schema editor). If the **Editor specific** option is selected, the initial editing mode is determined based upon the editor type. You can find the mapping between editors and edit modes in the **Edit modes** preferences page. You can impose an initial mode for opening files that match the association rules of the document type. For example, if the files are usually edited in the **Author** mode you can set it in the **Initial edit mode** combo box.

Note: You can also customize the initial mode for a document type in the **Edit modes** preferences page. Open the **Preferences** dialog box and go to **Editor** > **Edit modes**.

You can specify the **Association rules** used for determining a document type for an opened XML document. A rule can define one or more conditions. All conditions need to be fulfilled for a specific rule to be chosen. Conditions can specify:

- **Namespace** - The namespace of the document that matches the document type.
- **Root local name of document** - The local name of the document that matches the document type.
- **File name** - The file name (including the extension) of the document that matches the document type.

- **Public ID** (for DTDs) - The PUBLIC identifier of the document that matches the document type.
- **Attribute** - This field allows you to associate a document type depending on a certain value of the attribute in the root.
- **Java class** - Name of the Java class that is called to determine if the document type should be used for an XML document. Java class must either implement the *ro.sync.ecss.extensions.api.DocumentTypeCustomRuleMatcher* interface or extend the *ro.sync.ecss.extensions.api.DocumentTypeAdvancedCustomRuleMatcher* abstract class from the Author API.

In the **Schema** tab, you can specify the type and URI of schema used for validation and content completion of all documents from the document type, when there is no schema detected in the document.

You can choose one of the following schema types:

- DTD
- Relax NG schema (XML syntax)
- Relax NG schema (XML syntax) + Schematron
- Relax NG schema (compact syntax)
- XML Schema
- XML Schema + Schematron rules
- NVDL schema

Related Information:

Configuring and Managing Multiple CSS Styles on page 1315
Customizing the Main CSS of a Framework on page 1297

Configure Actions, Menus, and Toolbars for a Framework

You can configure actions, menus, and toolbars that are specific to a *framework* (document type) in the **Author** mode to gain a productive editing experience, by using the **Document Type** configuration dialog box.

To add or configure actions, menus, or toolbars follow this procedure:

1. Open the **Preferences** dialog box , go to **Document Types Association**, and select the *framework* for which you want to create an action.
2. Click **Edit** and in the **Document Type** configuration dialog box go to the **Author** tab, then go to **Actions**.
3. Click the **New** button and use the **Action** dialog box to create an action.

Configure the Insert Section Action for a Framework

This topic describes the procedure for defining the **Insert Section** action for a custom *framework*. It is assumed that the icon files, (`Section16.gif`) for the menu item and (`Section20.gif`) for the toolbar, are already available. Although you could use the same icon size for both the menu and toolbar, usually the icons from the toolbars are larger than the ones found in the menus. These files should be placed in your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).

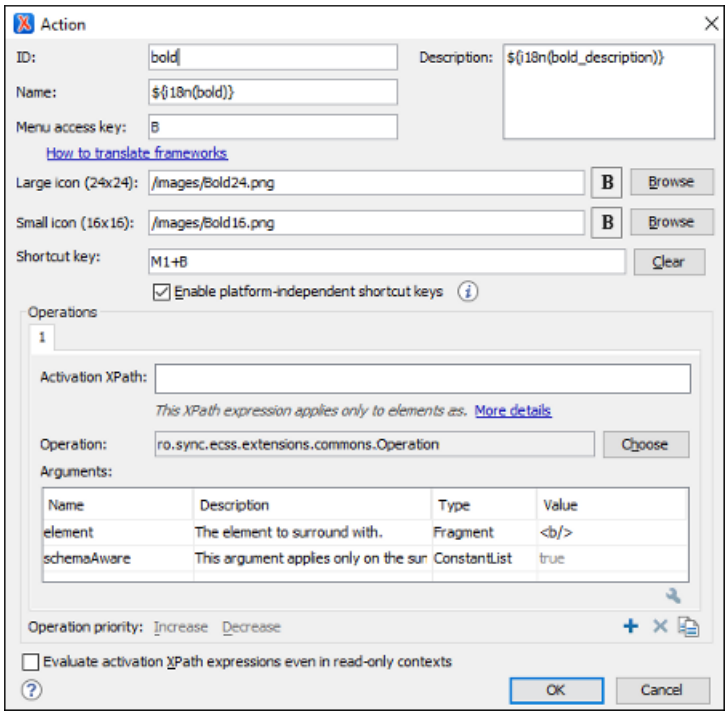


Figure 643: Action Dialog Box

1. Set the **ID** field to **insert_section**. This is a unique action identifier.
2. Set the **Name** field to **Insert Section**. This will be the action's name, displayed as a tooltip when the action is placed in the toolbar, or as the menu item name.
3. Set the **Menu access key** to **i**. On Windows, the menu items can be accessed using **Alt+letter** keys combination, when the menu is visible. The *letter* is visually represented by underlining the first letter from the menu item name having the same value.
4. Add a **Description**.
5. Set the **Large icon (20x20)** field to `${frameworks}/sdf/Section20.gif`. A good practice is to store the image files inside the *framework* directory and use editor variable **${framework}** to make the image relative to the *framework* location.

   If the images are bundled in a *JAR* archive together with some Java operations implementation, for instance, it might be convenient for you to reference the images not by the file name, but by their relative path location in the class-path.

   If the image file `Section20.gif` is located in the **images** directory inside the *JAR* archive, you can reference it by using **/images/Section20.gif**. The *JAR* file must be added into the **Classpath** list.
6. Set the **Small icon (16x16)** field to `${frameworks}/sdf/Section16.gif`.
7. Click the text field next to **Shortcut key** and set it to **Ctrl+Shift+S (Meta+Shift+S on Mac OS)**. This will be the key combination to trigger the action using the keyboard only.

   The shortcut is enabled only by adding the action to the main menu of **Author** mode, which contains all the actions that the author will have in a menu for the current document type.
8. At this time the action has no functionality added to it. Next you must define how this action operates. An action can have multiple operation modes. The first action mode enabled by the evaluation of its associated XPath expression will be executed when the action is triggered by the user. The Xpath expression needs to be version 2.0 and its scope must be only element and attribute nodes of the edited document. Otherwise, the expression will not return a match and will not trigger the action. If the expression is left empty, the action will be enabled anywhere in the scope of the root element. For this example we'll suppose you want allow the action to add a section only if the current element is either a `book`, `article` or another `section`.

   a) Set the XPath expression field to:

```
local-name()='section' or local-name()='book' or
 local-name()='article'
```

b) Set the **invoke operation** field to *InsertFragmentOperation* built-in operation, designed to insert an XML fragment at cursor position. This belongs to a set of built-in operations, a complete list of which can be found in the Author Default Operations section. This set can be expanded with your own Java operation implementations.
c) Configure the arguments section as follows:

```
<section xmlns=
"http://www.oxygenxml.com/sample/documentation">
     <title/>
</section>
```

`insertLocation` - leave it empty. This means the location will be at the cursor position.

`insertPosition` - select "**Inside**".

Configure the Insert Table Action for a Framework

This topic describes the procedure for defining the **Insert Table** action for a custom *framework*. Suppose that you want to create an action that inserts a table with three rows and three columns into a document and the first row is the table header. As with the insert section action, you will use the *InsertFragmentOperation* built-in operation.

Place the icon files for the menu item, and for the toolbar, in your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).

1. Set **ID** field to **insert_table**.
2. Set **Name** field to **Insert table**.
3. Set **Menu access key** field to **t**.
4. Set **Description** field to **Adds a table element**.
5. Set **Toolbar icon** to **${framework} / toolbarIcon.png**.
6. Set **Menu icon** to **${framework} / menuIcon.png**.
7. Set **Shortcut key** to **Ctrl + Shift + T (Command + Shift + T on OS X)**.
8. Set up the action's functionality:
   a) Set **XPath expression** field to `true()`.
   `true()` is equivalent with leaving this field empty.
   b) Set **Invoke operation** to use **InsertFragmentOperation** built-in operation that inserts an XML fragment to the cursor position.
   c) Configure operation's arguments as follows:

   fragment - set it to:

   ```
   <table xmlns=
   "http://www.oxygenxml.com/sample/documentation">
     <header><td/><td/><td/></header>
     <tr><td/><td/><td/></tr>
     <tr><td/><td/><td/></tr>
   </table>
   ```

   `insertLocation` - to add tables at the end of the section use the following code:

   ```
   ancestor::section/*[last()]
   ```

   `insertPosition` - Select **After**.

Configure the Main Menu for a Framework

Defined actions can be grouped into customized menus in the Oxygen XML Editor plugin menu bar.

1. Open the **Document Type** configuration dialog box, select your custom *framework*, and go to the **Author** tab.
2. Go to the **Menu** subtab. In the left side you have the list of actions and some special entries:
   - **Submenu** - Creates a submenu. You can nest an unlimited number of menus.
   - **Separator** - Creates a separator into a menu. This way you can logically separate the menu entries.
3. The right side of the panel displays the current actions for that menu tree. To change its name, click this label to select it, then press the **Edit** button.

4. Select the **Submenu** label in the left panel section and the appropriate label in the right panel section, then press the **Add as child** button. Change the submenu name to **Table**, using the **Edit** button.
5. Select the **Insert section** action in the left panel section and the **Table** label in the right panel section, then press the **Add as sibling** button.
6. Now select the **Insert table** action in the left panel section and the **Table** in the right panel section. Press the **Add as child** button.

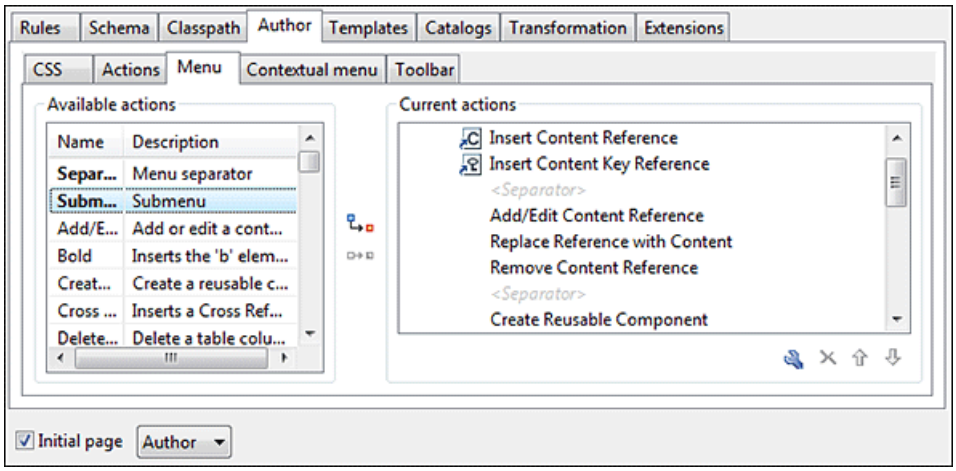


Figure 644: Configuring the Menu

When opening a test document for a custom *framework* in **Author** mode, the menu you created is displayed in the editor menu bar, between the **Tools** and the **Document** menus. The upper part of the menu contains generic **Author** mode actions (common to all document types) and the two actions created previously (with **Insert table** under the **Table** submenu).

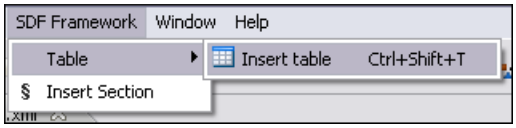


Figure 645: Author Mode Menu

Configure the Contextual Menu for a Framework

The contextual menu is displayed when you right-click in the **Author** editing area. You can only configure the bottom part of the menu, since the top part is reserved for a list of generic actions (such as Copy, Paste, Undo, etc.)

1. Open the **Document Type** configuration dialog box for the particular *framework* and go to the **Author** tab. Next, go to the **Contextual Menu** subtab.
2. Follow the same steps as explained in the Configuring the Main Menu, except changing the menu name because the contextual menu does not have a name.

   Note: You can choose to reuse a submenu that contains general authoring actions. In this case, all actions (both general and *framework*-specific ones) are grouped together under the same submenu.

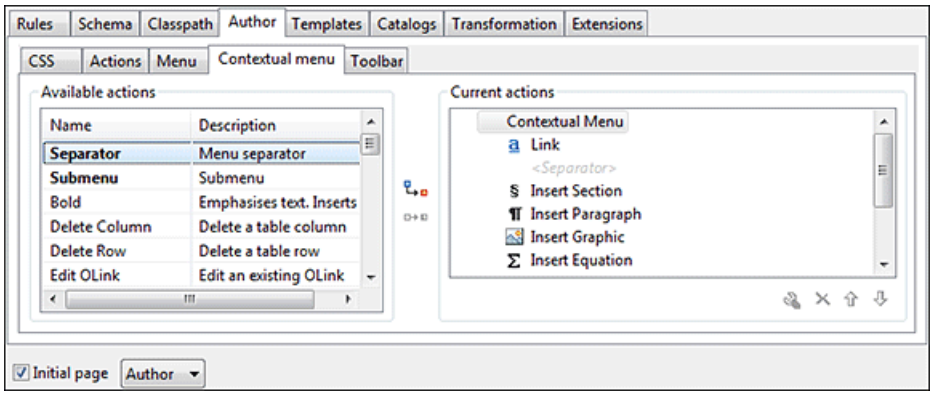


Figure 646: Configuring the Contextual Menu

To test it, open the test file, and open the contextual menu. In the lower part there is shown the **Table** sub-menu and the **Insert section** action.

Configure the Toolbars for a Framework

The procedure below describes how to add defined actions to a toolbar for a custom *framework*. These steps use examples from the two previous help topics that described how to define the **Insert Section** and **Insert Table** actions. You can also configure additional toolbars to add other custom actions.

1. Open the **Document Type** configuration dialog box for your custom *framework* and select the **Author** tab. Next, go to the **Toolbar** subtab.

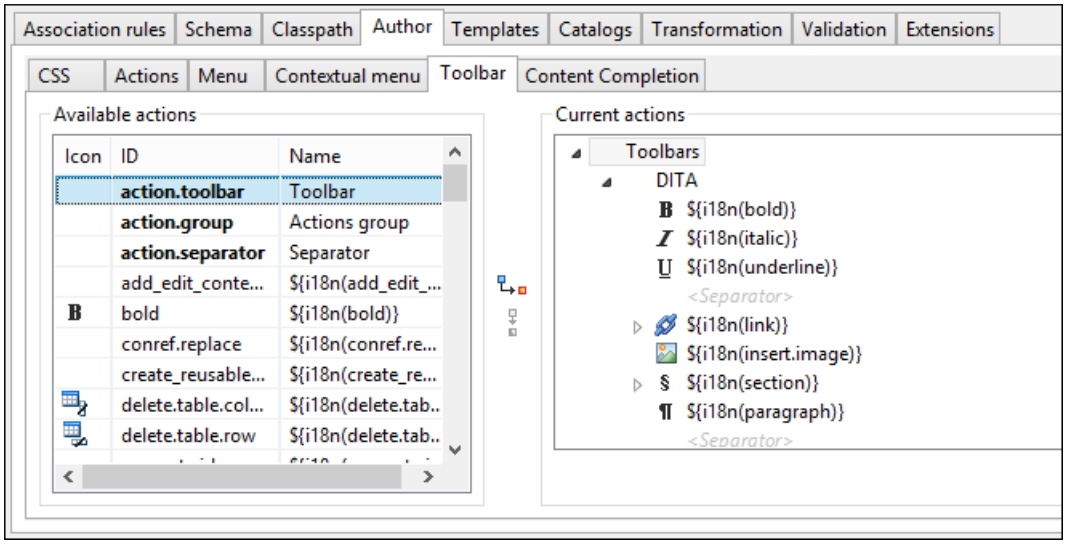


Figure 647: Configuring the Toolbar

The panel is divided in two sections: the left side contains a list of actions, while the right one contains an action tree, displaying the list of actions added in the toolbar. The special entry called *Separator* allows you to visually separate the actions in the toolbar.

2. Select the **Insert section** action in the left panel section and the **Toolbar** label in the right panel section, then press the **Add as child** button.
3. Select the **Insert table** action in the left panel section and the **Insert section** in the right panel section. Press the **Add as sibling** button.
   When opening a document of the particular *framework* in **Author** mode, the toolbar with the new buttons will be displayed in the toolbar area.

   Tip: If you have many custom toolbar actions, or want to group actions according to their category, add more toolbars with custom names and split the actions to better suit your purpose. If your toolbar is not displayed

when switching to the **Author** mode, right-click the main toolbar, select **Configure Toolbars**, and make sure the appropriate toolbar (such as the **Author Custom Actions** toolbar) is selected.

Configure Content Completion for a Framework

You can customize the content of the following **Author** controls, adding items (which, when invoked, perform custom actions) or filtering the default contributed ones:

- *Content Completion Assistant* window
- **Elements** view
- **Insert Element** menus (from the **Outline** view or breadcrumb contextual menus)

You can use the content completion customization support in a custom *framework* by following this procedure:

1. Open the **Document type** configuration dialog box for your custom *framework* and select the **Author** tab. Next, go to the **Content Completion** tab.

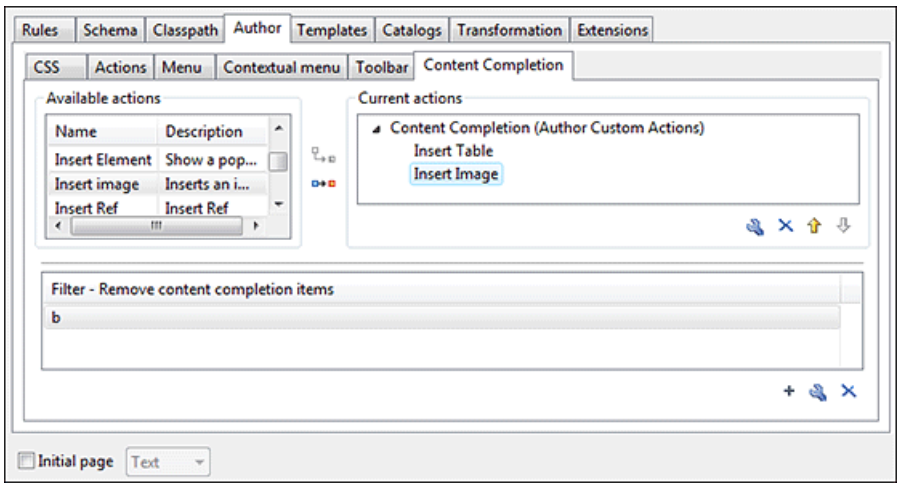


Figure 648: Customize Content Completion

The top side of the **Content Completion** section contains the list with all the actions defined within the custom *framework* and the list of actions that you decided to include in the *Content Completion Assistant* list of proposals. The bottom side contains the list with all the items that you decided to remove from the *Content Completion Assistant* list of proposals.

2. If you want to add a custom action to the list of current **Content Completion** proposals, select the action item from the **Available actions** list and press the **Add as child** or **Add as sibling** button to include it in the **Current actions** list. An **Insert Action** dialog box appears, giving you the possibility to select where to provide the selected action.

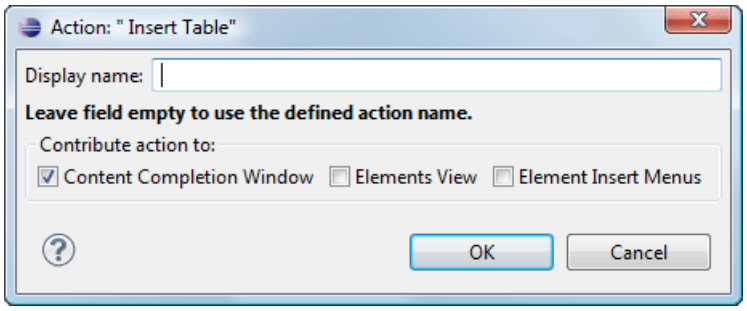


Figure 649: Insert Action Dialog Box

3. If you want to exclude a certain item from the **Content Completion** proposals, you can use the **Add** button from the **Filter - Remove content completion items** list. The **Remove item** dialog box is displayed, allowing you to input the item name and to choose the controls that filter it. The **Item name** combo box accepts wildcards.

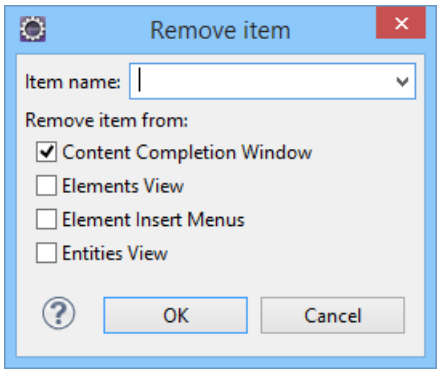


Figure 650: Remove Item Dialog Box

Author Mode Default Operations

The default operations for the **Author** mode, along with their arguments are as follows:

- **ChangeAttributeOperation**

  This operation allows you to add/modify/remove an attribute. You can use this operation in your own custom **Author** mode action to modify the value for a certain attribute on a specific XML element. The arguments of the operation are:

  - **name** - The attribute local name.
  - **namespace** - The attribute namespace.
  - **elementLocation** - The XPath location that identifies the element.
  - **value** - The new value for the attribute. If empty or null the attribute will be removed.
  - **editAttribute** - If an in-place editor exists for this attribute, it will automatically activate the in-place editor and start editing.
  - **removeIfEmpty** - The possible values are `true` and `false`. True means that the attribute should be removed if an empty value is provided. The default behavior is to remove it.
- **ChangePseudoClassesOperation**

  Operation that sets a list of pseudo-class values to nodes identified by an XPath expression. It can also remove a list of values from nodes identified by an XPath expression. The operation accepts the following parameters:

  - **setLocations** - An XPath expression indicating a list of nodes for which the specified list of pseudo-classes will be set. If it is not defined, then the element at the cursor position will be used.
  - **setPseudoClassNames** - A space-separated list of pseudo-class names that will be set on the matched nodes.
  - **removeLocations** - An XPath expression indicating a list of nodes from which the specified list of pseudo-classes will be removed. If it is not defined, then the element at the cursor position will be used.
  - **removePseudoClassNames** - A space-separated list of pseudo-class names that will be removed from the matched nodes.
  - **includeAllNodes** - The possible values are `yes` and no. If set to `yes`, comments, CDATA, and text nodes are included when evaluating XPath expressions. If set to no, they are ignored.
- **DeleteElementOperation**

  Deletes the node indicated by the `elementLocation` parameter XPath expression. If missing, the operation will delete the node at the cursor location.
- **DeleteElementsOperation**

  Deletes the nodes indicated by the `elementLocations` parameter XPath expression. If missing, the operation will delete the node at the cursor location.
- **ExecuteCommandLineOperation**

  This operation allows you to start a process executing a given command line. It has the following arguments:

  - **name** - The name of the operation (or name of the console panel that corresponds to the process run by an action built over this operation).

- **workingDirectory** - The path to the directory where the command line is executed. The default value is `"."` (current directory).
- **cmdLine** - The command line to be executed (accepts editor variables).
- **showConsole** - If set to `true`, the console panel will be displayed in Oxygen XML Editor plugin. The default value is `false`.

- **ExecuteMultipleActionsOperation**

  This operation allows the execution of a sequence of actions, defined as a list of action IDs. The actions must be defined by the corresponding *framework*, or one of the common actions for all *frameworks* supplied by Oxygen XML Editor plugin.

  - **actionIDs** - The action IDs list that will be executed in sequence, the list must be a string sequence containing the IDs separated by commas or new lines.
- **ExecuteMultipleWebappCompatibleActionsOperation**

  An implementation of an operation that runs a sequence of Oxygen XML Web Author-compatible actions, defined as a list of IDs.
- **ExecuteTransformationScenariosOperation**

  This operation allows running one or more transformation scenarios defined in the current *document type association*. It is useful to add to the toolbar buttons that trigger publishing to various output formats. The argument of the operation is:

  - **scenarioNames** - The list of scenario names that will be executed, separated by new lines.
- **InsertEquationOperation**

  Inserts a fragment containing a MathML equation at the cursor offset. The argument of this operation is:

  - **fragment** - The XML fragment containing the MathML content that should be inserted.
- **InsertFragmentOperation**

  Inserts an XML fragment at the current cursor position. The selection, if there is one, remains unchanged. The fragment will be inserted in the current context of the cursor position meaning that if the current XML document uses some namespace declarations then the inserted fragment must use the same declarations. The namespace declarations of the inserted fragment will be adapted to the existing namespace declarations of the XML document. For more details about its list of parameters, see Arguments of InsertFragmentOperation Operation on page 1254.
- **InsertOrReplaceFragmentOperation**

  Similar to **InsertFragmentOperation**, except it removes the selected content before inserting the fragment. Also, the **insertPosition** parameter has another possible value: **Replace**. If this value is used, the operation deletes the node selected by the XPath expression denoted by the **insertLocation** parameter. For more details about its list of parameters, see Arguments of InsertFragmentOperation Operation on page 1254.
- **InsertOrReplaceTextOperation**

  Inserts a text at current position removing the selected content, if any. The argument of this operation is:

  - **text** - The text section to insert.
- **InsertXIncludeOperation**

  Insert an `XInclude` element at the cursor offset. Opens a dialog box that allows you to browse and select content to be included in your document and automatically generates the corresponding XInclude instruction.
- **JSOperation**

  Allows you to call the Java API from custom JavaScript content. For some sample **JSOperation** implementations, see https://github.com/oxygenxml/javascript-sample-operations.

  Notice: For the Oxygen XML Web Author, this operation cannot be invoked using the JavaScript API.

  This operation accepts the following parameter:

  - **script**

The JavaScript content to execute. It must have a function called `doOperation()`, which can use the predefined `authorAccess` variable. The `authorAccess` variable has access to the entire *ro.sync.ecss.extensions.api.AuthorAccess* Java API.

The following example is a script that retrieves the current value of the **type** attribute on the current element, allows the end user to edit its new value and sets the new value in the document:

```
function doOperation(){
 //The current node is either entirely selected...
 currentNode = authorAccess.getEditorAccess().getFullySelectedNode();
 if(currentNode == null){
 //or the cursor is placed in it
 caretOffset = authorAccess.getEditorAccess().getCaretOffset();
 currentNode = authorAccess.getDocumentController().getNodeAtOffset
                          (caretOffset);
 }
 //Get current value of the @type attribute
  currentTypeValue = "";
  currentTypeValueAttr = currentNode.getAttribute("type");
  if(currentTypeValueAttr != null){
    currentTypeValue = currentTypeValueAttr.getValue();
  }
 //Ask user for new value for attribute.
 newTypeValue = javax.swing.JOptionPane.showInputDialog
                         ("Input @type value", currentTypeValue);
 if(newTypeValue != null){
   //Create and set the new attribute value for the @type attribute.
   attrValue = new Packages.ro.sync.ecss.extensions.api.node.AttrValue
                         (newTypeValue);
   authorAccess.getDocumentController().setAttribute
                         ("type", attrValue, currentNode);
 }
}
```

Tip: You can call functions defined inside a script called `commons.js` from your custom script content so that you can use that external script file as a library of functions. Note that this `commons.js` file must be placed in the root of the *framework* directory (for example, *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/commons.js`) because that is the only location where Oxygen XML Editor plugin will look for it.

- **MoveCaretOperation**

  Flexible operation for moving the cursor within a document and it is also capable of performing a selection. The operation accepts the following arguments:

  - **xpathLocation** - An XPath expression that identifies the node relative to where the cursor will be moved. If the expression identifies more than one node, only the first one will be taken into account.
  - **position** - The position relative to the node obtained from the XPath expression where the cursor will be moved. When also choosing to perform a selection, you can use the following possible values:
    - `Before` - Places the cursor at the beginning of the selection.
    - `Inside, at the beginning` - Places the cursor at the beginning of the selection.
    - `After` - Places the cursor at the end of the selection.
    - `Inside, at the end` - Places the cursor at the end of the selection.
  - **selection** - Specifies if the operation should select the element obtained from the XPath expression, its content, or nothing at all. The possible values of the argument are: `None`, `Element`, and `Content`.
- **MoveElementOperation**

  Flexible operation for moving an XML element to another location from the same document. XPath expressions are used to identify the source element and the target location. The operation takes the following parameters:

  - **sourceLocation** - XPath expression that identifies the content to be moved.
  - **deleteLocation** - XPath expression that identifies the node to be removed. This parameter is optional. If missing, the **sourceLocation** parameter will also identify the node to be deleted.
  - **surroundFragment** - A string representation of an XML fragment. The moved node will be wrapped in this string before moving it in the destination.
  - **targetLocation** - XPath expression that identifies the location where the node must be moved to.
  - **insertPosition** - Argument that indicates the insert position.
  - **moveOnlySourceContentNodes** - When `true`, only the content of the source element is moved.

- **processTrackedChangesForXpathLocations** - When nodes are located via an XPath expression and the nodes are deleted with *Change Tracking* enabled, they are considered as being present by default (thus, the *change tracking* is ignored). If you set this argument to `true` and *change tracking* is enabled, deleted nodes will be ignored when the XPath locations are computed (thus, the *change tracking* is NOT ignored).

- **OpenInSystemAppOperation**

  Opens a resource in the system application that is associated with the resource in the operating system. The arguments of this operation is:

  - **resourcePath** - An XPath expression that, when executed, returns the path of the resource to be opened. Editor variables are expanded in the value of this parameter, before the expression is executed.
  - **isUnparsedEntity** - Possible values are `true` or `false`. If the value is `true`, the value of the **resourcePath** argument is treated as the name of an unparsed entity.

- **RemovePseudoClassOperation**

  An operation that removes a pseudo-class from an element. Accepts the following parameters:

  - **name** - Name of the pseudo-class to be removed.
  - **includeAllNodes** - The possible values are `yes` and `no`. If set to `yes`, comments, CDATA, and text nodes are included when evaluating XPath expressions. If set to `no`, they are ignored.
  - **elementLocation** - The XPath location that identifies the element. Leave it empty for the current element. It can also identify multiple elements, in which case the pseudo class will be removed from all of them.

    Example:

    Suppose that there is a pseudo-class called `myClass` on the element `paragraph` and there are CSS styles matching the pseudo-class.

    ```
    paragraph:myClass{
      font-size:2em;
      color:red;
    }
    paragraph{
      color:blue;
    }
    ```

    In the previous example, by removing the pseudo-class, the layout of the `paragraph` is rebuilt by matching the other rules (in this case, the foreground color of the `paragraph` element will become blue.

- **RenameElementOperation**

  This operation allows you to rename all occurrences of the elements identified by an XPath expression. The operation requires two parameters:

  - **elementName** - The new element name
  - **elementLocation** - The XPath expression that identifies the element occurrences to be renamed. If this parameter is missing, the operation renames the element at current cursor position.

- **SetPseudoClassOperation**

  An operation that sets a pseudo-class to an element. The operation accepts the following parameters:

  - **elementLocation** - An XPath expression indicating the element for which the pseudo-class will be set. If it is not defined, then the element at cursor position will be used.
  - **name** - The pseudo-class local name.
  - **includeAllNodes** - The possible values are `yes` and `no`. If set to `yes`, comments, CDATA, and text nodes are included when evaluating XPath expressions. If set to `no`, they are ignored.

- **ShowElementDocumentationOperation**

  Opens the associated specification HTML page for the current element. The operation accepts as parameter a URL pattern that points to the HTML page containing the documentation.

- **SurroundWithFragmentOperation**

  Surrounds the selected content with a text fragment. Since the fragment can have multiple nodes, the surrounded content will be always placed in the first leaf element. If there is no selection, the operation will simply insert the fragment at the cursor position. For more details about the list of parameters go to Arguments of SurroundWithFragmentOperation on page 1256.

- **SurroundWithTextOperation**

  This operation has two arguments (two text values) that will be inserted before and after the selected content. If there is no selected content, the two sections will be inserted at the cursor position. The arguments of the operation are:

  - **header** - The text that is placed before the selection.
  - **footer** - The text that is placed after the selection.
- **TogglePseudoClassOperation**

  An implementation of an operation to toggle on/off the pseudo-class of an element. Accepts the following parameters:

  - **name** - Name of the pseudo-class to be toggled on/off.
  - **includeAllNodes** - The possible values are `yes` and no. If set to `yes`, comments, CDATA, and text nodes are included when evaluating XPath expressions. If set to no, they are ignored.
  - **elementLocation** - The XPath location that identifies one or more elements for which the pseudo class will be toggled. Leave it empty for the current element.

    Example:

    ```
    paragraph:myClass{
      color:red;
    }
    paragraph{
      color:blue;
    }
    ```

    By default, the paragraph content is rendered in blue. Suppose that we have a `TogglePseudoClassOperation` configured for the `myClass` pseudo-class. Invoking it the first time will set the `myClass` pseudo-class and the paragraph will be rendered in red. Invoking the operation again, will remove the pseudo-class and the visible result will be a blue rendered `paragraph` element.
- **ToggleSurroundWithElementOperation**

  This operation allows wrapping and unwrapping content in a specific wrapper element that can have certain attributes specified on it. It is useful to implement toggle actions such as highlighting text as bold, italic, or underline. The operation supports processing multiple selection intervals, such as multiple cells within a table column selection. The arguments of the operation are:

  - **element** - The element to wrap or unwrap content.
  - **schemaAware** - This argument applies only on the surround with element operation and controls whether or not the insertion is valid, based upon the schema. If the insertion is not valid, then wrapping action will be broken up into smaller intervals until the wrapping action is valid. For example, if you try to wrap a *paragraph* element with a *bold* element, it would not be valid, so the operation will wrap the text inside the paragraph instead, since it would be valid at that position.
- **UnwrapTagsOperation**

  This operation allows removing the element tags either from the current element or for an element identified with an XPath location. The argument of the operation is

  - **unwrapElementLocation** - An XPath expression indicating the element to unwrap. If it is not defined, the element at the cursor position is unwrapped.
- **XQueryUpdateOperation**

  Allows you to execute an XQuery Update script directly over content in **Author** mode.

  Notice: This operation is not applicable to the Oxygen XML Author Component or the Oxygen XML Web Author.

  It supports the following arguments:

  - **script** - The XQuery Update script to be executed. The value can either be an XQuery script or a URL that points to the XQuery Update script. You can use the *${framework}* or *${frameworkDir}* editor variables to refer the scripts from the *framework* directory.

The script will be executed in the context of the node at the cursor position. If the script declares the following variable, it will also receive the selected nodes (assuming that entire nodes are selected):

```
declare variable $oxyxq:selection external;
```

In the example below, you can see how this argument is used.

- **externalParams** - A string that can assign multiple key-value pairs separated by a comma or a new line character.

  For example, if an XQuery script declares two external parameters like this:

  ```
  declare variable $param1 external;
  declare variable $param2 external;
  ```

  You can pass custom values for each parameter by setting the **externalParams** to `param1=value1,param2=value2`.
- **expandXincludeReferences** - Makes all *Xinclude* elements transparent to the XQuery transformer. When the *Xinclude* references are transparent, the **XQueryUpdateOperation** can use the referenced elements for further processing in the current document, but it cannot change their values in the original document. The default value is `false`, which means the *Xinclude* elements are not transparent.

An example of an XQuery Update Script that converts paragraphs to list items:

```
declare namespace oxyxq = "http://www.oxygenxml.com/ns/xqu";
(: This variable will be linked to the selected nodes assuming that there are
actually fully selected nodes. For example this selection will return null:
<p>{SEL_START}text{SEL_END} in para</p>
but this will give two "p" elements:
{SEL_END}<p>text</p><p>text2</p>{SEL_END}

If a multiple selection exists it will also be processed and forwarded.
 Again, only fully selected nodes will be passed.
:)
declare variable $oxyxq:selection external;

(: We will process either the selection or the context node :)
let $toProcess := if (empty($oxyxq:selection)) then
    (.)
else
    ($oxyxq:selection)

returnif (not(empty($toProcess))) then
        (
        (: Create the list :)
        let $ul :=
        <ul>
            {
                for $sel in $toProcess
                return
                    <li>{$sel}</li>
            }
        </ul>

        return
            (
            (: Delete the processed nodes :)
            for $sel in $toProcess
            return
                delete node $sel,
            (: Inserts the constructed list :)
            insert node $ul
                before $toProcess[1]
            )
        )
    else
        ()
```

- **XSLTOperation** and **XQueryOperation**

  Applies an XSLT or XQuery script on a source element and then replaces or inserts the result in a specified target element.

  Notice: For the Oxygen XML Web Author, these operations cannot be invoked using the JavaScript API.

  These operations accept the following parameters:

  - **sourceLocation**

An XPath expression indicating the element that the script will be applied on. If it is not defined, then the element at the cursor position will be used.

There may be situations in which you want to look at an ancestor of the current element and take decisions in the script based on this. To do this, you can set the **sourceLocation** to point to an ancestor node then declare a parameter called **currentElementLocation** in your script and use it to re-position in the current element, as in the following example:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0"
  xpath-default-namespace="http://docbook.org/ns/docbook"
  xmlns:saxon="http://saxon.sf.net/" exclude-result-prefixes="saxon">
    <!-- This is an XPath location to be sent by the operation to the script -->
    <xsl:param name="currentElementLocation"/>

    <xsl:template match="/">
        <!-- Evaluate the XPath of the current element location -->
        <xsl:apply-templates
        select="saxon:eval(saxon:expression($currentElementLocation))"/>
    </xsl:template>

    <xsl:template match="para">
        <!-- And the context is again inside the current element,
        but we can use information from the entire XML -->
        <xsl:variable
            name="keyImage" select="//imagedata[@fileref='images/lake.jpeg']
              /ancestor::inlinemediaobject/@xml:id/string()"/>
                <xref linkend="{$keyImage}" role="key_include"
                  xmlns="http://docbook.org/ns/docbook">
                    <xsl:value-of
                          select="$currentElementLocation"></xsl:value-of>
        </xref>
    </xsl:template>
</xsl:stylesheet>
```

- **targetLocation**

  An XPath expression indicating the insert location for the result of the transformation. If it is not defined then the insert location will be at the cursor location.
- **script**

  The script content (XSLT or XQuery). The base system ID for this will be the *framework* file, so any include/import reference will be resolved relative to the `.framework` file that contains this action definition.

  For example, for the following script, the imported `xslt_operation.xsl` needs to be located in the current *framework* directory.

  ```
  <xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
                  version="1.0">
      <xsl:import href="xslt_operation.xsl"/>
  </xsl:stylesheet>
  ```

  You can also use a path for an included or imported reference. When using a path, the following apply:

  - A relative path is resolved to the *framework* directory.
  - The *${framework}* editor variable can also be used to reference resources from the *framework* directory.
  - The path is passed through the catalog mappings. It helps to use an absolute URL (for instance, `http://www.oxygenxml.com/fr/testy.xsl`) and map it in the `catalog.xml` file from the *framework* directory to a resource from the *framework*.
- **action**

  The insert action relative to the node determined by the target XPath expression. It can be: Replace, At cursor position, Before, After, Inside as first child or Inside as last child.
- **caretPosition**

  The position of the cursor after the action is executed. It can be: `Preserve`, `Before`, `Start`, `First editable position`, `End`, or `After`. If this parameter is not set, you can still indicate the position of the cursor by using the *${caret}* editor variable in the inserted content.
- **expandEditorVariables**

  Parameter controlling the expansion of editor variables returned by the script processing. Expansion is enabled by default.
- **suspendTrackChanges**

It has 2 possible values (`true` and `false`). The default value is `false`. When set to `true`, the *Track Changes* feature is deactivated. When using this argument, after the action is finished, the state of the *Track Changes* feature is restored to its initial value.

- **externalParams** - A string that can assign multiple key-value pairs separated by a comma or a new line character.

  For example, if an XQuery script declares two external parameters like this:

  ```
  declare variable $param1 external;
  declare variable $param2 external;
  ```

  You can pass custom values for each parameter by setting the **externalParams** to `param1=value1,param2=value2`.

XSLTOperation Example: Sort a list with respect to the language declared on the root element-

Suppose we want an action that will sort a list with respect to the language declared on the root element and we have an XML file like this:

```
<article xml:lang="en">
  <ul>
     <li>B</li>
     <li>C</li>
     <li>A</li>
  </ul>
</article>
```

The **XSLTOperation** needs to be configured as follows:

- **sourceLocation** is set to /* so that the script has access to the root element and its children.
- **targetLocation** is left untouched (assuming that the action is active only when the cursor is inside the list).

The XSLT script would look like this:

```
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:saxon="http://saxon.sf.net/"
  xmlns:lds="http://www.lds.org/schema/lds-meta/v1"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  exclude-result-prefixes="xs saxon" version="2.0">

  <xsl:param name="currentElementLocation"/>

  <xsl:template match="/">
      <!--
          sourceLocation parameter was set to /* to have a larger context.
          We can pinpoint the element that contained the caret
          using $currentElementLocation
      -->
     <xsl:apply-templates select="saxon:eval(saxon:expression($currentElementLocation))"/>
  </xsl:template>

  <xsl:template match="ul">

    <!-- Because the sourceLocation parameter was set to /* we now have access to
         the root element and its attributes. -->
    <xsl:variable name="lang" select="/*/@xml:lang"/>
    <xsl:variable name="collationURI">
      <xsl:value-of select="concat('http://www.w3.org/2013/collation/UCA?lang=', $lang)"/>
    </xsl:variable>

      <xsl:copy>
          <xsl:copy-of select="@*"/>

          <!-- Copy the list items, but sorted. -->
          <xsl:apply-templates select="li">
              <xsl:sort collation="{$collationURI}" select="text()"/>
          </xsl:apply-templates>
      </xsl:copy>
  </xsl:template>

  <!-- This copy template will handle the contents of the list items. -->
  <xsl:template match="@* | node()">
      <xsl:copy>
          <xsl:apply-templates select="@* | node()"/>
      </xsl:copy>
  </xsl:template>
</xsl:stylesheet>
```

Editor Variables in Author Mode Operations

Author mode operations can include parameters that contain the following editor variables:

- **${caret}** - The position where the cursor is located. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.

Note: The **${caret}** editor variable is available only for parameters that take XML content as values. It is replaced with the **${UNIQUE_CARET_MARKER_FOR_AUTHOR}** macro. The default Author operations process this macro and position the cursor at the designated offset.

- **${selection}** - The current selected text content in the current edited document. This variable can be used in a code template, in **Author** mode operations, or in a **selection** *plugin*.
- **${ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default_value')}** - To prompt for values at runtime, use the *ask('message', type, ('real_value1':'rendered_value1'; 'real_value2':'rendered_value2'; ...), 'default-value")* editor variable. You can set the following parameters:
  - **'message'** - The displayed message. Note the quotes that enclose the message.
  - **'default-value'** - Optional parameter. Provides a default value.
  - **type** - Optional parameter, with one of the following values:

    Note: The title of the dialog box will be determined by the type of parameter and as follows:

    - For *url* and *relative_url* parameters, the title will be the name of the parameter and the value of the *'message'*.
    - For the other parameters listed below, the title will be the name of that respective parameter.
    - If no parameter is used, the title will be "Input".

Parameter	
url	**Format:** *${ask('message', url, 'default_value')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin checks that the provided URL is valid.
	Example: • *${ask('Input URL', url)}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. • *${ask('Input URL', url, 'http://www.example.com')}* - The displayed dialog box has the name *Input URL*. The expected input type is URL. The input field displays the default value *http://www.example.com*.
password	**Format**: *${ask('message', password, 'default')}*
	Description: The input is hidden with bullet characters.
	Example: • *${ask('Input password', password)}* - The displayed dialog box has the name *'Input password'* and the input is hidden with bullet symbols. • *${ask('Input password', password, 'abcd')}* - The displayed dialog box has the name *'Input password'* and the input hidden with bullet symbols. The input field already contains the default **abcd** value.
generic	**Format**: *${ask('message', generic, 'default')}*
	Description: The input is considered to be generic text that requires no special handling.
	Example: • *${ask('Hello world!')}* - The dialog box has a *Hello world!* message displayed. • *${ask('Hello world!', generic, 'Hello again!')}* - The dialog box has a *Hello world!* message displayed and the value displayed in the input box is *'Hello again!'*.

Parameter	
relative_url	**Format:** *${ask('message', relative_url, 'default')}*
	Description: Input is considered a URL. Oxygen XML Editor plugin tries to make the URL relative to that of the document you are editing. **Note:** If the *$ask* editor variable is expanded in content that is not yet saved (such as an *untitled* file, whose path cannot be determined), then Oxygen XML Editor plugin will transform it into an absolute URL.
	Example: • *${ask('File location', relative_url, 'C:/example.txt')}* - The dialog box has the name *'File location'*. The URL inserted in the input box is made relative to the current edited document location.
combobox	**Format:** *${ask('message', combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a drop-down menu. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated value (*real_value*). **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems. The associated value will be returned based upon your selection. **Note:** In this example, the default value is indicated by the *osx* key. However, the same result could be obtained if the default value is indicated by *Mac OS X*, as in the following example: *${ask('Operating System', combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'Mac OS X')}* • *${ask('Mobile OS', combobox, ('win':'Windows Mobile';'ios':'iOS';'and':'Android'), 'Android')}*
editable_combobox	**Format:** *${ask('message', editable_combobox, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*
	Description: Displays a dialog box that offers a drop-down menu with editable elements. The drop-down menu is populated with the given *rendered_value* values. Choosing such a value will return its associated real value (*real_value*) or the value inserted when you edit a list entry. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', editable_combobox, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The drop-down menu displays the three given operating systems and also allows you to edit the entry. The associated value will be returned based upon your selection or the text you input.
radio	**Format:** *${ask('message', radio, ('real_value1':'rendered_value1';...;'real_valueN':'rendered_valueN'), 'default')}*

Parameter	
	Description: Displays a dialog box that offers a series of radio buttons. Each radio button displays a *'rendered_value* and will return an associated *real_value*. **Note:** The *'default'* parameter specifies the default selected value and can match either a key or a value.
	Example: • *${ask('Operating System', radio, ('win':'Microsoft Windows';'osx':'Mac OS X';'lnx':'Linux/UNIX'), 'osx')}* - The dialog box has the name *'Operating System'*. The radio button group allows you to choose between the three operating systems. **Note:** In this example `Mac OS X` is the default selected value and if selected it would return *osx* for the output.

- **${timeStamp}** - Time stamp, that is the current time in Unix format. For example, it can be used to save transformation results in multiple output files on each transformation.
- **${uuid}** - Universally unique identifier, a unique sequence of 32 hexadecimal digits generated by the Java UUID class.
- **${id}** - Application-level unique identifier. It is a short sequence of 10-12 letters and digits that is not guaranteed to be universally unique.
- **${cfn}** - Current file name without extension and without parent folder. The current file is the one currently opened and selected.
- **${cfne}** - Current file name with extension. The current file is the one currently opened and selected.
- **${cf}** - Current file as file path, that is the absolute file path of the current edited document.
- **${cfd}** - Current file folder as file path, that is the path of the current edited document up to the name of the parent folder.
- **${frameworksDir}** - The path (as file path) of the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory.
- **${pd}** - The file path to the folder that contains the current project file (`.xpr`).
- **${oxygenInstallDir}** - Oxygen XML Editor plugin installation folder as file path.
- **${homeDir}** - The path (as file path) of the user home folder.
- **${pn}** - Current project name.
- **${env(VAR_NAME)}** - Value of the *VAR_NAME* environment variable. The environment variables are managed by the operating system. If you are looking for Java System Properties, use the **${system(var.name)}** editor variable.
- **${system(var.name)}** - Value of the *var.name* Java System Property. The Java system properties can be specified in the command line arguments of the Java runtime as *-Dvar.name=var.value*. If you are looking for operating system environment variables, use the **${env(VAR_NAME)}** editor variable instead.
- **${date(pattern)}** - Current date. The allowed patterns are equivalent to the ones in the Java SimpleDateFormat class. **Example:** *yyyy-MM-dd*;

  Note: This editor variable supports both the **xs:date** and **xs:datetime** parameters. For details about **xs:date**, go to http://www.w3.org/TR/xmlschema-2/#date. For details about **xs:datetime**, go to http://www.w3.org/TR/xmlschema-2/#dateTime.

Related Information:

Arguments of InsertFragmentOperation Operation on page 1254
Arguments of SurroundWithFragmentOperation on page 1256

Arguments of `InsertFragmentOperation` Operation

fragment

This argument has a textual value. This value is parsed by Oxygen XML Editor plugin as it was already in the document at the cursor position. You can use entity references declared in the document and it is namespace aware. The fragment may have multiple roots.

You can even use namespace prefixes that are not declared in the inserted fragment, if they are declared in the document where the insertion is done. For the sake of clarity, you should always prefix and declare namespaces in the inserted fragment!

If the fragment contains namespace declarations that are identical to those found in the document, the namespace declaration attributes will be removed from elements contained by the inserted fragment.

There are two possible scenarios:

1. **Prefixes that are not bound explicitly**

   For instance, the fragment:

   ```
   <x:item id="dty2"/>
   &ent;
   <x:item id="dty3"/>
   ```

   Can be correctly inserted in the document: ('|' marks the insertion point):

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <!DOCTYPE x:root [
       <!ENTITY ent "entity">
   ]>

   <x:root xmlns:x="nsp">
     |
   </x:root>
   ```

   Result:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <!DOCTYPE x:root [
       <!ENTITY ent "entity">
   ]>
   <x:root xmlns:x="nsp">
       <x:item id="dty2"/>
       &ent;
       <x:item id="dty3"/>
   </x:root>
   ```

2. **Default namespaces**

If there is a default namespace declared in the document and the *document fragment* does not declare a namespace, the elements from the fragment are considered to be in **no namespace**.

For instance, the fragment:

```
<item id="dty2"/>
<item id="dty3"/>
```

Inserted in the document:

```
<?xml version="1.0" encoding="UTF-8"?>
<root xmlns="nsp">
|
</root>
```

Gives the result document:

```
<?xml version="1.0" encoding="UTF-8"?>
<root xmlns="nsp">
    <item xmlns="" id="dty2"/>
    <item xmlns="" id="dty3"/>
</root>
```

insertLocation

An XPath expression that is relative to the current node. It selects the reference node for the fragment insertion. When missing, the fragment will be inserted at the cursor position.

insertPosition

Specifies where the insertion is made relative to the reference node selected by the *insertLocation*. It can be one of the following constants:

- **Inside as first child** (default value) - The fragment is inserted as first child of the reference node.

- **Inside as last child** - The fragment is inserted as the last child of the reference node.
- **After** - The fragment is inserted after the reference node.
- **Before** - The fragment is inserted before the reference node.

goToNextEditablePosition

After inserting the fragment, the first editable position is detected and the cursor is placed at that location. It handles any in-place editors used to edit attributes. It will be ignored if the fragment specifies a cursor position using the **${caret}** editor variable. The possible values of this action are **true** and **false**.

schemaAware

This argument applies only on the surround with element operation and controls whether or not the insertion is valid, based upon the schema. If the insertion is not valid, then wrapping action will be broken up into smaller intervals until the wrapping action is valid. For example, if you try to wrap a *paragraph* element with a *bold* element, it would not be valid, so the operation will wrap the text inside the paragraph instead, since it would be valid at that position.

Arguments of *SurroundWithFragmentOperation*

The **Author** mode operation *SurroundWithFragmentOperation* has only one argument:

- **fragment**

  The XML fragment that will surround the selection. For example, consider the fragment:

```
<F>
   <A></A>
   <B>
     <C></C>
   </B>
</F>
```

  and the document:

```
<doc>
  <X></X>
  <Y></Y>
  <Z></Z>
<doc>
```

  Considering the selected content to be surrounded is the sequence of elements X and Y, then the result is:

```
<doc>
   <F>
      <A>
         <X></X>
         <Y></Y>
      </A>
      <B>
        <C></C>
      </B>
   </F>
  <Z></Z>
<doc>
```

  Since the element A was the first leaf in the fragment, it received the selected content. The fragment was then inserted in the place of the selection.

Add a Custom Operation to an Existing Framework

This task explains how to add a custom **Author** mode operation to an existing *framework* (document type).

1. Setup a sample project by following the instructions for installing the SDK. Our sample *framework* project is `oxygen-sample-framework`.
2. A variety of classes in the *simple.documentation.framework.operations* package implement the *ro.sync.ecss.extensions.api.AuthorOperation* interface. Depending on your use-case, modify one of these classes.
3. Pack the operation class inside a Java *JAR* library.
4. Copy the *JAR* library to your framework directory (for example, *`[OXYGEN_INSTALL_DIR]`*`/frameworks/[FRAMEWORK_DIR]`).

5. Open the **Preferences** dialog box , go to **Document Type Association**, and edit the document type (you need write access to the *[OXYGEN_INSTALL_DIR]*) to open the **Document Type** configuration dialog box.
   a) In the **Classpath** tab, add a reference to your JAR library (for example, `${framework}/customAction.jar`).
   b) Go to the **Author** tab, then go to the **Actions** subtab.
   c) Click the **New** button and use the **Action** dialog box to create a new action that uses your custom operation.
   d) Mount the action to the toolbars or menus. You can also define a shortcut key.
6. Share the modifications with your colleagues. The files that should be shared are your `customAction.jar` library and the `.framework` configuration file from the *[OXYGEN_INSTALL_DIR]*`/frameworks/[FRAMEWORK_DIR]` directory.

Related Information:
AuthorOperation API

Adding Retina/HiDPI Icons in a Framework

Higher resolution icons can also be included in customized *frameworks* for rendering them in a Retina or HiDPI display. The icons can be referenced directly from the **Document Type Congifuration** dialog box (from the **Action** dialog box) or from an API (*ro.sync.exml.workspace.api.node.customizer.XMLNodeRendererCustomizer*).

As with any image, the higher resolution icons are stored in the same images folder as the normal resolution images and they are identified by a scaling factor that is included in the name of the image files. For instance, icons with a Retina scaling factor of 2 will include *@2x* in the name (for example, `myIcon@2x.png`).

Developers should not specify the path of the alternate icons (*@2x* or *@3x*) in the **Action** dialog box or the *XMLNodeRendererCustomizer* API. When using a Retina or HiDPI display, Oxygen XML Editor plugin automatically searches the folder of the *normal* icon for a corresponding image file with a Retina scaling factor in the name. If the higher resolution icon file does not exist, the *normal* icon is scaled and used instead.

Related Information:
Retina/HiDPI Images in Author Mode on page 528

Java API - Extending Author Functionality through Java

Oxygen XML Editor plugin **Author** mode has a built-in set of operations covering the insertion of text and XML fragments (see the Author Default Operations) and the execution of XPath expressions on the current document edited in **Author** mode. However, there are situations in which you need to extend this set. The following examples are just a few of the possible situations:

- You need to enter an element whose attributes will be edited by the user through a graphical user interface.
- The user must send selected element content (or the whole document) to a server for some kind of processing.
- Content authors need to extract pieces of information from a server and insert it directly into the edited XML document.
- You need to apply an XPath expression on the current document and process the nodes of the resulting node set.

To extend the Oxygen XML Editor plugin **Author** mode functionality through Java, you will need the Oxygen SDK available on the Oxygen XML Editor plugin website. It includes the source code of the **Author** mode operations in the predefined document types and the full documentation (in Javadoc format) of the public API available for **Author** mode custom actions.

The subsequent Java examples make use of AWT classes. If you are developing extensions for the Oxygen XML Editor plugin XML Editor plugin for Eclipse, you will have to use their SWT counterparts.

Attention: Make sure the Java classes of your custom **Author** mode operations are compiled with the same Java version used by Oxygen XML Editor plugin. Otherwise, the classes may not be loaded by the Java virtual machine. For example, if you run Oxygen XML Editor plugin with a Java 1.6 virtual machine but the Java classes of your custom **Author** mode operations are compiled with a Java 1.7 virtual machine then the custom operations cannot be loaded and used by the Java 1.6 virtual machine.

Related Information:

Example 1- Simple Use of a Dialog Box from an Author Mode Operation

In this example, we start adding functionality for inserting images in a custom *framework*. The images are represented by the `image` element. The location of the image file is represented by the value of the `href` attribute. In the Java implementation, a dialog box will be displayed with a text field, in which the user can enter a full URL or browse for a local file.

1. Setup a sample project following this set of instructions. The *framework* project is **oxygen-sample-framework**.
2. Modify the *simple.documentation.framework.InsertImageOperation* class that implements the *ro.sync.ecss.extensions.api.AuthorOperation* interface. This interface defines three methods: *doOperation*, *getArguments* and *getDescription*

   A short description of these methods follows:

   - The *doOperation* method is invoked when the action is performed either by pressing the toolbar button, by selecting the menu item or by pressing the shortcut key. The arguments taken by this methods can be one of the following combinations:
     - an object of type *ro.sync.ecss.extensions.api.AuthorAccess* and a map
     - argument names and values
   - The *getArguments* method is used by Oxygen XML Editor plugin when the action is configured. It returns the list of arguments (name and type) that are accepted by the operation.
   - The *getDescription* method is used by Oxygen XML Editor plugin when the operation is configured. It returns a description of the operation.

   Example:

   Here is the implementation of these three methods:

```
/**
 * Performs the operation.
 */
public void doOperation(
           AuthorAccess authorAccess,
           ArgumentsMap arguments)
    throws IllegalArgumentException,
              AuthorOperationException {

JFrame oxygenFrame = (JFrame) authorAccess.getWorkspaceAccess().getParentFrame()
;
    String href = displayURLDialog(oxygenFrame);
     if (href.length() != 0) {
       // Creates the image XML fragment.
       String imageFragment =
         "<image xmlns='http://www.oxygenxml.com/sample/documentation' href='"
          + href + "'/>";

       // Inserts this fragment at the cursor position.
       int caretPosition = authorAccess.getEditorAccess().getCaretOffset();
       authorAccess.getDocumentController().insertXMLFragment
(imageFragment, caretPosition);
 }
}

/**
 * Has no arguments.
 *
 * @return null.
 */
public ArgumentDescriptor[] getArguments() {
 return null;
}

/**
 * @return A description of the operation.
 */
public String getDescription() {
 return "Inserts an image element. Asks the user for a URL reference.";
}
```

   Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

   Important:

Make sure you always specify the namespace of the inserted fragments.

```
<image xmlns='http://www.oxygenxml.com/sample/documentation'
  href='path/to/image.png'/>
```

3. Package the compiled class into a *JAR* file. An example of an Ant script that packages the `classes` folder content into a *JAR* archive named `sdf.jar` is listed below:

```
<?xml version="1.0" encoding="UTF-8"?>
<project name="project" default="dist">
    <target name="dist">
   <jar destfile="sdf.jar" basedir="classes">
    <fileset dir="classes">
     <include name="**/*"/>
     </fileset>
   </jar>
    </target>
</project>
```

4. Copy the `sdf.jar` file into your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).
5. Add the `sdf.jar` to the class path. To do this, open the **Preferences** dialog box , go to **Document Type Association**, select **SDF**, and press the **Edit** button.
6. Select the **Classpath** tab in the lower part of the **Document Type** configuration dialog box and press the **Add** button . In the displayed dialog box, enter the location of the *JAR* file, relative to the Oxygen XML Editor plugin `frameworks` folder.
7. We now create the action that will use the defined operation. Go to the **Actions** subtab.
   Copy the icon files for the menu item and for the toolbar in your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).
8. Define the action's properties:
   - Set **ID** to **insert_image**.
   - Set **Name** to **Insert image**.
   - Set **Menu access key** to letter **i**.
   - Set **Toolbar action** to **${framework}/toolbarImage.png**.
   - Set **Menu icon** to **${framework}/menuImage.png**.
   - Set **Shortcut key** to **Ctrl (Meta on Mac OS)+Shift+i**.
9. Next, we set up the operation. You want to add images only if the current element is a `section`, book or `article`.
   - Set the value of **XPath expression** to

     ```
     local-name()='section' or local-name()='book'
      or local-name()='article'
     ```

   - Set the **Invoke operation** field to *simple.documentation.framework.InsertImageOperation*.

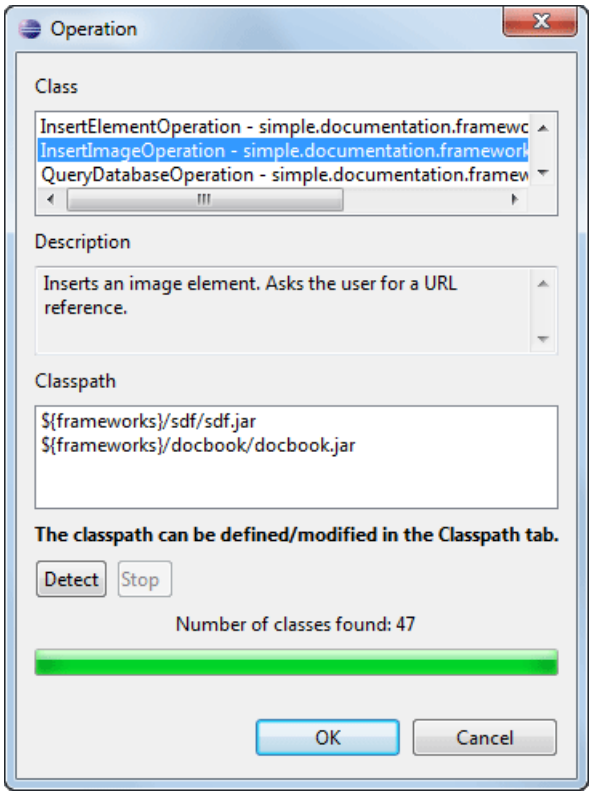


Figure 651: Selecting the Operation

10. Add the action to the toolbar, using the **Toolbar** panel.

To test the action, you can open the *sdf_sample.xml* sample, then place the cursor inside a `section` between two `para` elements (for instance). Press the button associated with the action from the toolbar. In the dialog box, select an image URL and press **OK**. The image is inserted into the document.

Example 2- Operations with Arguments. Report from Database Operation

In this example you will create an operation that connects to a relational database and executes an SQL statement. The result should be inserted in the edited XML document as a `table`. To make the operation fully configurable, it will have arguments for the *database connection string*, the *user name*, the *password* and the *SQL expression*.

1. Setup a sample project following this set of instructions. The *framework* project is **oxygen-sample-framework**.
2. Create the class *simple.documentation.framework.QueryDatabaseOperation*. This class must implements the *ro.sync.ecss.extensions.api.AuthorOperation* interface.

```
import ro.sync.ecss.extensions.api.ArgumentDescriptor;
import ro.sync.ecss.extensions.api.ArgumentsMap;
import ro.sync.ecss.extensions.api.AuthorAccess;
import ro.sync.ecss.extensions.api.AuthorOperation;
import ro.sync.ecss.extensions.api.AuthorOperationException;

public class QueryDatabaseOperation implements AuthorOperation{
```

3. Now define the operation's arguments. For each of them you will use a `String` constant representing the argument name:

```
private static final String ARG_JDBC_DRIVER ="jdbc_driver";
private static final String ARG_USER ="user";
private static final String ARG_PASSWORD ="password";
private static final String ARG_SQL ="sql";
private static final String ARG_CONNECTION ="connection";
```

4. You must describe each of the argument name and type. To do this, implement the *getArguments* method that will return an array of argument descriptors:

```
public ArgumentDescriptor[] getArguments() {
  ArgumentDescriptor args[] = new ArgumentDescriptor[] {
```

```
    new ArgumentDescriptor(
      ARG_JDBC_DRIVER,
      ArgumentDescriptor.TYPE_STRING,
      "The name of the Java class that is the JDBC driver."),
    new ArgumentDescriptor(
      ARG_CONNECTION,
      ArgumentDescriptor.TYPE_STRING,
      "The database URL connection string."),
    new ArgumentDescriptor(
      ARG_USER,
      ArgumentDescriptor.TYPE_STRING,
      "The name of the database user."),
    new ArgumentDescriptor(
      ARG_PASSWORD,
      ArgumentDescriptor.TYPE_STRING,
      "The database password."),
    new ArgumentDescriptor(
      ARG_SQL,
      ArgumentDescriptor.TYPE_STRING,
      "The SQL statement to be executed.")
  };
  return args;
 }
```

These names, types and descriptions will be listed in the **Arguments** table when the operation is configured.

5. When the operation is invoked, the implementation of the *doOperation* method extracts the arguments, forwards them to the method that connects to the database and generates the XML fragment. The XML fragment is then inserted at the cursor position.

```
public void doOperation(AuthorAccess authorAccess, ArgumentsMap map)
   throws IllegalArgumentException, AuthorOperationException {

  // Collects the arguments.
  String jdbcDriver =
   (String)map.getArgumentValue(ARG_JDBC_DRIVER);
  String connection =
   (String)map.getArgumentValue(ARG_CONNECTION);
  String user =
   (String)map.getArgumentValue(ARG_USER);
  String password =
   (String)map.getArgumentValue(ARG_PASSWORD);
  String sql =
   (String)map.getArgumentValue(ARG_SQL);

  int caretPosition = authorAccess.getCaretOffset();
  try {
   authorAccess.getDocumentController().insertXMLFragment(
     getFragment(jdbcDriver, connection, user, password, sql),
     caretPosition);
  } catch (SQLException e) {
   throw new AuthorOperationException(
     "The operation failed due to the following database error: "
     + e.getMessage(), e);
  } catch (ClassNotFoundException e) {
   throw new AuthorOperationException(
     "The JDBC database driver was not found. Tried to load ' "
     + jdbcDriver + "'", e);
  }
 }
```

6. The *getFragment* method loads the JDBC driver, connects to the database and extracts the data. The result is a `table` element from the `http://www.oxygenxml.com/sample/documentation` namespace. The `header` element contains the names of the SQL columns. All the text from the XML fragment is escaped. This means that the '<' and '&' characters are replaced with the '<' and '&' character entities to ensure the fragment is well-formed.

```
private String getFragment(
  String jdbcDriver,
  String connectionURL,
  String user,
  String password,
  String sql) throws
   SQLException,
   ClassNotFoundException {

      Properties pr = new Properties();
      pr.put("characterEncoding", "UTF8");
      pr.put("useUnicode", "TRUE");
      pr.put("user", user);
      pr.put("password", password);

      // Loads the database driver.
      Class.forName(jdbcDriver);
      // Opens the connection
      Connection connection =
         DriverManager.getConnection(connectionURL, pr);
      java.sql.Statement statement =
```

```
            connection.createStatement();
        ResultSet resultSet =
            statement.executeQuery(sql);

        StringBuffer fragmentBuffer = new StringBuffer();
        fragmentBuffer.append(
          "<table xmlns=" +
          "'http://www.oxygenxml.com/sample/documentation'>");

        //
        // Creates the table header.
        //
        fragmentBuffer.append("<header>");
        ResultSetMetaData metaData = resultSet.getMetaData();
        int columnCount = metaData.getColumnCount();
        for (int i = 1; i <= columnCount; i++) {
            fragmentBuffer.append("<td>");
            fragmentBuffer.append(
              xmlEscape(metaData.getColumnName(i)));
            fragmentBuffer.append("</td>");
        }
        fragmentBuffer.append("</header>");

        //
        // Creates the table content.
        //
        while (resultSet.next()) {
            fragmentBuffer.append("<tr>");
            for (int i = 1; i <= columnCount; i++) {
                fragmentBuffer.append("<td>");
                fragmentBuffer.append(
                  xmlEscape(resultSet.getObject(i)));
                fragmentBuffer.append("</td>");
            }
            fragmentBuffer.append("</tr>");
        }

        fragmentBuffer.append("</table>");

        // Cleanup
        resultSet.close();
        statement.close();
        connection.close();
        return fragmentBuffer.toString();
    }
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

7. Package the compiled class into a *JAR* file.
8. Copy the *JAR* file and the JDBC driver files into your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).
9. Add the *JARS* to the class path. To do this, open the **Document Type Association** preferences page, select **SDF** and press the **Edit** button. Select the **Classpath** tab in the lower part of the **Document Type** configuration dialog box and press the **Add** button . In the displayed dialog box, enter the location of the *JAR* file, relative to the Oxygen XML Editor plugin `frameworks` folder.
10. Go to the **Actions** subtab. The action properties are:
    - Set **ID** to **clients_report**.
    - Set **Name** to **Clients Report**.
    - Set **Menu access key** to letter **r**.
    - Set **Description** to **Connects to the database and collects the list of clients**.
    - Set **Toolbar icon** to **${framework}/TableDB20.png** (image `TableDB20.png` is already stored in the `frameworks / sdf` folder).
    - Leave empty the **Menu icon**.
    - Set **shortcut key** to **Ctrl + Shift + C (Command + Shift + C on OS X)**.
11. The action will work only if the current element is a **section**. Set up the operation as follows:
    - Set **XPath expression** to:

      ```
      local-name()='section'
      ```

    - Use the Java operation defined earlier to set the **Invoke operation** field. Press the **Choose** button, then select *simple.documentation.framework.QueryDatabaseOperation*. Once selected, the list of arguments

is displayed. In the figure below the first argument, *jdbc_driver*, represents the class name of the MySQL JDBC driver. The connection string has the URL syntax : *jdbc://<database_host>:<database_port>/<database_name>*.

The SQL expression used in the example follows, but it can be any valid SELECT expression that can be applied to the database:

```
SELECT userID, email FROM users
```

12. Add the action to the toolbar, using the **Toolbar** panel.

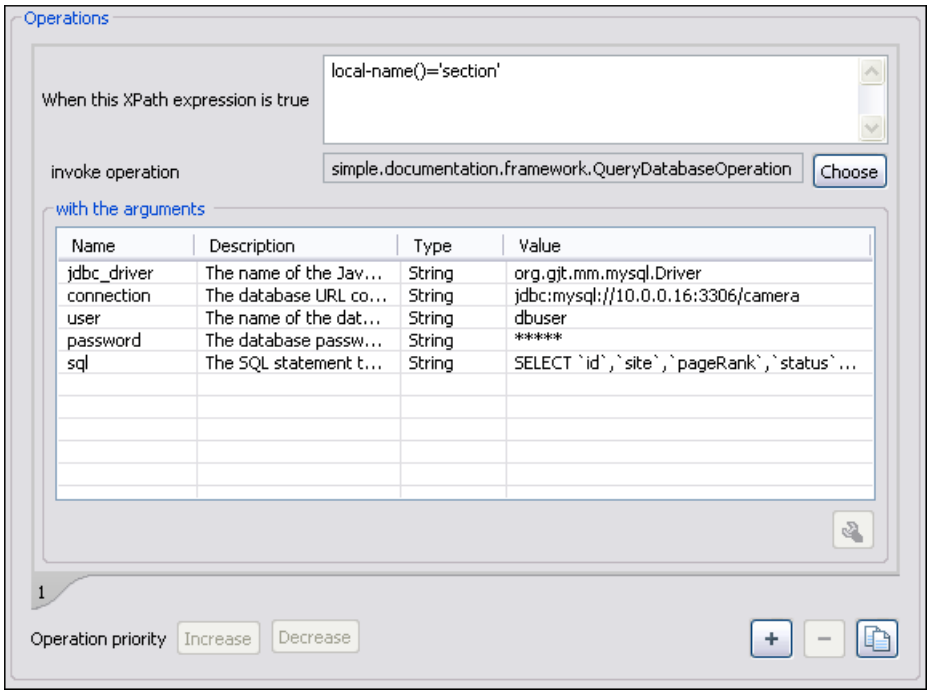


Figure 652: Java Operation Arguments Setup

To test the action, you can open the *sdf_sample.xml* sample and place the cursor inside a `section` between two `para` elements (for instance). Press the **Create Report** button from the toolbar. You can see below the toolbar with the action button and sample table inserted by the **Clients Report** action.

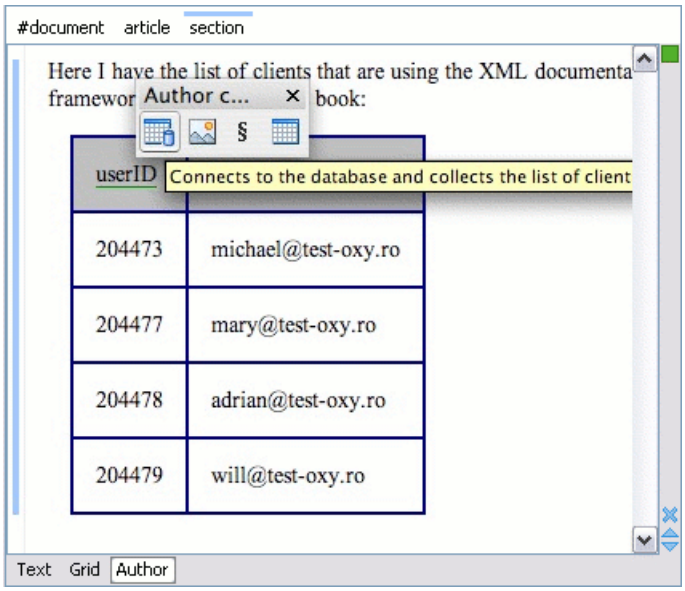


Figure 653: Table Content Extracted from the Database

Localizing Frameworks

Oxygen XML Editor plugin supports *framework* localization (translating *framework* actions, buttons, and menu entries to various languages). This lets you develop and distribute a *framework* to users that speak other languages without changing the distributed *framework*.

To localize the content of a *framework*, create a `translation.xml` file that contains all the translation (key, value) mappings. The `translation.xml` has the following format:

```
<translation>
    <languageList>
        <language description="English" lang="en_US"/>
        <language description="German" lang="de_DE"/>
        <language description="French" lang="fr_FR"/>
    </languageList>
    <key value="list">
        <comment>List menu item name.</comment>
        <val lang="en_US">List</val>
        <val lang="de_DE">Liste</val>
        <val lang="fr_FR">Liste</val>
    </key>
.....................
</translation>
```

Oxygen XML Editor plugin matches the GUI language with the language set in the `translation.xml` file. If this language is not found, the first available language declared in the `languagelist` tag for the corresponding *framework* is used.

Add the directory where this file is located to the **Classpath** list corresponding to the edited document type.

After you create this file, you can use the keys defined in it to customize the name and description of the following:

- Actions
- Menu entries
- Contextual menus
- Toolbars
- Static CSS content

For example, if you want to localize the bold action, open the **Preferences** dialog box and go to **Document Type Association**. Use the **New** or **Edit** button to open the **Document type** configuration dialog box, go to **Author** > **Actions**, and rename the bold action to `${i18n(translation_key)}`. Actions with a name format other than `${i18n(translation_key)}` are not localized. *Translation_key* corresponds to the key from the translation.xml file.

Now open the `translation.xml` file and edit the translation entry if it exists or create one if it does not exist. This example presents an entry in the translation.xml file:

```
<key value="translation_key">
        <comment>Bold action name.</comment>
        <val lang="en_US">Bold</val>
        <val lang="de_DE">Bold</val>
        <val lang="fr_FR">Bold</val>
    </key>
```

To use a description from the `translation.xml` file in the Java code used by your custom *framework*, use the new *ro.sync.ecss.extensions.api.AuthorAccess.getAuthorResourceBundle()* API method to request the associated value for a certain key. This allows all the dialog boxes that you present from your custom operations to have labels translated in multiple languages.

You can also reference a key directly in the CSS content:

```
title:before{
    content:"${i18n(title.key)} : ";
}
```

Note: You can enter any language you want in the `languagelist` tag and any number of keys.

The `translation.xml` file for the DocBook *framework* is located here:*[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/i18n/translation.xml`. In the **Classpath** list corresponding to the DocBook document type the following entry was added: `${framework}/i18n/`.

To see how the DocBook actions are defined to use these keys for their name and description, open the **Preferences** dialog box and go to **Document Type Association** > **Author** > **Actions**. If you look in the Java class *ro.sync.ecss.extensions.docbook.table.SADocbookTableCustomizerDialog* available in the *oxygen-sample-framework* module of the Oxygen SDK Maven archetype, you can see how the new *ro.sync.ecss.extensions.api.AuthorResourceBundle* API is used to retrieve localized descriptions for various keys.

Configuring New Document Templates

A customized *framework* (document type) can point to a directory, usually named `templates`, that contains the document templates. All files found here are considered templates for the respective document type. The template name is taken from the file name, and the template type is detected from the file extension.

To customize new document templates for a *framework*, follow these steps:

1. Go to your custom *framework* directory (*`[OXYGEN_INSTALL_DIR]`*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`) and create a directory named `templates`.
   The directory tree of the custom documentation *framework* should be something like this:

   ```
   [OXYGEN_INSTALL_DIR]
       frameworks
           [CUSTOM_FRAMEWORK_DIR]
               schema
               css
               templates
   ```

2. In the `templates` directory, create two files. A file for the *book* template and another one for the *article* template.

   An example for the Book `.xml` file:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <book xmlns="http://www.oxygenxml.com/sample/documentation"
   xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
   xmlns:abs="http://www.oxygenxml.com/sample/documentation/abstracts">
       <title>Book Template Title</title>
       <section>
           <title>Section Title</title>
           <abs:def/>
           <para>This content is copyrighted:</para>
           <table>
               <header>
                   <td>Company</td>
                   <td>Date</td>
               </header>
               <tr>
                   <td/>
                   <td/>
               </tr>
           </table>
       </section>
       </book>
   ```

   An example for the `Article.xml` file:

   ```
   <?xml version="1.0" encoding="UTF-8"?>
   <article
       xmlns="http://www.oxygenxml.com/sample/documentation"
       xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance">
       <title></title>
       <section>
           <title></title>
           <para></para>
           <para></para>
       </section>
   </article>
   ```

   You can also use editor variables in the content of the template files and they will be expanded when the files are opened.

   Note: You should avoid using the `${cfd}`,`${cf}`,`${currentFileURL}`, and `${cfdu}` editor variables when you save your documents in a data base.

3. Open the **Document Type** configuration dialog box for your custom *framework* and click the **Templates** tab. In the **Templates directory** text field, introduce the `${frameworkDir}/templates` path. It is recommended that all the file references made from a *Document Type Association* to be relative to the **${frameworkDir}** directory. Binding to an absolute file (e. g.: `C:\some_dir\templates`) makes the association difficult to share between users.

4. To test the templates settings, go to **File** > **New** to display the **New** document dialog box. You should see the new templates in the folder for your custom *framework* (in the **Framework templates** section). The names of the two templates are prefixed with the name of the *framework*. Selecting one of them should create a new XML file with the content specified in the template file.

Related Information:

Editor Variables on page 125

Custom Editor Variables on page 130

Configuring XML Catalogs

For cases where you need to reference the location of a schema file from a remote web location and an Internet connection may not be available, an *XML Catalog* may be used to map the web location to a local file system entry. The following procedure presents an example of using an *XML catalog* in a custom *framework* by modifying an XML Schema file.

1. Create a catalog file that will help the parser locate the schema for validating the XML document. The file must map the location of the schema to a local version of the schema.

   Example:

   Create a new XML file called `catalog.xml` and save it in your custom *framework* directory (*[OXYGEN_INSTALL_DIR]*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`). The content of the file should look like this:

   ```
   <?xml version="1.0"?>
   <catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
       <uri name="http://www.oxygenxml.com/SDF/abs.xsd"
               uri="schema/abs.xsd"/>
       <uri name="http://www.oxygenxml.com/SDF/abs.xsd"
                uri="schema/abs.xsd"/>
   </catalog>
   ```

2. Add catalog files to your custom *framework* using the **Catalogs** tab from the **Document Type** configuration dialog box.

To test the catalog settings, restart Oxygen XML Editor plugin and try to validate a new sample document for your custom *framework*. There should be no errors.

Example:

The schema that validates the document refers the other file `abs.xsd` through an **import** element:

```
<xs:import namespace=
 "http://www.oxygenxml.com/sample/documentation/abstracts"
 schemaLocation="http://www.oxygenxml.com/SDF/abs.xsd"/>
```

The `schemaLocation` attribute references the `abs.xsd` file:

```
xsi:schemaLocation="http://www.oxygenxml.com/sample/documentation/abstracts"
    http://www.oxygenxml.com/SDF/abs.xsd"/>
```

The catalog mapping is:

```
http://www.oxygenxml.com/SDF/abs.xsd -> schema/abs.xsd
```

This means that all the references to http://www.oxygenxml.com/SDF/abs.xsd must be resolved to the `abs.xsd` file located in the `schema` directory (note that the `schema` directory needs to be in the same folder as the *XML Catalog*). The URI element is used by URI resolvers (for example, to resolve a URI reference used in an XSLT stylesheet).

Configuring Transformation Scenarios for a Framework

When distributing a *framework* to users, it is a good idea to have the transformation scenarios already configured. This helps the content authors publish their work in various formats. By being contained in the *framework* configuration, the scenarios can be distributed along with the actions, menus, toolbars, and catalogs.

These are the steps that allow you to create a transformation scenario for your *framework*.

1. Create an `xsl` folder inside your custom *framework* directory (*`[OXYGEN_INSTALL_DIR]`*`\frameworks\[CUSTOM_FRAMEWORK_DIR]`).

   The folder structure for the documentation *framework* should be:

   ```
   oxygen
     frameworks
        [CUSTOM_FRAMEWORK_DIR]
          schema
          css
          templates
          xsl
   ```

2. Create the `sdf.xsl` file in the `xsl` folder. The complete content of the `sdf.xsl` file is found in the Example Files Listings.
3. Open the **Preferences** dialog box and go to **Document Type Associations**. Select the particular *framework*, click the **Edit** button to open **Document Type** Configuration dialog box, and choose the **Transformation** tab.

   Click the **New** button and choose the appropriate type of transformation (for example, **XML transformation with XSLT**).

   In the **New scenario** dialog box, fill in the following fields:

   - Fill in the **Name** field with the name of your transformation scenario.
   - Set the **XSL URL** field to path of your custom stylesheet (for example, `${framework}/xsl/mycustom.xsl`).

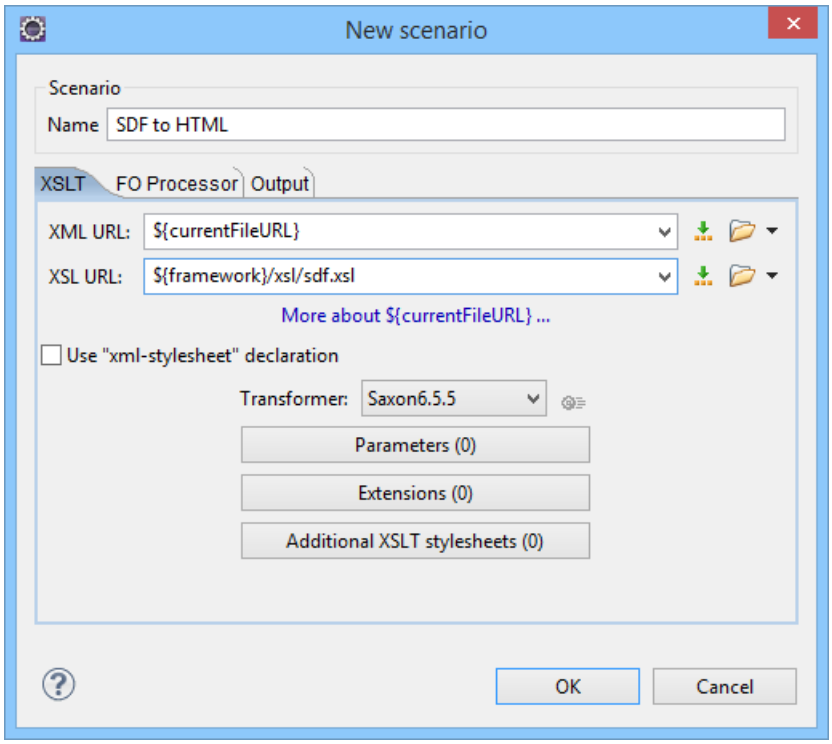


Figure 654: Configuring a New XSLT Transformation Scenario

4. Change to the **Output** tab. Configure the fields as follows:

   - Set the **Save as** field to `${cfd}/${cfn}.html`. This means the transformation output file will have the name of the XML file and the *html* extension and will be stored in the same folder.
   - Select the **Open in Browser/System Application** option.

     Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.
   - Select the **Saved file** option.
5. Click the **OK** button to save the new scenario.

Now the scenario is listed in the **Transformation** tab:

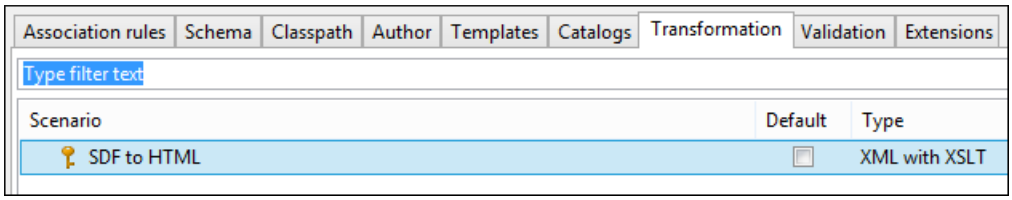


Figure 655: Transformation Tab

To test the transformation scenario that you just created, open the **SDF** XML sample from the Example Files Listings. Click the **Apply Transformation Scenario(s)** button to display the **Transform with** dialog box. The scenario list contains the scenario you defined earlier . Select the *SDF to HTML* scenario that you just defined and click the **Apply associated** button. The HTML file is saved in the same folder as the XML file and displayed in the browser.

Configuring Validation Scenarios for a Framework

You can distribute a *framework* with a series of already configured validation scenarios. Also, this provides enhanced validation support that allows you to use multiple grammars to check the document. For example, you can use Schematron rules to impose guidelines that are otherwise impossible to enforce using conventional validation.

Note: If a *master file* is associated with the current file, the validation scenarios defined in the *master file*, along with any Schematron schema defined in the default scenarios for that particular *framework*, are used for the validation. These take precedence over other types of validation units defined in the default scenarios for the particular *framework*. For more information on *master files*, see Master Files Support on page 381 or Working with Modular XML Files in the Master Files Context on page 588.

To associate a validation scenario with a specific *framework*, follow these steps:

1. Open the **Preferences** dialog box and go to **Document Type Association**.
2. Select the document type and click the **Edit** button to open the **Document Type Configuration** dialog box, then choose the **Validation** tab. This tab displays a list of document types in which you can define validation scenarios. To set one or more of the validation scenarios listed in this tab to be used as the default validation scenario (when another one is not specified in the validation process) for a specific document type, check the **Default** box for that specific document type.
3. To add a new scenario, press the **New** button.
   The **New scenarios** dialog box is displayed. It lists all the validation units for the scenario.

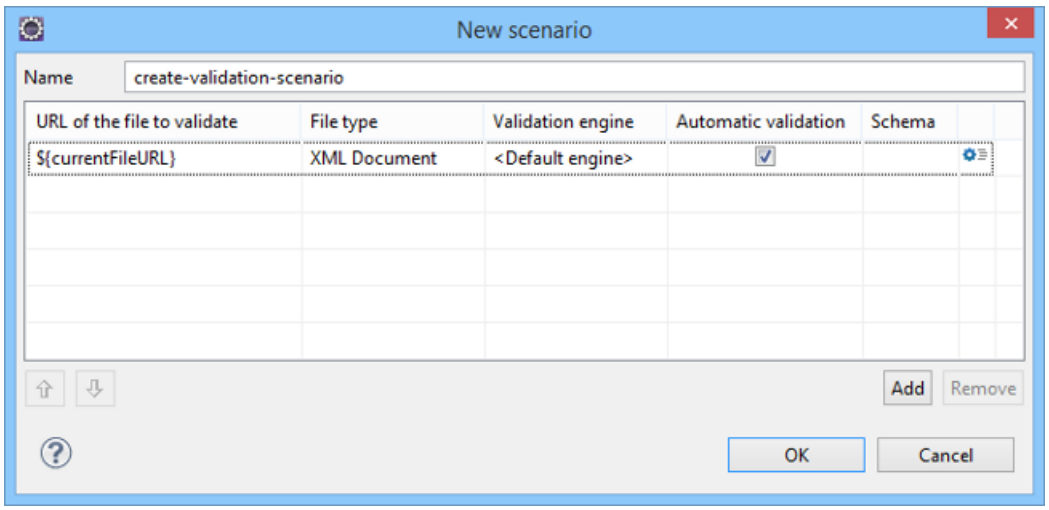


Figure 656: Create New Validation Scenario

This scenario configuration dialog box allows you to configure the following information and options:

Name

The name of the validation scenario.

URL of the file to validate

The URL of the main module that includes the current module. It is also the entry module of the validation process when the current one is validated. To edit the URL, click its cell and specify the URL of the main module by doing one of the following:

- Enter the URL in the text field or select it from the drop-down list.
- Use the **Browse** drop-down button to browse for a local, remote, or archived file.
- Use the **Insert Editor Variable** button to insert an editor variable or a custom editor variable.

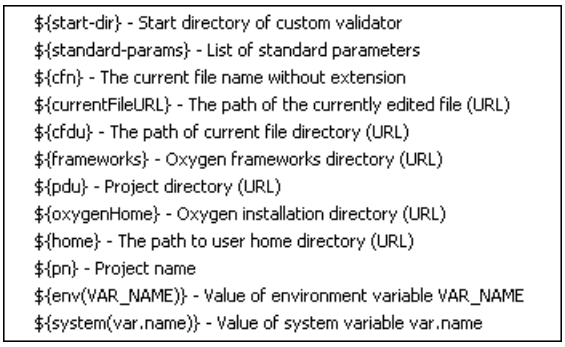


Figure 657: Insert an Editor Variable

File type

The type of the document that is validated in the current validation unit. Oxygen XML Editor plugin automatically selects the file type depending on the value of the **URL of the file to validate** field.

Validation engine

You can select one of the engines available in Oxygen XML Editor plugin for validation of the particular document type.

Default engine means that the default engine is used to run the validation for the current document type, as specified in the preferences page for that type of document (for example, XSLT preferences page, XQuery preferences page, XML Schema preferences page).

The **DITA Validation** engine performs DITA-specific checks in the context of the specifications (it is similar to the checks done with the **DITA Maps Manager** **Validate and Check for Completeness** action, but for a local file rather than an entire *DITA map*).

The **Table Layout Validation** engine looks for table layout problems (for more information, see Report table layout problems on page).

Automatic validation

If this option is selected, the validation operation defined by this row is also applied by the automatic validation feature. If the **Automatic validation** feature is disabled in the Document Checking preferences page, then this option is ignored, as the preference setting has a higher priority.

Schema

This option becomes active when you set the **File type** to **XML Document** and allows you to specify the schema used for the validation unit.

Specify Schema

Opens the **Specify Schema** dialog box that allows you to set a schema to be used for validating XML documents.

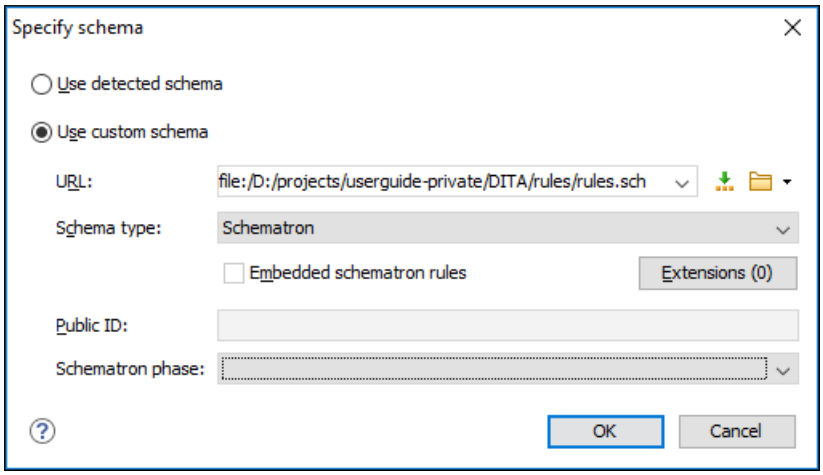


Figure 658: Specify Schema Dialog Box

The **Specify Schema** dialog box contains the following options:

Use detected schema

Uses the schema detected for the particular document.

Use custom schema

Allows you to specify the schema using the following options:

- **URL** - Allows you to specify or select a URL for the schema. It also keeps a history of the last used schemas. The URL must point to the schema file that can be loaded from the local disk or from a remote server through HTTP(S), FTP(S). You can specify the URL by using the text field, the history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.
- **Schema type** - Select a possible schema type from this combo box that is populated based on the extension of the schema file that was entered in the **URL** field. The possible schema types are: XML Schema, DTD, Relax NG, Relax NG Compact, Schematron, or NVDL.
- **Embedded schematron rules** - If you have selected XML Schema or Relax NG schemas with embedded Schematron rules and you want to use those embedded rules, select this option.
- **Extensions**- Opens a dialog box that allows you to specify *Java extension JARs* to be used during the validation.
- **Public ID** - Allows you to specify a public ID if you have selected a DTD.
- **Schematron phase** - If you select a Schematron schema, this drop-down list allows you to select a Schematron phase that you want to use for validation. The listed phases are defined in the Schematron document.

Move Up

Moves the selected scenario up one spot in the list.

Move Down

Moves the selected scenario down one spot in the list.

Add

Adds a new validation unit to the list.

Remove

Removes an existing validation unit from the list.

4. Configure any of the existing validation units according to the information above, and you can use the buttons at the bottom of the table to add, remove, or move validation units. Note that if you add a Schematron validation unit, you can also select the **validation phase**.
5. Press **Ok**.

The newly created validation scenario is now included in the list of scenarios in the **Validation** tab. You can use the **Default** checkbox to specify that the new scenario be used as the default validation scenario when another specific scenario is not specified in the validation process.

Customizing Smart Paste Support

The *Smart Paste* feature preserves certain style and structure information when copying content from some of the most common applications and pasting into *frameworks* (document types) that support *Smart Paste* in Oxygen XML Editor plugin. For other document types, the default behavior of the paste operation is to keep only the text content without the styling.

The style of the pasted content can be customized by editing an XSLT stylesheet for a particular document type (*framework*). The XSLT stylesheet must accept an XHTML flavor of the copied content as input, and transform it to the equivalent XML markup that is appropriate for the target document type of the paste operation.

How to Customize the Smart Paste Mapping

To customize the mapping between the markup of the copied content and the markup of the pasted content for a particular document type, follow these steps:

1. Make sure the particular *framework* contains a folder named `resources` in the following path structure:

   [OXYGEN_INSTALL_DIR]`/frameworks/[Document Type]/resources`
2. Create an XSLT file named `xhtml2content.xsl` and save it in the `resources` folder for the particular *framework*.

   For example: *[OXYGEN_INSTALL_DIR]*`/frameworks/[Document Type]/resources/xhtml2content.xsl`
3. Add your customized styling in the XSLT file.
4. You can test modifications done in the stylesheet by pasting content without having to restart Oxygen XML Editor plugin.

Result: When you paste content from external applications (such as a web browser or and Office document) to a document that is opened in **Author** mode, and that matches the particular *framework*, the styling from the `xhtml2content.xsl` stylesheet will be applied on the clipboard contents.

Customized Smart Paste Stylesheet Sample:

```
<xsl:stylesheet version="1.0"
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:xhtml="http://www.w3.org/1999/xhtml"
  xmlns="urn:hl7-org:v3"
  exclude-result-prefixes="xsl xhtml">

  <xsl:output method="xml" indent="no" omit-xml-declaration="yes"/>

  <xsl:template match="xhtml:b | xhtml:strong">
    <content styleCode="bold" >
      <xsl:apply-templates select="@* | node()"/>
    </content>
  </xsl:template>

  <xsl:template match="*">
    <xsl:apply-templates select="@* | node()"/>
  </xsl:template>

  <xsl:template match="@* | node()">
    <xsl:copy>
      <xsl:apply-templates select="@* | node()"/>
    </xsl:copy>
  </xsl:template>

</xsl:stylesheet>
```

Tip: The built-in DITA framework includes a `xhtml2ditaDriver.xsl` file (in *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/resources`) that imports various other stylesheets that apply cleanup and handle the conversion from the pasted HTML content to DITA. If you are using a custom extension of the DITA framework, you can copy the entire contents of the built-in `dita/resources` folder and customize the stylesheets according to your needs.

Related Information:

Smart Paste Mechanism on page 457

Oxygen XML Blog: How Special Paste Works in Oxygen (DITA)

Configuring Extensions

You can add *extensions* to your custom *framework* (document type) by using the **Extensions** tab from the **Document Type** configuration dialog box.

Configuring an Extensions Bundle

All *extensions* that are provided by Oxygen XML Editor plugin are includes in a single bundle.

Note: The individual extensions can still be set (open the **Preferences** dialog box , go to **Document Type Association**, double-click a document type, and go to the extension tab), and if present, they take precedence over the single provider. However, this practice is discouraged and the single provider should be used instead.

The extensions bundle is represented by the *ro.sync.ecss.extensions.api.ExtensionsBundle* class. The provided implementation of the `ExtensionsBundle` is instantiated when the *Document Type Association* rules defined for the custom *framework* matches a document opened in the editor. Therefore, references to objects that need to be persistent throughout the application running session must not be kept in the bundle because the next detection event can result in creating another *ExtensionsBundle* instance.

To configure an extensions bundle, follow this procedure:

1. Create a new Java project in your IDE. Create a `lib` folder in the Java project folder and copy in it the `oxygen.jar` file from the *`[OXYGEN_INSTALL_DIR]`*`/lib` folder.
2. Create the class (for example, *simple.documentation.framework.SDFExtensionsBundle*) to extend the abstract class *ro.sync.ecss.extensions.api.ExtensionsBundle*.

   For example:

   ```
   public class SDFExtensionsBundle extends ExtensionsBundle {
   ```

3. A `Document Type ID` and a short description should be defined first by implementing the methods *getDocumentTypeID* and *getDescription*. The `Document Type ID` is used to uniquely identify the current *framework*. Such an ID must be provided especially if options related to the *framework* need to be persistently stored and retrieved between sessions.

   For example:

   ```
   public String getDocumentTypeID() {
        return "Simple.Document.Framework.document.type";
   }

   public String getDescription() {
        return "A custom extensions bundle used for the Simple Document" +
                     "Framework document type";
   }
   ```

4. To be notified about the activation of the custom *Author Extension* in relation with an opened document, *ro.sync.ecss.extensions.api.AuthorExtensionStateListener* should be implemented. The **activation** and **deactivation** events received by this listener should be used to perform custom initializations and to register or remove listeners such as *ro.sync.ecss.extensions.api.AuthorListener*, *ro.sync.ecss.extensions.api.AuthorMouseListener*, or *ro.sync.ecss.extensions.api.AuthorCaretListener*. The custom *Author Extension* state listener should be provided by implementing the *createAuthorExtensionStateListener* method.

   For example:

   ```
   public AuthorExtensionStateListener createAuthorExtensionStateListener() {
        return new SDFAuthorExtensionStateListener();
   }
   ```

   The `AuthorExtensionStateListener` is instantiated and notified about the activation of the *framework* when the rules of the *Document Type Association* match a document opened in the **Author** editing mode. The listener is notified about the deactivation when another *framework* is activated for the same document, the user switches to another mode or the editor is closed. A complete description and implementation of *ro.sync.ecss.extensions.api.AuthorExtensionStateListener* can be found in Implementing an Author Extension State Listener.

If Schema Aware mode is active in Oxygen XML Editor plugin, all actions that can generate invalid content will be redirected toward the *ro.sync.ecss.extensions.api.AuthorSchemaAwareEditingHandler*. The handler can resolve a specific case, let the default implementation take place, or reject the edit entirely by throwing an *ro.sync.ecss.extensions.api.InvalidEditException*. The actions that are forwarded to this handler include typing, delete, or paste.

See Implementing a Schema-Aware Editing Handler Adapter on page 1275 for more details about this handler.

5. Customizations of the content completion proposals are permitted by creating a schema manager filter extension. The interface that declares the methods used for content completion proposals filtering is *ro.sync.contentcompletion.xml.SchemaManagerFilter*. The filter can be applied on elements, attributes, or on their values. The *createSchemaManagerFilter* method is responsible for creating the content completion filter. A new `SchemaManagerFilter` will be created each time a document matches the rules defined by the *Document Type Association* that contains the filter declaration.

   For example:

   ```
   public SchemaManagerFilter createSchemaManagerFilter() {
        return new SDFSchemaManagerFilter();
   }
   ```

   A detailed presentation of the schema manager filter can be found in the Configuring a Content Completion Handler section.

6. The **Author** mode supports link-based navigation between documents and document sections. Therefore, if the document contains elements defined as links to other elements (for example, links based on the `id` attributes), the extension should provide the means to find the referenced content. To do this, an implementation of the *ro.sync.ecss.extensions.api.link.ElementLocatorProvider* interface should be returned by the *createElementLocatorProvider* method. Each time an element pointed by a link needs to be located, the method is invoked.

   For example:

   ```
   public ElementLocatorProvider createElementLocatorProvider() {
        return new DefaultElementLocatorProvider();
   }
   ```

   For more information on how to implement an element locator provider, see the Configuring a Link Target Element Finder section.

7. The drag and drop functionality can be extended by implementing the *ro.sync.exml.editor.xmleditor.pageauthor.AuthorDnDListener* interface. Relevant methods from the listener are invoked when the mouse is dragged, moved over, or exits the **Author** editing mode, when the drop action changes, and when the drop occurs. Each method receives the `DropTargetEvent` containing information about the drag and drop operation. The drag and drop extensions are available in **Author** mode for both Oxygen XML Editor plugin Eclipse plugin and standalone application. The **Text** mode corresponding listener is available only for Oxygen XML Editor plugin Eclipse plugin. The methods corresponding to each implementation are: *createAuthorAWTDndListener*, *createTextSWTDndListener*, and *createAuthorSWTDndListener*.

   ```
   public AuthorDnDListener createAuthorAWTDndListener() {
        return new SDFAuthorDndListener();
   }
   ```

   For more details about the **Author** mode drag and drop listeners, see the Configuring a custom Drag and Drop Listener section.

8. Another extension that can be included in the bundle is the reference resolver. In our example, the references are represented by the **ref** element and the attribute indicating the referenced resource is **location**. To be able to obtain the content of the referenced resources you will have to implement a Java extension class that implements *ro.sync.ecss.extensions.api.AuthorReferenceResolver*. The method responsible for creating the custom references resolver is *createAuthorReferenceResolver*. The method is called each time a document opened in an **Author** editing mode matches the *Document Type Association* where the extensions bundle is defined. The instantiated references resolver object is kept and used until another extensions bundle corresponding to another document type is activated as result of the detection process.

For example:

```
public AuthorReferenceResolver createAuthorReferenceResolver() {
     return new ReferencesResolver();
}
```

A more detailed description of the references resolver can be found in the Configuring a References Resolver section.

9. To be able to dynamically customize the default CSS styles for a certain *ro.sync.ecss.extensions.api.node.AuthorNode*, an implementation of *ro.sync.ecss.extensions.api.StylesFilter* can be provided. The extensions bundle method responsible for creating the `StylesFilter` is *createAuthorStylesFilter*. The method is called each time a document opened in an **Author** editing mode matches the *Document Type Association* where the extensions bundle is defined. The instantiated filter object is kept and used until another extensions bundle corresponding to another document type is activated as a result of the detection process.

   For example:

   ```
   public StylesFilter createAuthorStylesFilter() {
        return new SDFStylesFilter();
   }
   ```

   See the Configuring CSS Styles Filter section for more details about the styles filter extension.

10. To edit data in custom tabular format, implementations of the *ro.sync.ecss.extensions.api.AuthorTableCellSpanProvider* and the *ro.sync.ecss.extensions.api.AuthorTableColumnWidthProvider* interfaces should be provided. The two methods from the `ExtensionsBundle` specifying these two extension points are *createAuthorTableCellSpanProvider* and *createAuthorTableColumnWidthProvider*.

    For example:

    ```
    public AuthorTableCellSpanProvider createAuthorTableCellSpanProvider() {
         return new TableCellSpanProvider();
    }

    public AuthorTableColumnWidthProvider
             createAuthorTableColumnWidthProvider() {
         return new TableColumnWidthProvider();
    }
    ```

    The two table information providers are not reused for different tables. The methods are called for each table in the document so new instances should be provided every time. Read more about the cell span and column width information providers in Configuring a Table Cell Span Provider and Configuring a Table Column Width Provider sections.

    If the functionality related to one of the previous extension point does not need to be modified, then the developed *ro.sync.ecss.extensions.api.ExtensionsBundle* should not override the corresponding method and leave the default base implementation to return **null**.

11. An XML vocabulary can contain links to various areas of a document. If the document contains elements defined as links, you can choose to present a more relevant text description for each link. To do this, an implementation of the *ro.sync.ecss.extensions.api.link.LinkTextResolver* interface should be returned by the *createLinkTextResolver* method. This implementation is used each time the *oxy_link-text() function* is encountered in the CSS styles associated with an element.

    For example:

    ```
    public LinkTextResolver createLinkTextResolver() {
      return new DitaLinkTextResolver();
    }
    ```

    Oxygen XML Editor plugin offers built-in implementations for DITA and DocBook: *ro.sync.ecss.extensions.dita.link.DitaLinkTextResolver* and *ro.sync.ecss.extensions.docbook.link.DocbookLinkTextResolver* respectively.

12. Pack the compiled class into a *JAR* file.

13. Copy the *JAR* file into your custom *framework* directory (for example, `frameworks/sdf`).

14. Add the *JAR* file to the class path. To do this, open the **Preferences** dialog box , go to **Document Type Association**, select the document type (for example, *SDF*), press the **Edit** button, select the **Classpath** tab, and press the **Add** button . In the displayed dialog box, enter the location of the *JAR* file relative to the Oxygen XML Editor plugin `frameworks` folder.
15. Register the Java class by going to the **Extensions** tab. Press the **Choose** button and select the name of the class (for example, *SDFExtensionsBundle*).

    Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Related Information:

Customizing Elements that Wrap Profiled Content

For each *framework* (document type), you can configure the phrase-type elements that wrap the profiled content by setting a custom *ro.sync.ecss.extensions.api.ProfilingConditionalTextProvider*. This configuration is set by default for DITA and DocBook *frameworks*.

Implementing a Schema-Aware Editing Handler Adapter

The *AuthorSchemaAwareEditingHandlerAdapter* extension point allows you to handle certain **Author** mode actions in various ways. For example, implementing the `AuthorSchemaAwareEditingHandlerAdapter` makes it possible to handle events such as typing, the keyboard delete event at a given offset (using Delete or Backspace keys), delete element tags, delete selection, join elements, or paste fragment. It also makes it possible to improve solutions that are proposed by the paste mechanism in Oxygen XML Editor plugin when pasting content (through the use of some specific methods).

How to Implement an *AuthorSchemaAwareEditingHandlerAdapter*

For this handler to be called, the **Schema Aware Editing** option must be set to **On** or **Custom** in the **Schema-Aware** preferences page. The handler can either resolve a specific case, let the default implementation take place, or reject the edit entirely by throwing an `InvalidEditException`.

To implement your own *AuthorSchemaAwareEditingHandlerAdapter*, follow this procedure:

1. Implement the *ro.sync.ecss.extensions.api.AuthorSchemaAwareEditingHandlerAdapter* extension.
2. To instruct Oxygen XML Editor plugin to use this newly created implementation, configure an extensions bundle and return the *AuthorSchemaAwareEditingHandlerAdapter* implementation using the *ro.sync.ecss.extensions.api.ExtensionsBundle.getAuthorSchemaAwareEditingHandlerAdapter()* method.

Example

Typing events can be handled using the *handleTyping* method. For example, the `AuthorSchemaAwareEditingHandler` checks if the schema is not a learned one, was loaded successfully, and if the **Smart paste and drag and drop** option is selected. If these conditions are met, the event will be handled.

```
public class AuthorSchemaAwareEditingHandlerAdapter
             extends AuthorSchemaAwareEditingHandler {

/**
 * @see AuthorSchemaAwareEditingHandler#handleTyping
(int, char, ro.sync.ecss.extensions.api.AuthorAccess)
 */
public boolean handleTyping(int offset, char ch, AuthorAccess authorAccess)
throws InvalidEditException {
  boolean handleTyping = false;
  AuthorSchemaManager authorSchemaManager =
authorAccess.getDocumentController().getAuthorSchemaManager();
  if (!authorSchemaManager.isLearnSchema() &&
      !authorSchemaManager.hasLoadingErrors() &&
      authorSchemaManager.getAuthorSchemaAwareOptions().isEnableSmartTyping()) {
    try {
      AuthorDocumentFragment characterFragment =
authorAccess.getDocumentController().createNewDocumentTextFragment
(String.valueOf(ch));
      handleTyping = handleInsertionEvent
(offset, new AuthorDocumentFragment[] {characterFragment}, authorAccess);
    } catch (AuthorOperationException e) {
```

```
      throw new InvalidEditException
(e.getMessage(), "Invalid typing event: " + e.getMessage(), e, false);
    }
  }
  return handleTyping;
}
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Methods for Improving the Paste Mechanism

getAncestorDetectionOptions

When pasting content in **Author** mode, if the result causes the document to become invalid, Oxygen XML Editor plugin will propose solutions to make it valid. As a possible solution, Oxygen XML Editor plugin might surround the pasted content in a sequence of ancestor elements. This *getAncestorDetectionOptions* method allows you to choose which parent elements might be a possible solution.

canBeReplaced

Allows you to improve solutions that might be proposed by the paste mechanism when pasting content in Oxygen XML Editor plugin. For example, when pasting an element inside an empty element with the same name, this *canBeReplaced* method allows Oxygen XML Editor plugin to replace the empty node rather than pasting it after or before the empty node. The callback could also reject this behavior if, for instance, the replacement node contains attributes.

Related Information:

AuthorDocumentFragment Class

Implementing an Edit Properties Handler for Author Mode

The *EditPropertiesHandler* extension point allows you to present a specialized dialog box when the action of double-clicking an element tag is intercepted in **Author** mode. For example, you could use it to present a dialog box that allows the user to editing the properties of an image.

How to Implement an *EditPropertiesHandler*

To implement your own *EditPropertiesHandler*, follow this procedure:

1. Implement the *ro.sync.ecss.extensions.api.EditPropertiesHandler* interface.
2. To instruct Oxygen XML Editor plugin to use this newly created implementation, use either of the following methods:
   a. If you have configured an extensions bundle, you can return the *EditPropertiesHandler* implementation using the *ro.sync.ecss.extensions.api.ExtensionsBundle.createEditPropertiesHandler()* method.
   b. Specify the *EditPropertiesHandler* in the **Author edit properties handler** individual extension in the **Extensions** tab of the **Document Type** configuration dialog box for your particular document type.

Example

The following example illustrates an implementation for presenting a simple properties editing dialog box when a user double-clicks an `image` tag in **Author** mode (with tags displayed from the **Tags display mode** drop-down menu):

```
public class CustomEditPropertiesHandler implements EditPropertiesHandler {

  /**
   * @see ro.sync.ecss.extensions.api.Extension#getDescription()
   */
  @Override
  public String getDescription() {
    return "Sample implementation that handles properties for a table element.";
  }

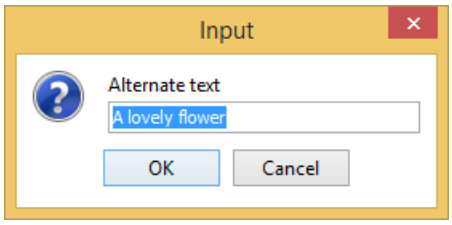
  /**
   * @see ro.sync.ecss.extensions.api.EditPropertiesHandler#canEditProperties
(ro.sync.ecss.extensions.api.node.AuthorNode)
   */
  @Override
  public boolean canEditProperties(AuthorNode authorNode) {
    // If this node is an image element we can edit its properties.
```

```
    return "image".equals(authorNode.getDisplayName());
  }

  /**
   * @see ro.sync.ecss.extensions.api.EditPropertiesHandler#editProperties
(ro.sync.ecss.extensions.api.node.AuthorNode,
 ro.sync.ecss.extensions.api.AuthorAccess)
   */
  @Override
  public void editProperties(AuthorNode authorNode, AuthorAccess authorAccess) {
    // If we receive this call then it surely an image.
    AuthorElement imageElement = (AuthorElement) authorNode;
    String currentValue = "";
    AttrValue altValue = imageElement.getAttribute("alt");
    if (altValue != null) {
      currentValue = altValue.getValue();
    }
    String newValue = JOptionPane.showInputDialog(
        (Component) authorAccess.getWorkspaceAccess().getParentFrame(),
        "Alternate text",
        currentValue);

    if (newValue != null) {
      authorAccess.getDocumentController().setAttribute
("alt", new AttrValue(newValue), imageElement);
    }
  }
}
```

Example result: If a user were to double-click an `image` tag icon ( ) in **Author** mode, the following dialog box would be displayed that allows the user to edit the *alternate text* property for the image:



Implementing a Custom Attribute Value Editor

The *CustomAttributeValueEditor* extension point allows you customize the attribute value editing mechanisms in Oxygen XML Editor plugin. It changes the **Browse** button found in the attribute editors to an **Edit** button. When a user clicks that **Edit** button, your custom attribute value editor will be presented.

The **Edit** button can be accessed in the following attribute editors:

- The **Attributes** view in **Author** mode (when the **Expand** button is used to reveal an expanded panel).
- The **Attributes** view in **Text** mode (when the **Expand** button is used to reveal an expanded panel).
- The **In-place Attributes Editor** when invoked in **Author** mode.
- The **In-place Attributes Editor** invoked in the **Outline** view when editing in **Author** mode.
- The **In-place Attributes Editor** invoked in the **Outline** view when editing in **Text** mode.

How to Implement a *CustomAttributeValueEditor*

To implement your own *CustomAttributeValueEditor*, follow this procedure:

1. Extend the *ro.sync.ecss.extensions.api.CustomAttributeValueEditor* abstract class.
2. To instruct Oxygen XML Editor plugin to use this newly created implementation, use either of the following methods:
   a. If you have configured an extensions bundle, you can return the *CustomAttributeValueEditor* implementation using the *ro.sync.ecss.extensions.api.ExtensionsBundle.createCustomAttributeValueEditor()* method.
   b. Specify the *CustomAttributeValueEditor* in the **Author custom attribute value editor** individual extension in the **Extensions** tab of the **Document Type** configuration dialog box for your particular document type.

Example

The following example creates a very simple custom attribute value editor:

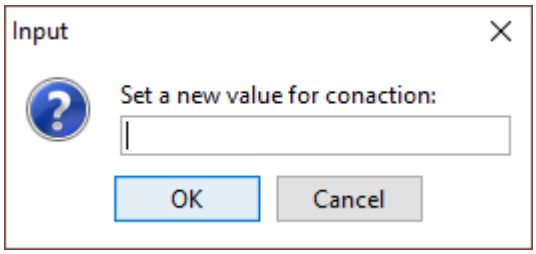
```
/**
 * A custom attribute value editor.
 */
public class MyCustomAttributeValueEditor extends CustomAttributeValueEditor {

  /**
   * @see ro.sync.ecss.extensions.api.Extension#getDescription()
   */
  @Override
  public String getDescription() {
    return "My custom attribute value editor";
  }

  /**
   * @see ro.sync.ecss.extensions.api.CustomAttributeValueEditor#getAttributeValue
           (ro.sync.ecss.extensions.api.EditedAttribute, java.lang.Object)
   */
  @Override
  public String getAttributeValue(EditedAttribute attribute, Object parentComponent)
      throws CancelledByUserException {
    // Show an input dialog for collecting the new value
    return JOptionPane.showInputDialog
                    ("Set a new value for " + attribute.getAttributeQName() + ":");
  }

  /**
   * @see ro.sync.ecss.extensions.api.CustomAttributeValueEditor#shouldHandleAttribute
                   (ro.sync.ecss.extensions.api.EditedAttribute)
   */
  @Override
  public boolean shouldHandleAttribute(EditedAttribute attribute) {
    // Handle all attributes
    return true;
  }
}
```

Example result: If a user were to click the **Edit** button in any of the attribute editors, the following dialog box would be displayed that allows the user to insert a value for the particular attribute:



Implementing an Author Mode Action Event Handler

The *AuthorActionEventHandler* extension point allows you to handle certain **Author** mode actions in a special way. For example, a specific use-case would be if you want to insert new lines when you press **Enter** instead of it opening the *Content Completion Assistant*.

How to Implement an *AuthorActionEventHandler*

To implement your own *AuthorActionEventHandler*, follow this procedure:

1. Implement the *ro.sync.ecss.extensions.api.AuthorActionEventHandler* interface.
2. To instruct Oxygen XML Editor plugin to use this newly created implementation, use either of the following methods:
   a. If you have configured an extensions bundle, you can return the *AuthorActionEventHandler* implementation using the *ro.sync.ecss.extensions.api.ExtensionsBundle.getAuthorActionEventHandler()* method.
   b. Specify the *AuthorActionEventHandler* in the **Author action event handler** individual extension in the **Extensions** tab of the **Document Type** configuration dialog box for your particular document type.

Example

The following example illustrates the use-case mentioned in the introduction, that is an implementation for inserting a new line when the user presses **Enter** in **Author** mode. It uses the *canHandleEvent* method to

make sure the insertion will be performed in an element that will preserve the `new-line` character. Then the *handleEvent* method inserts the new line at the current cursor position.

```
public class CustomAuthorActionEventHandler implements AuthorActionEventHandler
{

 /**
  * @see ro.sync.ecss.extensions.api.AuthorActionEventHandler#canHandleEvent
(AuthorAccess, AuthorActionEventType)
  */
  @Override
  public boolean canHandleEvent(AuthorAccess authorAccess,
AuthorActionEventType type) {
    boolean canHandle = false;

    if (type == AuthorActionEventType.ENTER) {
      AuthorDocumentController documentController =
authorAccess.getDocumentController();
    int caretOffset = authorAccess.getEditorAccess().getCaretOffset();
    try {
      AuthorNode nodeAtOffset = documentController.getNodeAtOffset(caretOffset);
      if (nodeAtOffset instanceof AuthorElement) {
        AuthorElement elementAtOffset = (AuthorElement) nodeAtOffset;
        AttrValue xmlSpace = elementAtOffset.getAttribute("xml:space");
        if (xmlSpace != null && xmlSpace.getValue().equals("preserve")) {
          canHandle = true;
        }
      }
    } catch (BadLocationException ex) {
        if (logger.isDebugEnabled()) {
          logger.error(ex.getMessage(), ex);
        }
      }
    }

    return canHandle;
  }

 /**
  * @see ro.sync.ecss.extensions.api.AuthorActionEventHandler#handleEvent
(ro.sync.ecss.extensions.api.AuthorAccess,
ro.sync.ecss.extensions.api.AuthorActionEventHandler.AuthorActionEventType)
  */
  @Override
  public boolean handleEvent(AuthorAccess authorAccess,
 AuthorActionEventType eventType) {
    int caretOffset = authorAccess.getEditorAccess().getCaretOffset();
    // Insert a new line
    authorAccess.getDocumentController().insertText(caretOffset, "\n");
    return true;
  }

  /**
   * @see ro.sync.ecss.extensions.api.Extension#getDescription()
   */
  @Override
  public String getDescription() {
    return "Insert a new line";
  }
}
```

Implementing an Image Decorator for Author Mode

The *AuthorImageDecorator* extension point allows you to add a custom decorator over images in **Author** mode. For example, you could use it to add a message over an image informing the user that they can double-click the image to edit it.

How to Implement an *AuthorImageDecorator*

To implement your own *AuthorImageDecorator*, follow this procedure:

1. Implement the *ro.sync.ecss.extensions.api.AuthorImageDecorator* interface.
2. To instruct Oxygen XML Editor plugin to use this newly created implementation, use either of the following methods:
   a. If you have configured an extensions bundle, you can return the *AuthorImageDecorator* implementation using the *ro.sync.ecss.extensions.api.ExtensionsBundle.getAuthorImageDecorator()* method.
   b. Specify the *AuthorImageDecorator* in the **Author image decorator** individual extension in the **Extensions** tab of the **Document Type** configuration dialog box for your particular document type.

Example

The following example illustrates an implementation for presenting a simple message over an image that informs the user that they can double-click the image to edit it:

```
/**
 * Custom Author image decorator for drawing string over images.
 */
public class CustomAuthorImageDecorator extends AuthorImageDecorator {

  /**
   * @see ro.sync.ecss.extensions.api.AuthorImageDecorator#paint
(ro.sync.exml.view.graphics.Graphics, int, int, int, int,
 ro.sync.exml.view.graphics.Rectangle,
 ro.sync.ecss.extensions.api.node.AuthorNode,
 ro.sync.ecss.extensions.api.AuthorAccess, boolean)
   */
  @Override
  public void paint(Graphics g, int x, int y, int imageWidth, int imageHeight,
      Rectangle originalSize, AuthorNode element,
 AuthorAccess authorAccess, boolean wasAnnotated) {
    if ("image".equals(CommonsOperationsUtil.getLocalName(element.getName()))) {
      g.drawString(
          "[Double-click to edit image]",
          // Draw near the top-left corner
          x + 15,
          y + 15);
    }
  }
```

Example result: In the top-left corner of the image, the following message will be displayed: `[Double-click to edit image]`.

Implementing a State Listener for Author Mode

The *ro.sync.ecss.extensions.api.AuthorExtensionStateListener* implementation is notified when the **Author** mode extension (where the listener is defined) is activated or deactivated in the document type detection process.

```
import ro.sync.ecss.extensions.api.AuthorAccess;
import ro.sync.ecss.extensions.api.AuthorExtensionStateListener;

public class SDFAuthorExtensionStateListener implements
  AuthorExtensionStateListener {
  private AuthorListener sdfAuthorDocumentListener;
  private AuthorMouseListener sdfMouseListener;
  private AuthorCaretListener sdfCaretListener;
  private OptionListener sdfOptionListener;
```

When the association rules of the *framework* (document type) configuration match that of a document opened in the **Author** editing mode, the *activation* event received by this listener should be used to perform custom initializations and to register listeners such as *ro.sync.ecss.extensions.api.AuthorListener*, *ro.sync.ecss.extensions.api.AuthorMouseListener*, or *ro.sync.ecss.extensions.api.AuthorCaretListener*.

```
 public void activated(AuthorAccess authorAccess) {
   // Get the value of the option.
   String option = authorAccess.getOptionsStorage().getOption(
               "sdf.custom.option.key", "");
   // Use the option for some initializations...

   // Add an OptionListener.
   authorAccess.getOptionsStorage().addOptionListener(sdfOptionListener);

   // Add author DocumentListeners.
   sdfAuthorDocumentListener = new SDFAuthorListener();
   authorAccess.getDocumentController().addAuthorListener(
              sdfAuthorDocumentListener);

   // Add MouseListener.
   sdfMouseListener = new SDFAuthorMouseListener();
   authorAccess.getEditorAccess().addAuthorMouseListener(sdfMouseListener);

   // Add CaretListener.
   sdfCaretListener = new SDFAuthorCaretListener();
   authorAccess.getEditorAccess().addAuthorCaretListener(sdfCaretListener);

   // Other custom initializations...

 }
```

The **authorAccess** parameter received by the *activated* method can be used to gain access to specific **Author** mode actions and informations related to components such as the editor, document, workspace, tables, or the *change tracking* manager.

If options specific to the custom developed *Author Extension* need to be stored or retrieved, a reference to the *ro.sync.ecss.extensions.api.OptionsStorage* can be obtained by calling the *getOptionsStorage* method from the **authorAccess**. The same object can be used to register *ro.sync.ecss.extensions.api.OptionListener* listeners. An option listener is registered in relation with an option **key** and will be notified about the value changes of that option.

An *AuthorListener* can be used if events related to the **Author** mode document modifications are of interest. The listener can be added to the *ro.sync.ecss.extensions.api.AuthorDocumentController*. A reference to the document controller is returned by the *getDocumentController* method from the **authorAccess**. The document controller can also be used to perform operations involving document modifications.

To provide access to the **Author** mode component-related functionality and information, the **authorAccess** has a reference to the *ro.sync.ecss.extensions.api.access.AuthorEditorAccess* that can be obtained when calling the *getEditorAccess* method. At this level, *AuthorMouseListener* and *AuthorCaretListener* can be added to provide notification of mouse and cursor events that occur in the **Author** editor mode.

The *deactivation* event is received when another *framework* is activated for the same document, the user switches to another editor mode or the editor is closed. The *deactivate* method is typically used to unregister the listeners previously added on the *activate* method and to perform other actions. For example, options related to the deactivated *Author Extension* can be saved at this point.

```
public void deactivated(AuthorAccess authorAccess) {
  // Store the option.
  authorAccess.getOptionsStorage().setOption(
              "sdf.custom.option.key", optionValue);

  // Remove the OptionListener.
  authorAccess.getOptionsStorage().removeOptionListener(sdfOptionListener);

  // Remove DocumentListeners.
  authorAccess.getDocumentController().removeAuthorListener(
              sdfAuthorDocumentListener);

  // Remove MouseListener.
  authorAccess.getEditorAccess().removeAuthorMouseListener(sdfMouseListener);

  // Remove CaretListener.
  authorAccess.getEditorAccess().removeAuthorCaretListener(sdfCaretListener);

  // Other actions...

}
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a Content Completion Handler

You can filter or contribute to proposals offered for content completion by implementing the *ro.sync.contentcompletion.xml.SchemaManagerFilter* interface.

```
import java.util.List;

import ro.sync.contentcompletion.xml.CIAttribute;
import ro.sync.contentcompletion.xml.CIElement;
import ro.sync.contentcompletion.xml.CIValue;
import ro.sync.contentcompletion.xml.Context;
import ro.sync.contentcompletion.xml.SchemaManagerFilter;
import ro.sync.contentcompletion.xml.WhatAttributesCanGoHereContext;
import ro.sync.contentcompletion.xml.WhatElementsCanGoHereContext;
import ro.sync.contentcompletion.xml.WhatPossibleValuesHasAttributeContext;

public class SDFSchemaManagerFilter implements SchemaManagerFilter {
```

You can implement the various callbacks of the interface either by returning the default values given by Oxygen XML Editor plugin or by contributing to the list of proposals. The filter can be applied on elements, attributes or on their values. Attributes filtering can be implemented using the *filterAttributes* method and changing the default content completion list of *ro.sync.contentcompletion.xml.CIAttribute* for the element provided by the current *ro.sync.contentcompletion.xml.WhatAttributesCanGoHereContext* context. For example, the `SDFSchemaManagerFilter` checks if the element from the current context is the `table` element and adds the `frame` attribute to the `table` list of attributes.

```
/**
 * Filter attributes of the "table" element.
 */
```

```
public List<CIAttribute> filterAttributes(List<CIAttribute> attributes,
    WhatAttributesCanGoHereContext context) {
  // If the element from the current context is the 'table' element add the
  // attribute named 'frame' to the list of default content completion proposals
  if (context != null) {
    ContextElement contextElement = context.getParentElement();
    if ("table".equals(contextElement.getQName())) {
      CIAttribute frameAttribute = new CIAttribute();
      frameAttribute.setName("frame");
      frameAttribute.setRequired(false);
      frameAttribute.setFixed(false);
      frameAttribute.setDefaultValue("void");
      if (attributes == null) {
        attributes = new ArrayList<CIAttribute>();
      }
      attributes.add(frameAttribute);
    }
  }
  return attributes;
}
```

The elements that can be inserted in a specific context can be filtered using the *filterElements* method. The `SDFSchemaManagerFilter` uses this method to replace the `td` child element with the `th` element when `header` is the current context element.

```
public List<CIElement> filterElements(List<CIElement> elements,
    WhatElementsCanGoHereContext context) {
  // If the element from the current context is the 'header' element remove the
  // 'td' element from the list of content completion proposals and add the
  // 'th' element.
  if (context != null) {
    Stack<ContextElement> elementStack = context.getElementStack();
    if (elementStack != null) {
      ContextElement contextElement = context.getElementStack().peek();
      if ("header".equals(contextElement.getQName())) {
        if (elements != null) {
          for (Iterator<CIElement> iterator =
elements.iterator(); iterator.hasNext();) {
            CIElement element = iterator.next();
            // Remove the 'td' element
            if ("td".equals(element.getQName())) {
              elements.remove(element);
              break;
            }
          }
        } else {
          elements = new ArrayList<CIElement>();
        }
        // Insert the 'th' element in the list of content completion proposals
        CIElement thElement = new SDFElement();
        thElement.setName("th");
        elements.add(thElement);
      }
    }
  } else {
    // If the given context is null then the given list of content completion
    // elements contains global elements.
  }
  return elements;
}
```

The elements or attributes values can be filtered using the *filterElementValues* or *filterAttributeValues* methods.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a Link Target Element Finder

The link target reference finder represents the support for finding references from links that indicate specific elements inside an XML document. This support will only be available if a schema is associated with the document type.

If you do not define a custom link target reference finder, the *DefaultElementLocatorProvider* implementation will be used by default. The interface that should be implemented for a custom link target reference finder is *ro.sync.ecss.extensions.api.link.ElementLocatorProvider*. As an alternative, the *ro.sync.ecss.extensions.commons.DefaultElementLocatorProvider* implementation can also be extended.

The used *ElementLocatorProvider* will be queried for an *ElementLocator* when a link location must be determined (when a link is clicked). Then, to find the corresponding (linked) element, the obtained *ElementLocator* will be queried for each element from the document.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

DefaultElementLocatorProvider Implementation

The *DefaultElementLocatorProvider* implementation offers support for the most common types of links:

- Links based on ID attribute values.
- XPointer element() scheme.

The method *getElementLocator* determines what *ElementLocator* should be used. In the default implementation, it checks if the link is an XPointer element() scheme. Otherwise, it assumes it is an ID. A non-null *IDTypeVerifier* will always be provided if a schema is associated with the document type.

The `link` string argument is the *anchor* part of the of the URL that is composed from the value of the link property specified for the link element in the CSS.

```
public ElementLocator getElementLocator(IDTypeVerifier idVerifier,
              String link) {
  ElementLocator elementLocator = null;
  try {
    if(link.startsWith("element(")){
      // xpointer element() scheme
      elementLocator = new XPointerElementLocator(idVerifier, link);
    } else {
      // Locate link element by ID
      elementLocator = new IDElementLocator(idVerifier, link);
    }
  } catch (ElementLocatorException e) {
    logger.warn("Exception when create element locator for link: "
        + link + ". Cause: " + e, e);
  }
  return elementLocator;
}
```

XPointerElementLocator Implementation

XPointerElementLocator is an implementation of the abstract class *ro.sync.ecss.extensions.api.link.ElementLocator* for links that have one of the following XPointer element() scheme patterns:

element (*elementID*)

Locate the element with the specified ID.

element (*/1/2/3*)

A child sequence appearing alone identifies an element by means of stepwise navigation, which is directed by a sequence of integers separated by slashes (/). Each integer n locates the nth child element of the previously located element.

element (*elementID/3/4*)

A child sequence appearing after a *NCName* identifies an element by means of stepwise navigation, starting from the element located by the given name.

The constructor separates the ID/integers, which are delimited by slashes(/) into a sequence of identifiers (an XPointer path). It will also check that the link has one of the supported patterns of the XPointer element() scheme.

```
public XPointerElementLocator(IDTypeVerifier idVerifier, String link)
                    throws ElementLocatorException {
  super(link);
  this.idVerifier = idVerifier;

  link = link.substring("element(".length(), link.length() - 1);

  StringTokenizer stringTokenizer = new StringTokenizer(link, "/", false);
  xpointerPath = new String[stringTokenizer.countTokens()];
  int i = 0;
  while (stringTokenizer.hasMoreTokens()) {
    xpointerPath[i] = stringTokenizer.nextToken();
    boolean invalidFormat = false;

    // Empty xpointer component is not supported
    if(xpointerPath[i].length() == 0){
      invalidFormat = true;
    }
```

```
    if(i > 0){
      try {
        Integer.parseInt(xpointerPath[i]);
      } catch (NumberFormatException e) {
        invalidFormat = true;
      }
    }

    if(invalidFormat){
      throw new ElementLocatorException(
        "Only the element() scheme is supported when locating XPointer links."
        + "Supported formats: element(elementID), element(/1/2/3),
              element(elemID/2/3/4).");
    }
    i++;
  }

  if(Character.isDigit(xpointerPath[0].charAt(0))){
    // This is the case when xpointer have the following pattern /1/5/7
    xpointerPathDepth = xpointerPath.length;
  } else {
    // This is the case when xpointer starts with an element ID
    xpointerPathDepth = -1;
    startWithElementID  = true;
  }
}
```

The method *startElement* will be invoked at the beginning of every element in the XML document(even when the element is empty). The arguments it takes are

uri

The namespace URI, or the empty string if the element has no namespace URI or if namespace processing is disabled.

localName

Local name of the element.

qName

Qualified name of the element.

atts

Attributes attached to the element. If there are no attributes, this argument will be empty.

The method returns `true` if the processed element is found to be the one indicated by the link.

The *XPointerElementLocator* implementation of the *startElement* will update the depth of the current element and keep the index of the element in its parent. If the `xpointerPath` starts with an element ID then the current element ID is verified to match the specified ID. If this is the case the depth of the XPointer is updated taking into account the depth of the current element.

If the XPointer path depth is the same as the current element depth then the kept indices of the current element path are compared to the indices in the XPointer path. If all of them match then the element has been found.

```
public boolean startElement(String uri, String localName,
       String name, Attr[] atts) {
  boolean linkLocated = false;
  // Increase current element document depth
  startElementDepth ++;

  if (endElementDepth != startElementDepth) {
    // The current element is the first child of the parent
    currentElementIndexStack.push(new Integer(1));
  } else {
    // Another element in the parent element
    currentElementIndexStack.push(new Integer(lastIndexInParent + 1));
  }

  if (startWithElementID) {
    // This the case when xpointer path starts with an element ID.
    String xpointerElement = xpointerPath[0];
    for (int i = 0; i < atts.length; i++) {
      if(xpointerElement.equals(atts[i].getValue())){
        if(idVerifier.hasIDType(
            localName, uri, atts[i].getQName(), atts[i].getNamespace())){
          xpointerPathDepth = startElementDepth + xpointerPath.length - 1;
          break;
        }
      }
    }
  }
```

```
  if (xpointerPathDepth == startElementDepth){
    // check if xpointer path matches with the current element path
    linkLocated = true;
    try {
      int xpointerIdx = xpointerPath.length - 1;
      int stackIdx = currentElementIndexStack.size() - 1;
      int stopIdx = startWithElementID ? 1 : 0;
      while (xpointerIdx >= stopIdx && stackIdx >= 0) {
        int xpointerIndex = Integer.parseInt(xpointerPath[xpointerIdx]);
        int currentElementIndex =
          ((Integer)currentElementIndexStack.get(stackIdx)).intValue();
        if(xpointerIndex != currentElementIndex) {
          linkLocated = false;
          break;
        }

        xpointerIdx--;
        stackIdx--;
      }

    } catch (NumberFormatException e) {
      logger.warn(e,e);
    }
  }
  return linkLocated;
}
```

The method *endElement* will be invoked at the end of every element in the XML document (even when the element is empty).

The *XPointerElementLocator* implementation of the *endElement* updates the depth of the current element path and the index of the element in its parent.

```
public void endElement(String uri, String localName, String name) {
  endElementDepth = startElementDepth;
  startElementDepth --;
  lastIndexInParent = ((Integer)currentElementIndexStack.pop()).intValue();
}
```

IDElementLocator Implementation

The *IDElementLocator* is an implementation of the abstract class *ro.sync.ecss.extensions.api.link.ElementLocator* for links that use an **ID**.

The constructor only assigns field values and the method *endElement* is empty for this implementation.

The method *startElement* checks each of the element's attribute values and when one matches the link, it considers the element found if one of the following conditions is satisfied:

- The qualified name of the attribute is `xml:id`.
- The attribute type is ID.

The attribute type is checked with the help of the method *IDTypeVerifier.hasIDType*.

```
public boolean startElement(String uri, String localName,
        String name, Attr[] atts) {
  boolean elementFound = false;
  for (int i = 0; i < atts.length; i++) {
    if (link.equals(atts[i].getValue())) {
      if("xml:id".equals(atts[i].getQName())) {
        // xml:id attribute
        elementFound = true;
      } else {
        // check if attribute has ID type
        String attrLocalName =
          ExtensionUtil.getLocalName(atts[i].getQName());
        String attrUri = atts[i].getNamespace();
        if (idVerifier.hasIDType(localName, uri, attrLocalName, attrUri)) {
          elementFound = true;
        }
      }
    }
  }

  return elementFound;
}
```

Creating a Customized Link Target Reference Finder

If you need to create a custom link target reference finder you can do so by creating the class that will implement the *ro.sync.ecss.extensions.api.link.ElementLocatorProvider* interface. As an alternative, your class could extend *ro.sync.ecss.extensions.commons.DefaultElementLocatorProvider*, the default implementation.

Note: The complete source code of the *ro.sync.ecss.extensions.commons.DefaultElementLocatorProvider*, *ro.sync.ecss.extensions.commons.IDElementLocator* or *ro.sync.ecss.extensions.commons.XPointerElementLocator* can be found in the **oxygen-sample-framework** project.

Configuring a Custom Drag and Drop Listener

Sometimes it is useful to perform various operations when certain objects are dropped from outside sources in the editing area. You can choose from three interfaces to implement depending on whether you are using the Eclipse plugin or the standalone version of the application or if you want to add the handler for the **Text** or **Author** modes.

Interfaces for the Drag and Drop Listener

ro.sync.exml.editor.xmleditor.pageauthor.AuthorDnDListener

Receives callbacks from the standalone application for Drag And Drop in **Author** mode.

com.oxygenxml.editor.editors.author.AuthorDnDListener

Receives callbacks from the Eclipse plugin for Drag And Drop in **Author** mode.

com.oxygenxml.editor.editors.TextDnDListener

Receives callbacks from the Eclipse plugin for Drag And Drop in **Text** mode.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a References Resolver

This information is helpful if you need to provide a handler for resolving references and obtain the content they reference. For example, suppose the element that has references is **ref** and the attribute indicating the referenced resource is **location**. You need to implement a Java extension class for obtaining the referenced resources.

1. Create the class *simple.documentation.framework.ReferencesResolver*. This class must implement the *ro.sync.ecss.extensions.api.AuthorReferenceResolver* interface.

```
import ro.sync.ecss.extensions.api.AuthorReferenceResolver;
import ro.sync.ecss.extensions.api.AuthorAccess;
import ro.sync.ecss.extensions.api.node.AttrValue;
import ro.sync.ecss.extensions.api.node.AuthorElement;
import ro.sync.ecss.extensions.api.node.AuthorNode;

public class ReferencesResolver
      implements AuthorReferenceResolver {
```

2. The *hasReferences* method verifies if the handler considers the node to have references. It takes *AuthorNode* as an argument that represents the node that will be verified. The method will return `true` if the node is considered to have references. For our example, to be a reference, the node must be an element with the name *ref* and it must have an attribute named *location*.

```
public boolean hasReferences(AuthorNode node) {
  boolean hasReferences = false;
  if (node.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
    AuthorElement element = (AuthorElement) node;
    if ("ref".equals(element.getLocalName())) {
      AttrValue attrValue = element.getAttribute("location");
      hasReferences = attrValue != null;
    }
  }
  return hasReferences;
}
```

3. The method *getDisplayName* returns the display name of the node that contains the expanded referenced content. It takes *AuthorNode* as an argument that represents the node for which the display name is needed. The referenced content engine will ask this *AuthorReferenceResolver* implementation for the display name for each node that is considered a reference. For our example, the display name is the value of the *location* attribute from the *ref* element.

```
public String getDisplayName(AuthorNode node) {
  String displayName = "ref-fragment";
  if (node.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
    AuthorElement element = (AuthorElement) node;
    if ("ref".equals(element.getLocalName())) {
      AttrValue attrValue = element.getAttribute("location");
      if (attrValue != null) {
```

```
        displayName = attrValue.getValue();
      }
    }
  }
  return displayName;
}
```

4. The method *resolveReference* resolves the reference of the node and returns a *SAXSource* with the parser and its input source. It takes *AuthorNode* as an argument that represents the node for which the reference needs resolving, the `systemID` of the node, the *AuthorAccess* with access methods to the **Author** mode data model and a SAX *EntityResolver* that resolves resources that are already opened in another editor or resolve resources through the *XML Catalog*. In the implementation, you need to resolve the reference relative to the `systemID`, and create a parser and an input source over the resolved reference.

```
public SAXSource resolveReference(
    AuthorNode node,
    String systemID,
    AuthorAccess authorAccess,
    EntityResolver  entityResolver) {
  SAXSource saxSource = null;

  if (node.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
    AuthorElement element = (AuthorElement) node;
    if ("ref".equals(element.getLocalName())) {
      AttrValue attrValue = element.getAttribute("location");
      if (attrValue != null) {
        String attrStringVal = attrValue.getValue();
        try {
          URL absoluteUrl = new URL(new URL(systemID),
          authorAccess.getUtilAccess().correctURL(attrStringVal));

          InputSource inputSource = entityResolver.resolveEntity(null,
              absoluteUrl.toString());
          if(inputSource == null) {
            inputSource = new InputSource(absoluteUrl.toString());
          }

          XMLReader xmlReader = authorAccess.newNonValidatingXMLReader();
          xmlReader.setEntityResolver(entityResolver);

          saxSource = new SAXSource(xmlReader, inputSource);
        } catch (MalformedURLException e) {
          logger.error(e, e);
        } catch (SAXException e) {
          logger.error(e, e);
        } catch (IOException e) {
          logger.error(e, e);
        }
      }
    }
  }

  return saxSource;
}
```

5. The method *getReferenceUniqueID* should return a unique identifier for the node reference. The unique identifier is used to avoid resolving the references recursively. The method takes *AuthorNode* as an argument that represents the node with the reference. In our example, the unique identifier is the value of the *location* attribute from the *ref* element.

```
public String getReferenceUniqueID(AuthorNode node) {
  String id = null;
  if (node.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
    AuthorElement element = (AuthorElement) node;
    if ("ref".equals(element.getLocalName())) {
      AttrValue attrValue = element.getAttribute("location");
      if (attrValue != null) {
        id = attrValue.getValue();
      }
    }
  }
  return id;
}
```

6. The method *getReferenceSystemID*should return the `systemID` of the referenced content. It takes *AuthorNode* as an argument that represents the node with the reference and the *AuthorAccess* with access methods to the **Author** mode data model. In our example, the value of the *location* attribute is used from the *ref* element and resolved relatively to the XML base URL of the node.

```
public String getReferenceSystemID(AuthorNode node,
                                    AuthorAccess authorAccess) {
  String systemID = null;
  if (node.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
    AuthorElement element = (AuthorElement) node;
```

```
    if ("ref".equals(element.getLocalName())) {
      AttrValue attrValue = element.getAttribute("location");
      if (attrValue != null) {
        String attrStringVal = attrValue.getValue();
        try {
          URL absoluteUrl = new URL(node.getXMLBaseURL(),
              authorAccess.getUtilAccess().correctURL(attrStringVal));
          systemID = absoluteUrl.toString();
        } catch (MalformedURLException e) {
          logger.error(e, e);
        }
      }
    }
  }
  return systemID;
}
```

In the listing below, the XML document contains the **ref** element:

```
<ref location="referenced.xml">Reference</ref>
```

When no reference resolver is specified, the reference has the following layout:

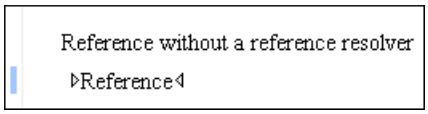


Figure 659: Reference with no specified reference resolver

When the above implementation is configured, the reference has the expected layout:

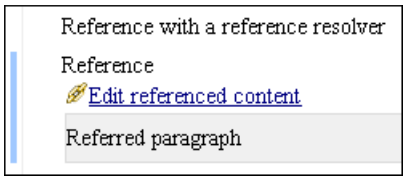


Figure 660: Reference with reference resolver

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring CSS Styles Filter

You can modify the CSS styles for each *ro.sync.ecss.extensions.api.node.AuthorNode* rendered in the **Author** mode using an implementation of *ro.sync.ecss.extensions.api.StylesFilter*. You can implement the various callbacks of the interface either by returning the default value given by Oxygen XML Editor plugin or by contributing to the value. The received styles *ro.sync.ecss.css.Styles* can be processed and values can be overwritten with your own. For example, you can override the KEY_BACKGROUND_COLOR style to return your own implementation of *ro.sync.exml.view.graphics.Color* or override the KEY_FONT style to return your own implementation of *ro.sync.exml.view.graphics.Font*.

For instance, in our simple document example the filter can change the value of the KEY_FONT property for the `table` element:

```
package simple.documentation.framework;

import ro.sync.ecss.css.Styles;
import ro.sync.ecss.extensions.api.StylesFilter;
import ro.sync.ecss.extensions.api.node.AuthorNode;
import ro.sync.exml.view.graphics.Font;

public class SDFStylesFilter implements StylesFilter {

     public Styles filter(Styles styles, AuthorNode authorNode) {
         if (AuthorNode.NODE_TYPE_ELEMENT == authorNode.getType()
           && "table".equals(authorNode.getName())) {
           styles.setProperty(Styles.KEY_FONT, new Font(null, Font.BOLD, 12));
         }
         return styles;
     }
}
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring Tables

There are standard CSS properties used to indicate what elements are tables, table rows and table cells. What CSS is missing is the possibility to indicate the cell spanning, row separators or the column widths. Oxygen XML Editor plugin offers support for adding extensions to solve these problems.

The table in this example is a simple one. The header must be formatted in a different way than the ordinary rows, so it will have a background color.

```
table{
    display:table;
    border:1px solid navy;
    margin:1em;
    max-width:1000px;
    min-width:150px;
}

table[width]{
  width:attr(width, length);
}

tr, header{
    display:table-row;
}

header{
    background-color: silver;
    color:inherit
}

td{
  display:table-cell;
  border:1px solid navy;
  padding:1em;
}
```

Since in the schema, the `td` tag has the attributes **row_span** and **column_span** that are not automatically recognized by Oxygen XML Editor plugin, a Java extension will be implemented that will provide information about the cell spanning. See the section Configuring a Table Cell Span Provider.

The column widths are specified by the attributes **width** of the elements `customcol` that are not automatically recognized by Oxygen XML Editor plugin. It is necessary to implement a Java extension that will provide information about the column widths. For more information, see Configuring a Table Column Width Provider.

The table from our example does not make use of the attributes `colsep` and `rowsep` (which are automatically recognized) but we still want the rows to be separated by horizontal lines. It is necessary to implement a Java extension that will provide information about the row and column separators. For more information, see Configuring a Table Cell Row and Column Separator Provider on page 1295.

Configuring a Table Column Width Provider

In a custom *framework*, the `table` element as well as the table columns can have specified widths. For these widths to be considered by **Author** mode we need to provide the means to determine them. As explained in Configuring Tables on page 1289, if you use the table element attribute **width** Oxygen XML Editor plugin can determine the table width automatically. In this example the table has `col` elements with **width** attributes that are not recognized by default. You will need to implement a Java extension class to determine the column widths.

1. Create the class *simple.documentation.framework.TableColumnWidthProvider*. This class must implement the *ro.sync.ecss.extensions.api.AuthorTableColumnWidthProvider* interface.

```
import ro.sync.ecss.extensions.api.AuthorAccess;
import ro.sync.ecss.extensions.api.AuthorOperationException;
import ro.sync.ecss.extensions.api.AuthorTableColumnWidthProvider;
import ro.sync.ecss.extensions.api.WidthRepresentation;
import ro.sync.ecss.extensions.api.node.AuthorElement;

public class TableColumnWidthProvider
      implements AuthorTableColumnWidthProvider {
```

2. Method *init* is taking as argument an *ro.sync.ecss.extensions.api.node.AuthorElement* that represents the XML `table` element. In our case the column widths are specified in `col` elements from the `table` element. In such cases you must collect the span information by analyzing the `table` element.

```
public void init(AuthorElement tableElement) {
 this.tableElement = tableElement;
 AuthorElement[] colChildren = tableElement.getElementsByLocalName("customcol");
    if (colChildren != null && colChildren.length > 0) {
 for (int i = 0; i < colChildren.length; i++) {
   AuthorElement colChild = colChildren[i];
     if (i == 0) {
  colsStartOffset = colChild.getStartOffset();
 }
     if (i == colChildren.length - 1) {
  colsEndOffset = colChild.getEndOffset();
 }
     // Determine the 'width' for this col.
     AttrValue colWidthAttribute = colChild.getAttribute("width");
     String colWidth = null;
     if (colWidthAttribute != null) {
       colWidth = colWidthAttribute.getValue();
           // Add WidthRepresentation objects for the columns this 'customcol'
     //  specification spans over.
  colWidthSpecs.add(new WidthRepresentation(colWidth, true));
 }
     }
   }
}
```

3. The method *isTableAcceptingWidth* should check if the table cells are `td`.

```
public boolean isTableAcceptingWidth(String tableCellsTagName) {
  return "td".equals(tableCellsTagName);
}
```

4. The method *isTableAndColumnsResizable* should check if the table cells are `td`. This method determines if the table and its columns can be resized by dragging the edge of a column.

```
public boolean isTableAndColumnsResizable(String tableCellsTagName) {
  return "td".equals(tableCellsTagName);
}
```

5. Methods *getTableWidth* and *getCellWidth* are used to determine the table and column width. The table layout engine will ask this *ro.sync.ecss.extensions.api.AuthorTableColumnWidthProvider* implementation what is the table width for each table element and the cell width for each cell element from the table that was marked as cell in the CSS using the property `display:table-cell`. The implementation is simple and just parses the value of the **width** attribute. The methods must return `null` for the tables / cells that do not have a specified width.

```
 public WidthRepresentation getTableWidth(String tableCellsTagName) {
  WidthRepresentation toReturn = null;
  if (tableElement != null && "td".equals(tableCellsTagName)) {
   AttrValue widthAttr = tableElement.getAttribute("width");
   if (widthAttr != null) {
    String width = widthAttr.getValue();
    if (width != null) {
     toReturn = new WidthRepresentation(width, true);
    }
   }
  }
  return toReturn;
 }
```

```
        public List<WidthRepresentation>
getCellWidth(AuthorElement cellElement, int colNumberStart,
   int colSpan) {
  List<WidthRepresentation> toReturn = null;
  int size = colWidthSpecs.size();
  if (size >= colNumberStart && size >= colNumberStart + colSpan) {
   toReturn = new ArrayList<WidthRepresentation>(colSpan);
   for (int i = colNumberStart; i < colNumberStart + colSpan; i ++) {
    // Add the column widths
    toReturn.add(colWidthSpecs.get(i));
   }
  }
  return toReturn;
 }
```

6. Methods *commitTableWidthModification* and *commitColumnWidthModifications* are used to commit changes made to the width of the table or its columns when using the mouse drag gestures.

```
 public void commitTableWidthModification
```

```
(AuthorDocumentController authorDocumentController,
 int newTableWidth, String tableCellsTagName) throws AuthorOperationException {
 if ("td".equals(tableCellsTagName)) {
  if (newTableWidth > 0) {
   if (tableElement != null) {
    String newWidth = String.valueOf(newTableWidth);

    authorDocumentController.setAttribute(
      "width",
      new AttrValue(newWidth),
      tableElement);
   } else {
 throw new AuthorOperationException("Cannot find the table element.");
    }
   }
  }
 }
```

```
public void commitColumnWidthModifications
 (AuthorDocumentController authorDocumentController,
   WidthRepresentation[] colWidths, String tableCellsTagName)
 throws AuthorOperationException {
   if ("td".equals(tableCellsTagName)) {
     if (colWidths != null && tableElement != null) {
 if (colsStartOffset >= 0 && colsEndOffset >= 0
&& colsStartOffset < colsEndOffset) {
  authorDocumentController.delete(colsStartOffset,
    colsEndOffset);
  }
  String xmlFragment = createXMLFragment(colWidths);
   int offset = -1;
  AuthorElement[] header = tableElement.getElementsByLocalName("header");
   if (header != null && header.length > 0) {
    // Insert the cols elements before the 'header' element
    offset = header[0].getStartOffset();
   }
   if (offset == -1) {
  throw new AuthorOperationException("No valid offset to insert column width");
    }
    authorDocumentController.insertXMLFragment(xmlFragment, offset);
   }
  }
 }

 private String createXMLFragment(WidthRepresentation[] widthRepresentations) {
  StringBuffer fragment = new StringBuffer();
  String ns = tableElement.getNamespace();
  for (int i = 0; i < widthRepresentations.length; i++) {
   WidthRepresentation width = widthRepresentations[i];
   fragment.append("<customcol");
   String strRepresentation = width.getWidthRepresentation();
   if (strRepresentation != null) {
    fragment.append(" width=\"" + width.getWidthRepresentation() + "\"");
   }
   if (ns != null && ns.length() > 0) {
    fragment.append(" xmlns=\"" + ns + "\"");
   }
   fragment.append("/>");
  }
  return fragment.toString();
 }
```

7. The following three methods are used to determine what type of column width specifications the table column width provider support. In our case all types of specifications are allowed:

```
 public boolean isAcceptingFixedColumnWidths(String tableCellsTagName) {
  return true;
 }

 public boolean isAcceptingPercentageColumnWidths(String tableCellsTagName) {
  return true;
 }

 public boolean isAcceptingProportionalColumnWidths(String tableCellsTagName) {
  return true;
 }
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

In the listing below, the XML document contains the table element:

```
<table width="300">
    <customcol width="50.0px"/>
    <customcol width="1*"/>
    <customcol width="2*"/>
```

```
    <customcol width="20%"/>
    <header>
        <td>C1</td>
        <td>C2</td>
        <td>C3</td>
        <td>C4</td>
    </header>
    <tr>
        <td>cs=1, rs=1</td>
        <td>cs=1, rs=1</td>
        <td row_span="2">cs=1, rs=2</td>
        <td row_span="3">cs=1, rs=3</td>
    </tr>
    <tr>
        <td>cs=1, rs=1</td>
        <td>cs=1, rs=1</td>
    </tr>
    <tr>
        <td column_span="3">cs=3, rs=1</td>
    </tr>
</table>
```

When no table column width provider is specified, the table has the following layout:

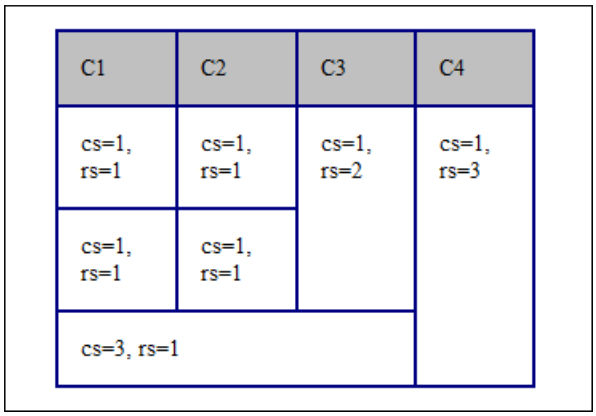


Figure 661: Table layout when no column width provider is specified

When the above implementation is configured, the table has the correct layout:

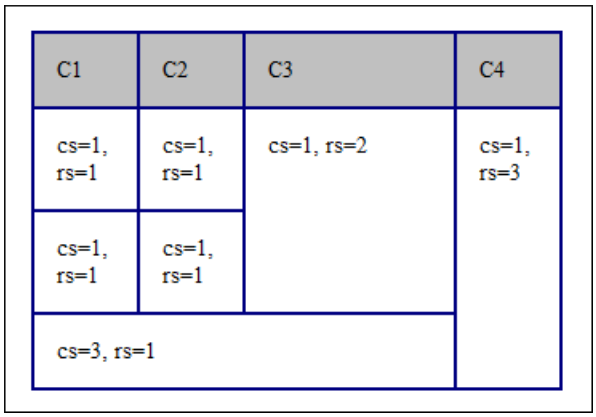


Figure 662: Columns with custom widths

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a Table Cell Span Provider

In a custom *framework*, the `table` element can have cells that span over multiple columns and rows. As explained in Configuring Tables on page 1289, you need to indicate Oxygen XML Editor plugin a method to determine the cell spanning. If you use the cell element attributes `rowspan` and `colspan` or `rows` and `cols`, Oxygen XML Editor plugin can determine the cell spanning automatically. In our example the `td` element uses the attributes `row_span` and `column_span` that are not recognized by default. You will need to implement a Java extension class for defining the cell spanning.

1. Create the class *simple.documentation.framework.TableCellSpanProvider*. This class must implement the *ro.sync.ecss.extensions.api.AuthorTableCellSpanProvider* interface.

```
import ro.sync.ecss.extensions.api.AuthorTableCellSpanProvider;
import ro.sync.ecss.extensions.api.node.AttrValue;
import ro.sync.ecss.extensions.api.node.AuthorElement;

public class TableCellSpanProvider
      implements AuthorTableCellSpanProvider {
```

2. The *init* method is taking as argument the *ro.sync.ecss.extensions.api.node.AuthorElement* that represents the XML `table` element. In our case the cell span is specified for each of the cells so you leave this method empty. However, there are cases (such as the CALS table model) when the cell spanning is specified in the `table` element. In such cases, you must collect the span information by analyzing the `table` element.

```
public void init(AuthorElement table) {
}
```

3. The *getColSpan* method is taking as argument the table cell. The table layout engine will ask this *AuthorTableSpanSupport* implementation what is the column span and the row span for each XML element from the table that was marked as cell in the CSS using the property `display:table-cell`. The implementation is simple and just parses the value of **column_span** attribute. The method must return `null` for all the cells that do not change the span specification.

```
public Integer getColSpan(AuthorElement cell) {
  Integer colSpan = null;

  AttrValue attrValue = cell.getAttribute("column_span");
  if(attrValue != null) {
    // The attribute was found.
    String cs = attrValue.getValue();
    if(cs != null) {
      try {
        colSpan = new Integer(cs);
      } catch (NumberFormatException ex) {
        // The attribute value was not a number.
      }
    }
  }
  return colSpan;
}
```

4. The row span is determined in a similar manner:

```
public Integer getRowSpan(AuthorElement cell) {
  Integer rowSpan = null;

  AttrValue attrValue = cell.getAttribute("row_span");
  if(attrValue != null) {
    // The attribute was found.
    String rs = attrValue.getValue();
    if(rs != null) {
      try {
        rowSpan = new Integer(rs);
      } catch (NumberFormatException ex) {
        // The attribute value was not a number.
      }
    }
  }
  return rowSpan;
}
```

5. The method *hasColumnSpecifications* always returns `true` considering column specifications always available.

```
public boolean hasColumnSpecifications(AuthorElement tableElement) {
  return true;
}
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

6. In the listing below, the XML document contains the table element:

```
<table>
    <header>
        <td>C1</td>
        <td>C2</td>
        <td>C3</td>
```

```
            <td>C4</td>
        </header>
        <tr>
            <td>cs=1, rs=1</td>
            <td column_span="2" row_span="2">cs=2, rs=2</td>
            <td row_span="3">cs=1, rs=3</td>
        </tr>
        <tr>
            <td>cs=1, rs=1</td>
        </tr>
        <tr>
            <td column_span="3">cs=3, rs=1</td>
        </tr>
    </table>
```

When no table cell span provider is specified, the table has the following layout:

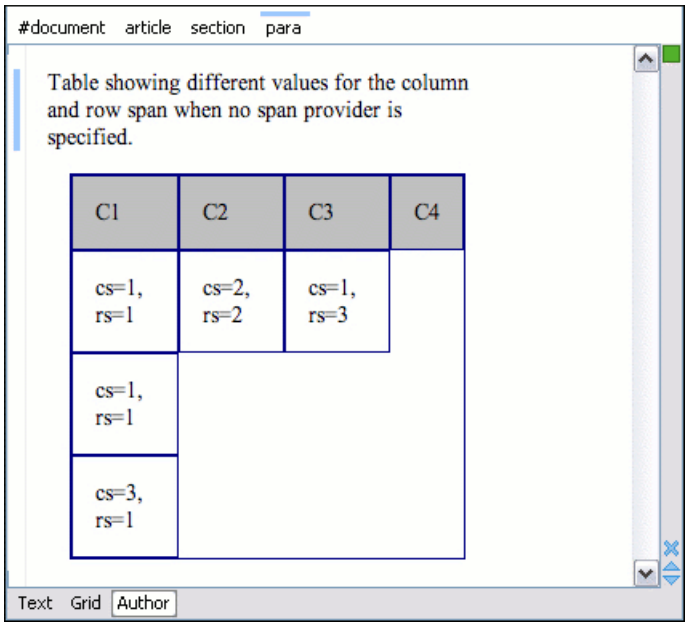


Figure 663: Table layout when no cell span provider is specified

When the above implementation is configured, the table has the correct layout:

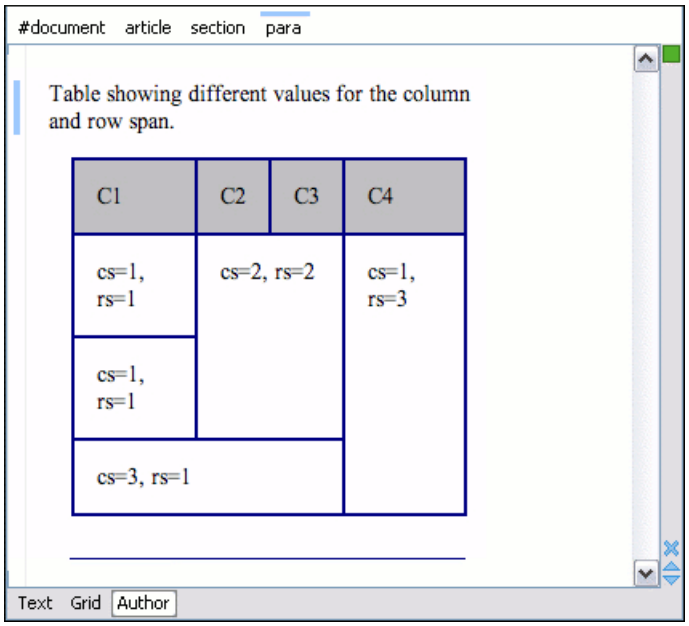


Figure 664: Cells spanning multiple rows and columns.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a Table Cell Row and Column Separator Provider

In a custom *framework*, the `table` element has separators between rows. As explained in Configuring Tables on page 1289, you need to indicate a method to determine the way rows and columns are separated. If you use the `rowsep` and `colsep` cell element attributes, or your table is conforming to the CALS table model, Oxygen XML Editor plugin can determine the cell separators. Even if there are no attributes that define the separators, you can still force a separator between rows by implementing a Java extension.

1. Create the class *simple.documentation.framework.TableCellSepProvider*. This class must implement the *ro.sync.ecss.extensions.api.AuthorTableCellSepProvider* interface.

```
import ro.sync.ecss.extensions.api.AuthorTableCellSepProvider;
import ro.sync.ecss.extensions.api.node.AuthorElement;

public class TableCellSepProvider implements AuthorTableCellSepProvider{
```

2. The *init* method is taking as argument the *ro.sync.ecss.extensions.api.node.AuthorElement* that represents the XML `table` element. In our case the separator information is implicit, it does not depend on the current table, so you leave this method empty. However, there are cases (such as the CALS table model) when the cell separators are specified in the `table` element. In such cases, you should initialize your provider based on the given argument.

```
public void init(AuthorElement table) {
}
```

3. The *getColSep* method is taking as argument the table cell. The table layout engine will ask this *AuthorTableCellSepProvider* implementation if there is a column separator for each XML element from the table that was marked as cell in the CSS using the property `display:table-cell`. In our case we choose to return **false** since we do not need column separators.

```
  /**
   * @return false - No column separator at the right of the cell.
   */
  @Override
  public boolean getColSep(AuthorElement cellElement, int columnIndex) {
    return false;
  }
```

4. The row separators are determined in a similar manner. This time the method returns **true**, forcing a separator between the rows.

```
  /**
   * @return true - A row separator below each cell.
   */
  @Override
  public boolean getRowSep(AuthorElement cellElement, int columnIndex) {
    return true;
  }
```

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

5. In the example below, the XML document contains the table element:

```
<table>
     <header>
       <td>H1</td>
       <td>H2</td>
       <td>H3</td>
       <td>H4</td>
     </header>
     <tr>
       <td>C11</td>
       <td>C12</td>
       <td>C13</td>
       <td>C14</td>
     </tr>
     <tr>
       <td>C21</td>
       <td>C22</td>
       <td>C23</td>
       <td>C24</td>
     </tr>
     <tr>
       <td>C31</td>
       <td>C32</td>
       <td>C33</td>
```

```
        <td>C34</td>
      </tr>
    </table>
```

When the borders for the `td` element are removed from the CSS, the row separators become visible:

H1	H2	H3	H4
C11	C12	C13	C14
C21	C22	C23	C24
C31	C32	C33	C34

Figure 665: Row separators provided by the Java implementation.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring a Unique Attributes Recognizer

The *ro.sync.ecss.extensions.api.UniqueAttributesRecognizer* interface can be implemented if you want to provide for your *framework* the following features:

- **Automatic ID generation** - You can automatically generate unique IDs for newly inserted elements. Implementations are already available for the DITA and DocBook *frameworks*. The following methods can be implemented to accomplish this: *assignUniqueIDs(int startOffset, int endOffset)*, *isAutoIDGenerationActive()*
- **Avoiding copying unique attributes when "Split" is called inside an element** - You can split the current *block element* by pressing the "Enter" key and then choosing "Split". This is a very useful way to create new paragraphs, for example. All attributes are by default copied on the new element but if those attributes are IDs you sometimes want to avoid creating validation errors in the editor. Implementing the following method, you can decide whether or not an attribute should be copied during the split: *boolean copyAttributeOnSplit(String attrQName, AuthorElement element)*

  Tip: The *ro.sync.ecss.extensions.commons.id.DefaultUniqueAttributesRecognizer* class is an implementation of the interface that can be extended by your customization to provide easy assignation of IDs in your *framework*. You can also check out the DITA and DocBook implementations of *ro.sync.ecss.extensions.api.UniqueAttributesRecognizer* to see how they were implemented and connected to the extensions bundle.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Configuring an XML Node Renderer Customizer

You can use this API extension to customize the way an XML node is rendered in the **Outline** view in **Author** mode, breadcrumb navigation bar in **Author** mode, **Outline** view in **Text** mode, *Content Completion Assistant* window, or **DITA Maps Manager** view.

Note: Oxygen XML Editor plugin uses *XMLNodeRendererCustomizer* implementations for the following *frameworks*: DITA, DITA Map, DocBook 4, DocBook 5, TEI, XHTML, XSLT, and XML Schema.

There are two methods to provide an implementation of *ro.sync.exml.workspace.api.node.customizer.XMLNodeRendererCustomizer*:

- As a part of a bundle, returning it from the *createXMLNodeCustomizer()* method of the *ExtensionsBundle* associated with your document type in the **Document type** configuration dialog box (**Extensions bundle** field in the **Extensions** tab).
- As an individual extension, associated with your document type in the **Document type** configuration dialog box (**XML node renderer customizer** field in the **Individual extensions** section of the **Extensions** tab).

Support for Retina/HiDPI Displays

To support Retina or HiDPI displays, the icons provided by the *XMLNodeRendererCustomizer* should be backed up by a copy of larger size using the proper Retina/HiDPI naming convention.

For example, for the `title` element, if the *XMLNodeRendererCustomizer* returns the path `${framework}/images/myImg.png`, then to support Retina images with a scaling factor of 2, an extra file (`myImg@2x.png`)should be added to the same images directory (`${framework}/images/myImg@2x.png`). If the higher resolution icon (the *@2x* file) does not exist, the *normal* icon is scaled and used instead.

For more information about using Retina/HiDPI images, refer to the Using Retina/HiDPI Images in Author Mode section.

Note: The complete source code for *framework* customization examples can be found in the **oxygen-sample-framework** module of the Oxygen SDK , available as a Maven archetype on the Oxygen XML Editor plugin website.

Related Information:

Customizing the Rendering of Elements on page 1307

Adding Custom Persistent Highlights

The *Author API* includes a class that allows you to create or remove custom persistent highlights, set new properties for the highlights, and customize their appearance. An example of a possible use case would be if you want to implement your own way of editing review comments. The custom persistent highlights get serialized in the XML document as processing instructions, with the following format:

```
<?oxy_custom_start prop1="val1"....?> xml content <?oxy_custom_end?>
```

This functionality is available through the *AuthorPersistentHighlighter* class that is accessible through the *AuthorEditorAccess#getPersistentHighlighter()* method.

For more information, see the JavaDoc details for this class at https://www.oxygenxml.com/InstData/Editor/SDK/javadoc/ro/sync/ecss/extensions/api/highlights/AuthorPersistentHighlighter.html.

Customizing the Main CSS of a Framework

The easiest way to customize the *main* CSS stylesheet of a *framework* is to create a new stylesheet, save it as an *alternate* CSS file that will be applied as an additional layer to the *main* CSS, and then select it from the **Styles** drop-down menu in **Author** mode.

For example, suppose that you want to customize the *main* CSS for DITA documents. To do this, follow these steps:

1. First, create a new CSS stylesheet and save it in the *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/css/edit` folder (where the default *main* stylesheet named `style-basic.css` is located).
2. Edit the DITA *framework* and go to the **CSS** subtab:
   a) Open the **Preferences** dialog box and go to **Document Type Association**.
   b) Select the DITA document type and press the **Edit** button.

   Tip: If you do not have write permissions to modify the document type, use the **Extend** button to create an extension of the *framework*.

   a) Go to the **CSS** subtab of the **Author** tab.

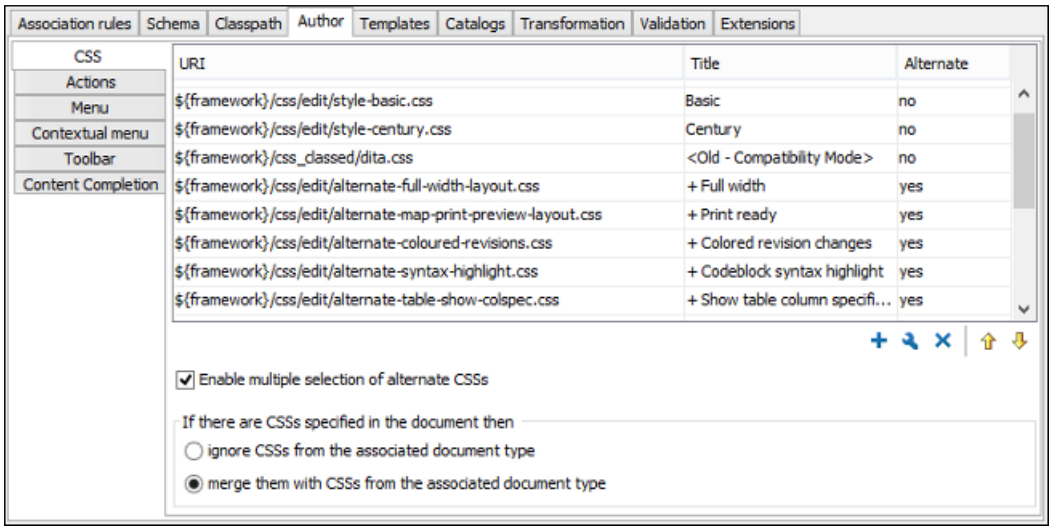


Figure 666: CSS Subtab of the Document Type Association Author Tab

3. Add the new stylesheet as an *alternate* CSS stylesheet:
   a) Click the **Add** button to open a dialog box that allows you to specify the URI and Title for your newly created stylesheet.
   b) Select the **Alternate** option to define it as an *alternate* stylesheet that will applied as an additional layer to the *main* CSS.

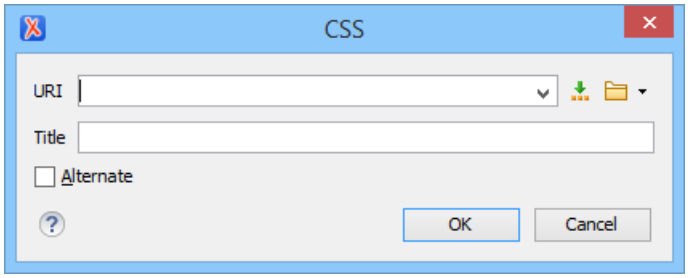


Figure 667: Add CSS Stylesheet Dialog Box

4. Press **OK** in all the dialog boxes to validate the changes.
5. Select your newly created CSS stylesheet from the **Styles** drop-down menu on the toolbar in **Author** mode. You can now edit DITA documents based on the new CSS stylesheet. You can also edit the new CSS stylesheet itself and see its effects on rendering DITA documents in the **Author** mode by using the **Refresh** action that is available on the **Author** toolbar and in the **DITA** menu.

Related Information:

Configuring and Managing Multiple CSS Styles on page 1315

Sharing a Framework (Document Type)

Oxygen XML Editor plugin allows you to share customizations of a specific XML document type by creating your own *framework* in the **Document Type Association** preferences page.

A *framework* (document type) can be shared with other authors by using the following method:

Save it in a Custom Folder

To share your customized *framework* with other members of your team, you can save it to a separate folder inside the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory by following these steps:

Important: For this approach to work, the application must be installed in a folder with full write access.

1. Go to *[OXYGEN_INSTALL_DIR]*`/frameworks` and create a directory for your new *framework* (for example, `custom_framework`). This directory will contain the resources for your customized *framework*. See the **DocBook** *framework* structure from *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook` as an example.
2. Create your custom document type (*framework*) and specify the `custom_framework` directory for the **External** storage option.
3. Configure the custom document type according to your needs. Take special care to make all file references relative to the *[OXYGEN_INSTALL_DIR]*`/frameworks` directory by using the **${frameworks}** editor variable. See the Author Mode Customization section for more details on creating and configuring a new document type (*framework*).
4. Add any additional resources (CSS files, new document templates, schemas used for validation, catalogs, etc.) to the directory you created in step 1.
5. After completing your customizations in the **Document Type Association** preferences page, you should have a new configuration file saved in: *[OXYGEN_INSTALL_DIR]*`/frameworks/custom_framework/custom.framework`.
6. To share the new *framework* directory with other users, have them copy it to their *[OXYGEN_INSTALL_DIR]*`/frameworks` directory. The new *framework* will be available in the list of document types when Oxygen XML Editor plugin starts.

   Note: If you have a `frameworks` directory stored on your local drive, you can also go to the **Document Type Association** > **Locations** preferences page and add your `frameworks` directory in the **Additional frameworks directories** list.

Related Information:

Extending and Sharing a Framework (Document Type) on page 1299

Extending and Sharing a Framework (Document Type)

You can extend a predefined, built-in *framework* (document type), such as DITA or DocBook, using the **Document Type Association** preferences page, make modifications to it, and then share the extension with your team.

Extending a Framework

For the purpose of providing specific instructions for sharing an extended *framework*, suppose that you want to share an extension of the **DITA** *framework* in which you have removed certain elements from the content completion list. The following steps describe how you can create an extended *framework* that can be shared with others:

1. In a location where you have full write access, create a folder structure similar to this: `custom_frameworks/dita-extension`.
2. Open the **Preferences** dialog box and go to **Document Type Association** > **Locations**. In this preferences page, add the path to your `custom_frameworks` folder in the **Additional frameworks directories** list.
3. Go to the **Document Type Association** preferences page and select the **DITA** *framework* configuration and use the **Extend** button to create an extension for it.
4. Give the extension an appropriate name (for example, `DITA - Custom`), select **External** for the **Storage** option, and specify an appropriate path (for example, `path/to/.../custom_frameworks/dita-extension/dita-extension.framework`).
5. Make your changes to the extension. For example, you could go to the **Content Completion** subtab of the **Author** tab and in the **Filter - Remove content completion items** list, add elements that you do not want to be presented to the end users.
6. Click **OK** to close the dialog box and then **OK** or **Apply** to save the changes to the **Document Type Association** preferences page.

   Results: After you perform these steps you will have a fully functional *framework* in the `dita-extension` folder and it can be shared with others.

Sharing the Extended Framework

There are several ways that you can share the extended *framework* with others:

- Copy it to their *[OXYGEN_INSTALL_DIR]*`/frameworks` directory.

- Create a `custom_frameworks` folder (anywhere on disk) and copy the extended *framework* into it. Then add the path to your `custom_frameworks` folder in the **Additional frameworks directories** list in the **Document Type Association** > **Locations** preferences page.

After your team members install the *framework* they can check the list of document types in the **Document Type Association** preferences page to see if the *framework* is present and if it appears before the bundled **DITA** *framework* (meaning that it has higher priority).

Related Information:

Sharing a Framework (Document Type) on page 1298

Customizing the Content Completion Assistant

Oxygen XML Editor plugin gathers information from the associated schemas (DTDs, XML Schema, RelaxNG) to determine the proposals that appear in the *Content Completion Assistant*. Oxygen XML Editor plugin also includes support that allows you to customize the *Content Completion Assistant* to suit your specific needs.

There are two ways to customize the *Content Completion Assistant* in Oxygen XML Editor plugin:

- You can add, modify, or remove actions that are proposed for each particular document type (*framework*) by using the **Content Completion** subtab in the **Document Type Association** configuration dialog box. To access this subtab, open the **Preferences** dialog box , go to **Document Type Association**, use the **New**, **Edit**, **Duplicate**, or **Extend** button, click on the **Author** tab, and then the **Content Completion** subtab.
- You can use a `cc_config.xml` configuration file that is specific to each document type (*framework*) to configure the values that are proposed in certain contexts, to customize the attributes or elements that are proposed, or to customize how certain aspects of the proposals are rendered in the interface. The rest of the topics in this section explain how you can use this configuration file to customize the content completion.

Configuring the Proposals for Elements and Attributes

There are many cases where elements have a relaxed content model and can accept a large number of child elements. For example, the DITA list item element (`li`) accepts more than 60 child elements. Oxygen XML Editor plugin includes support to allow the content architect to put some constraints on the possible elements or attributes, or to impose some best practices in the way content is edited.

For an example of a specific use-case, suppose that you want to restrict DITA list item elements (`li`) to only accept paragraph elements (p). In this case, the *Content Completion Assistant* should not offer any element other than a paragraph (p) when a list item (`li`) is inserted into a document. It would also be helpful if the required child element (p) was automatically inserted whenever a list item (`li`) is inserted.

One method of changing the content model is to alter the element definition in the associated schema (XML Schema, DTD, RelaxNG), but this may be quite complicated in some cases. Fortunately, Oxygen XML Editor plugin offers a simple, alternative method of using a configuration file to customize the content completion proposals for each element.

Setting up the Content Completion Configuration File

To customize the configuration file for the *Content Completion Assistant*, follow these steps:

1. Create a new `resources` folder (if it does not already exist) in the `frameworks` directory for the particular document type (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources`).
2. Open the **Preferences** dialog box and go to **Document Type Association**. Select the particular document type, click the **Edit** button, and in the **Classpath** tab add a link to that `resources` folder (if it does not already exist).
3. Create a new configuration file or edit an existing one.
   a. To easily create a new configuration file, you can use the *Content Completion Configuration* document template that is included in Oxygen XML Editor plugin (**File** > **New** > **New from Templates** > **Framework templates** > **Oxygen Extensions** > **Content Completion Configuration**). The document template includes details about how each element and attribute is used in the configuration file.
   b. If a configuration file (`cc_config.xml`) already exists for the particular document type (in the `resources` folder), you can modify this existing file.
4. Make the appropriate changes to your custom configuration file.

5. Save the file in the `resources` folder for the particular document type, using the fixed name: `cc_config.xml` (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources/cc_config.xml`).
6. Restart the application and open an XML document. In the *Content Completion Assistant* you should see your customizations.

   Tip: In some cases, you can simply use the **Refresh (F5)** action to test your customizations, without having to restart the application.

Configuring Elements or Attributes that are Proposed for Each Element

For the purposes of customizing the elements or attributes that are proposed for each individual element, the configuration file (`cc_config.xml`) uses `elementProposals` elements. This element allows you to customize or filter the child elements and attributes for an element.

Warning: Note that you can only choose elements or attributes that are already allowed by the schema in a particular context. For example, you cannot specify an element that is not allowed by the schema as a child of a particular node.

Elements:

To control the **elements** that are proposed for an element, you can use the following attributes for the `elementProposals` element:

- `path` - A path within the document that matches the element that will have its content completion proposals changed. For example, `"title"` matches all the `title` elements in the document, while `"chapter/title"` matches only the `title` elements that are direct children of the `chapter` element. You can use simplified forms of XPath in this attribute.

  The XPath expressions can accept multiple attribute conditions and inside each condition you can use *AND/OR* boolean operators and parentheses to override the priority.

  You can use one or more of the following attribute conditions (default attribute values are not taken into account):

  - *element[@attr]* - Matches all instances of the specified element that include the specified attribute.
  - *element[not(@attr)]* - Matches all instances of the specified element that do not include the specified attribute.
  - *element[@attr = "value"]* - Matches all instances of the specified element that include the specified attribute with the given value.
  - *element[@attr != "value"]* - Matches all instances of the specified element that include the specified attribute and its value is different than the one given.

  Example: The following are examples of how you could use multiple boolean operators and parentheses inside an attribute condition:

  ```
  *[@a and @b or @c and @d]
  *[@a and (@b or @c) and @d]
  ```

  The following are just examples of how simplified XPath expressions might look like:

  - `elementName`
  - `//elementName`
  - `/elementName1/elementName2/elementName3`
  - `//xs:localName`

    Note: Using a namespace prefix requires that you declare it in the configuration file. For example: `<elementProposals xmlns:db5="http://docbook.org/ns/docbook" path="db5:listitem" insertElements="db5:para" />`
  - `//xs:documentation[@lang="en"]`

  Note: If the `path` attribute is missing, the customization will apply to the proposals for all elements. You can intentionally omit this attribute and use *possibleElements* or *rejectElements* to specify or restrict particular elements for a *framework*.

For example, suppose that in your DITA documents, you want to restrict your users from using `image` and `fig` elements because you do not want images to be included in your output. The configuration file should look like this:

```
<elementProposals rejectElements="image fig" />
```

Since the `path` attribute is missing, the specified element will be filtered out from the proposals for the entire *framework*.

- `insertElements` - A space-separated sequence of child element names. Each time the element specified in the `path` attribute is inserted into the document, these child elements will also be inserted in the order that they are listed. For example, `insertElements="b i"` will insert exactly one b element, followed by an `i` element. An empty value (`""`) means that no child elements should be inserted.

  Note: If this attribute is missing, the default required child elements will be inserted, as specified in the associated schema for the document.
- `possibleElements` - A space-separated list of element names that will be shown in the content completion list when invoked inside an element that is specified in the `path` attribute. For example, `"b i codeph ph"` means that the *Content Completion Assistant* will contain these four elements when invoked on the element specified in the `path` attribute. The following other possible values are also supported:
  - ***NONE*** - There will be no proposals in the content completion list.
  - ***ALL*** - All the possible elements specified in the associated schema will be presented in the content completion list. This is also the default behavior if this attribute is missing.
  - ***INSERTED*** - The proposals will be the same list of elements that are defined in the `insertElements` attribute.

  When using this attribute to specify multiple elements, only use one entry with the element names separated by a space:

  ```
  <elementProposals possibleElements="b i codeph ph" />
  ```
- `rejectElements` - A space-separated list of element names that will be filtered out from the list of proposals that are presented in the content completion list. Each time the element specified in the `path` attribute is inserted into the document, the list of proposals in the *Content Completion Assistant* will include the entries that are defined in the associated schema, minus the elements specified in this attribute.

  This setting also influences copy/paste and insertion behaviors. For example, if you reject the insertions of images in paragraphs and you try to paste an image inside a paragraph, by default the application will take your choice into account and try to insert the image in a place where it is allowed.

  When using this attribute to specify multiple elements, only use one entry with the element names separated by a space:

  ```
  <elementProposals rejectElements="image fig imagemap foreign" />
  ```

Attributes:

To control the **attributes** that are proposed for an element, you can use the following attributes for the `elementProposals` element:

- `path` - A path within the document that matches the element that will have its attribute proposals changed. For example, `"title"` matches all the `title` elements in the document, while `"chapter/title"` matches only the `title` elements that are direct children of the `chapter` element. You can use simplified forms of XPath in this attribute. For examples of such forms of XPath expressions, see the note in XML Preferences.

  Note: If this attribute is missing, the customization will apply to the proposals for all elements. You can intentionally omit this attribute and use *possibleAttributes* or *rejectAttributes* to specify or restrict attributes for an entire *framework*.

  For example, suppose that you only want to allow a limited set of attributes in a customized *framework*. The configuration file should look like this:

  ```
  <elementProposals possibleAttributes="
                id domains href scope format type conref
          props keyref class"/>
  ```

Since the `path` attribute is missing, this applies to the entire *framework* and only the specified attributes will be proposed.

- `insertAttributes` - A space-separated sequence of attribute names that will be inserted along with the element.

```
<elementProposals path="ol/li" insertAttributes="product platform"/>
```

- `insertAttribute` - This is similar to the preceding attribute, but this one also allows you to specify a value for the attribute that will be inserted. This attribute should be used like this:

```
<elementProposals path="ol/li">
    <insertAttribute name="platform" value="test"/>
</elementProposals>
```

- `possibleAttributes` - A space-separated list of attribute names that will be shown in the content completion list when invoked inside an element that is specified in the `path` attribute.

  When using this attribute to specify multiple attributes, only use one entry with the attribute names separated by a space:

```
<elementProposals possibleAttributes="scope format type" />
```

- `rejectAttributes` - A space-separated list of attribute names that will be filtered out from the list of proposals that are presented in the content completion list. Each time the element specified in the `path` attribute is inserted into the document, the list of proposals in the *Content Completion Assistant* will include the entries that are defined in the associated schema, minus the attributes specified in this attribute.

  When using this attribute to specify multiple attributes, only use one entry with the attribute names separated by a space:

```
<elementProposals rejectAttributes="importance platform product" />
```

Other Important Notes About the Configuration File

Important:

- By default, the element names that do not have a namespace prefix are considered from *no-namespace*. Consider declaring the namespace mapping on the root of the configuration file and prefixing the element names from the `elementPath` and `model` attributes.
- This configuration file only affects the content completion assistance, not validation.
- To test the effects of your changes, you should restart the application, although in some cases, you can simply use the **Refresh (F5)** action to test your customizations.
- When an XML element from the document is matched against a list of configured `elementProposals`, the first one in sequence takes precedence. Therefore, make sure you place the more specific `elementProposals` (those with a longer path) first in your configuration file.
- Regular expression patterns can be used in the following attributes: `possibleElements`, `rejectElements`, `possibleAttributes`, and `rejectAttributes`. For example, `code*`, `*block`, `con*ref`, `_*`.
- Only simple recursion cases are detected and avoided by the editor, and logged to the console. Therefore, if complex `elementProposals` patterns are defined, you should avoid *infinite recursions*.

Examples: Configuring the Element Proposals

- **Example 1: Automatically Insert Elements**

  Suppose that you want to automatically insert a paragraph element (p) whenever a DITA ordered list item element (`ol/li`) is inserted, and also to not allow any other element besides a paragraph inside the ordered list items.

  To achieve this, the configuration file should include the following:

```
<elementProposals path="ol/li" insertElements="p"
       possibleElements="_INSERTED_"/>
```

- **Example 2: Insert Complex Element Structure**

For a more complex example, suppose that you want to insert a complex structure whenever a DITA `prolog` element is inserted.

For instance, if you need to insert the following structure inside `prolog` elements:

```
<prolog>
  <author></author>
  <metadata>
      <keywords>
          <keyword></keyword>
          <keyword></keyword>
      </keywords>
  </metadata>
</prolog>
```

The configuration file should include the following:

```
<elementProposals path="prolog" insertElements="author metadata"/>
<elementProposals path="prolog/metadata" insertElements="keywords"/>
<elementProposals path="prolog/metadata/keywords"
       insertElements="keyword, keyword"/>
```

- **Example 3: Limit Possible Elements**

  Suppose that you also want to limit the proposals for the `keywords` element to only allow the user to insert `audience` or `keyword` elements. The configuration file should include the following:

  ```
  <elementProposals path="prolog/metadata" insertElements="keywords"
            possibleElements="audience keywords"/>
  ```

  Suppose that you want to simply restrict your users from inserting `image` elements inside DITA list item elements (`li`), but still propose all the other elements that are defined in the associated schema. The configuration file should look like this:

  ```
  <elementProposals path="li" rejectElements="image" />
  ```

Examples: Configuring the Attributes Proposals

- **Example 1: Automatically Insert Attributes**

  Suppose that you want to insert an `id` attribute (with an empty value) whenever a DITA list item element (`li`) is inserted. The configuration file should include the following:

  ```
  <elementProposals path="li" insertAttributes="id"/>
  ```

- **Example 2: Limit Possible Attributes**

  Suppose that you also want to limit the number of choices for attributes that are presented to the user whenever a DITA list item element (`li`) is inserted. The configuration file should look like this:

  ```
  <elementProposals path="li" insertAttributes="id"
           possibleAttributes="id product platform audience"/>
  ```

  Suppose that you want to simply restrict your users from inserting `conref` attributes inside DITA topics (`topic` element), but still propose all the other attributes that are defined in the associated schema. The configuration file should look like this:

  ```
  <elementProposals path="topic" rejectAttributes="conref" />
  ```

Related Information:

Configuring the Proposals for Attribute and Element Values on page 1304
Customizing the Rendering of Elements on page 1307

Configuring the Proposals for Attribute and Element Values

Oxygen XML Editor plugin includes support for configuring the proposed values that appear in the *Content Completion Assistant*. To do so, a configuration file is used, along with the associated schema, to add or replace possible values for attributes or elements that are proposed in the *Content Completion Assistant*.

For an example of a specific use-case, suppose that you want the *Content Completion Assistant* to propose several possible values for the language code when you use an `xml:lang` attribute.

Setting up the Content Completion Configuration File

To customize the configuration file for the *Content Completion Assistant*, follow these steps:

1. Create a new `resources` folder (if it does not already exist) in the `frameworks` directory for the particular document type (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources`).
2. Open the **Preferences** dialog box and go to **Document Type Association**. Select the particular document type, click the **Edit** button, and in the **Classpath** tab add a link to that `resources` folder (if it does not already exist).
3. Create a new configuration file or edit an existing one.
   a. To easily create a new configuration file, you can use the *Content Completion Configuration* document template that is included in Oxygen XML Editor plugin (**File** > **New** > **New from Templates** > **Framework templates** > **Oxygen Extensions** > **Content Completion Configuration**). The document template includes details about how each element and attribute is used in the configuration file.
   b. If a configuration file (`cc_config.xml`) already exists for the particular document type (in the `resources` folder), you can modify this existing file.
4. Make the appropriate changes to your custom configuration file.
5. Save the file in the `resources` folder for the particular document type, using the fixed name: `cc_config.xml` (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources/cc_config.xml`).
6. Restart the application and open an XML document. In the *Content Completion Assistant* you should see your customizations.

   Tip: In some cases, you can simply use the **Refresh (F5)** action to test your customizations, without having to restart the application.

Configuring Proposed Values

For the purposes of adding or replacing the values that are proposed, the configuration file (`cc_config.xml`) includes a series of `match` instructions that will match an element or attribute name. You also have the possibility of using an attribute called `editable` on the `match` element to specify the editable state of the attribute values, as reflected in the **Attributes** view and the **In-place Attributes Editor**. The possible values for the `editable` attribute are:

- `true` - The attribute values can be edited by choosing from a combo box or manually providing a value.
- `false` - The attribute values cannot be edited.
- `onlyAllowedItems` - The attribute values can be edited, but only by choosing from a list of proposed values, in a non-editable combo box.

A new value is specified inside one or more `item` elements, which are grouped inside an `items` element. The behavior of the `items` element is specified with the help of the `action` attribute, which can have any of the following values:

- `append` - Adds new values to appear in the proposals list (default value).
- `addIfEmpty` - Adds new values to the proposals list only if no other values are contributed by the schema.
- `replace` - Replaces the values contributed by the schema with new values to appear in the proposals list.

The values in the configuration file can be specified either directly or by calling an external XSLT file that will extract data from an external source.

Other Important Notes About the Configuration File

Important:

- This configuration file only affects the content completion assistance, not validation.
- To test the effects of your changes, you should restart the application.

Example: Specifying Values Directly

If you want to specify the values directly, the configuration file should look like this:

```
<!-- Replaces the values for an element with the local name "lg",
      from the given namespace -->
<match elementName="lg" elementNS="http://www.oxygenxml.com/ns/samples">
    <items action="replace">
        <item value="stanza"/>
        <item value="refrain"/>
    </items>
</match>

<!-- Adds two values for an attribute with the local name "type",
      from any namespace -->
<match attributeName="type" editable="onlyAllowedItems">
    <items>
        <item value="stanza"/>
        <item value="refrain"/>
    </items>
</match>
```

Example: Calling an External XSLT Script

If you want to collect values from an external XSLT script, the configuration file should include something like this:

```
<xslt href="../xsl/get_values_from_db.xsl" useCache="false" action="replace"/>
```

In this example, the `get_values_from_db.xsl` is executed to extract values from a database.

Tip: You can use `xsl:message` as a debugging mechanism. These messages are presented in the results area at the bottom of the application whenever the *Content Completion Assistant* is invoked.

Note: A comprehensive XSLT sample is included in the **Content Completion Configuration** document template (in the **Framework Templates** > **Oxygen Extensions** section of the **New from templates** wizard).

Configuring Proposed Values in the Context Where the Content Completion was Invoked

A more complex scenario is if you want to choose the possible values to propose, depending on the context of the element in which the content completion was invoked.

Suppose that you want to propose certain possible values for one property (for example, *color*) and other values for another property (for example, *shape*). If the property represents a color, then the values should represent applicable colors, while if the property represents a shape, then the values should represent applicable shapes. See the following code snippets:

Your main document:

```
<sampleArticle>
  <!-- The possible values for @value should be "red" and "blue" -->
  <property name="color" value=""/>
  <!-- The possible values for @value should be "square" and "rectangle" -->
  <property name="shape" value=""/>
</sampleArticle>
```

The content completion configuration file:

```
<config xmlns="http://www.oxygenxml.com/ns/ccfilter/config">
    <match elementName="property" attributeName="value">
      <xslt href="get_values.xsl" useCache="false" action="replace"/>
    </match>
</config>
```

The stylesheet that defines the possible values based on the context of the property on which the content completion was invoked:

```
<xsl:stylesheet
  xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  xmlns:saxon="http://saxon.sf.net/"
  exclude-result-prefixes="xs"
  version="2.0">

  <xsl:param name="documentSystemID" as="xs:string"></xsl:param>
  <xsl:param name="contextElementXPathExpression" as="xs:string"></xsl:param>

  <xsl:template name="start">
```

```
    <xsl:apply-templates select="doc($documentSystemID)"/>
  </xsl:template>

  <xsl:template match="/">
   <xsl:variable name="propertyElement"
    select="saxon:eval(saxon:expression($contextElementXPathExpression, ./*))"/>

   <items>
     <xsl:if test="$propertyElement/@name = 'color'">
       <item value='red'/>
       <item value='blue'/>
     </xsl:if>
     <xsl:if test="$propertyElement/@name = 'shape'">
       <item value='rectangle'/>
       <item value='square'/>
     </xsl:if>
   </items>
  </xsl:template>
</xsl:stylesheet>
```

The `contextElementXPathExpression` parameter will be bound to an XPath expression that identifies the element in the context for which the content completion was invoked.

Related Information:

Configuring the Proposals for Elements and Attributes on page 1300

Customizing the Rendering of Elements on page 1307

Customizing the Rendering of Elements

In addition to the support for configuring the proposals that appear in the *Content Completion Assistant*, Oxygen XML Editor plugin also includes support for customizing how the elements are rendered. You can do this by using the *XMLNodeRendererCustomizer* API extension, but you can also use the same configuration file that is used to configure the content completion proposals.

For an example of a specific use-case, suppose that in DITA you want the names of paragraph elements (p) to be rendered as "**Paragraph**" instead of "**p**" in the various components in **Author** mode (such as in the **Outline** view, **Elements** view, **Attributes** view, and the breadcrumb navigation bar). To achieve this, you can use the `elementRenderings` element in the configuration file.

Setting up the Content Completion Configuration File

To customize the configuration file for the *Content Completion Assistant*, follow these steps:

1. Create a new `resources` folder (if it does not already exist) in the `frameworks` directory for the particular document type (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources`).
2. Open the **Preferences** dialog box and go to **Document Type Association**. Select the particular document type, click the **Edit** button, and in the **Classpath** tab add a link to that `resources` folder (if it does not already exist).
3. Create a new configuration file or edit an existing one.
   a. To easily create a new configuration file, you can use the *Content Completion Configuration* document template that is included in Oxygen XML Editor plugin (**File** > **New** > **New from Templates** > **Framework templates** > **Oxygen Extensions** > **Content Completion Configuration**). The document template includes details about how each element and attribute is used in the configuration file.
   b. If a configuration file (`cc_config.xml`) already exists for the particular document type (in the `resources` folder), you can modify this existing file.
4. Make the appropriate changes to your custom configuration file.
5. Save the file in the `resources` folder for the particular document type, using the fixed name: `cc_config.xml` (for example, `OXYGEN_INSTALL_DIR/frameworks/dita/resources/cc_config.xml`).
6. Restart the application and open an XML document. In the *Content Completion Assistant* you should see your customizations.

   Tip: In some cases, you can simply use the **Refresh (F5)** action to test your customizations, without having to restart the application.

Changing the Rendering of Elements (Their Names, Annotations, and Icons)

For the purposes of customizing how the content completion elements are rendered, you can use the `render` element inside a `elementRenderings` element to specify how element names, their annotations, and their icons are rendered.

You can use the following attributes for the `render` element:

- `element` - Identifies the element to be customized, in the form of a qualified name. If it does not have a prefix, it is considered to be from *noNamespace*.
- `as` - Provides the name (label) that will be displayed for the element in various components in **Author** mode (such as in the *Content Completion Assistant*, the breadcrumb navigation bar, the **Full Tags** display mode, and the **Outline**, **Elements**, **Attributes** views). This attribute is optional. If it is missing, the name of the element is used.
- `iconPath` - Optional attribute that specifies the icon for the element. This is shown in the *Content Completion Assistant* and the **Outline** view in **Author** mode. If it is a relative path, the full path of the icon image file will be computed starting from the directory of the configuration file (for example, a value of `"myImg.png"` will cause Oxygen XML Editor plugin to load `"frameworks/${framework}/resources/myImg.png"`). If you want to access a built-in resource, the value can begin with a forward slash `"/"`, and the image file will be searched for in the Oxygen XML Editor plugin classpath resources (for example,`"/images/OrderedList16.png"` will load an icon from the built-in Oxygen XML Editor plugin *JAR* file resources.
- `xml:lang` - Optional attribute that could be used to render the same element differently, depending on the language. If there are multiple `render` elements for the same `element` attribute (element name) and the `xml:lang` attribute is missing on one of them, that one will be considered the default fallback value to be used if none of the others match the language specified in the interface.

  Note: The default entry should be listed first, since the application tries to match them in sequence and the last match found is the one that is used.

  For example, suppose that you want the name of DITA paragraph elements (p) to be rendered as "Paragraphe" if the language is French, "Absatz" if the language is German, and "Paragraph" if the language is English (or any other language). Your configuration file should look something like this:

```
<elementRenderings>
  <render element="p" as="Paragraph"/>
  <render element="p" as="Paragraphe" xml:lang="fr"/>
  <render element="p" as="Absatz" xml:lang="de"/>
</elementRenderings>
```

You can also use the configuration file to customize the annotations for elements. For this purpose, the `render` element also accepts the following element to change the tooltip annotations for an element (in both **Author** mode and **Text** mode):

- `annotation` - This element can be used within the `render` element to customize the tooltip annotations that are displayed for the element in various components in **Author** mode (such as tooltips shown in the *Content Completion Assistant* documentation window, the breadcrumb navigation bar, the **Full Tags** display mode, and the **Outline**, **Elements**, **Attributes** views), as well as the tooltips that are displayed when you hover over elements in **Text** mode. You can use HTML content to style the annotations (see the example below).

  Note: If this element is missing, the styling for the annotations for that element is collected from the associated schema.

Other Important Notes About the Configuration File for Rendering Elements

Important:

- This configuration file only affects the content completion assistance, not validation.
- To test the effects of your changes, you should restart the application, although in some cases, you can simply use the **Refresh (F5)** action to test your customizations.
- If the *framework* has an associated *style guide*, then the annotations defined in the configuration file will take precedence over those defined in the *style guide*. To check to see if your *framework* uses a *style guide*, look for the following folder: `${oXygenInstallDir}frameworks/${framework}/styleguide/`. If that folder exists, it is recommended that you make your annotation changes directly in the *style guide*, rather than in the configuration file.

- If an *XMLNodeRendererCustomizer* API extension has been implemented for the *framework* and a configuration file is also used, the rendering customization for an element will be the result of merging the two. For example, if the *XMLNodeRendererCustomizer* implementation customizes the element name, while the configuration file specifies an icon for the element, the properties of both customizations will be rendered. However, if both implementations define the same property (for example, both specify the rendering of an element name), the customizations defined in the configuration file take precedence.
- The rendering customizations defined in the configuration file also applies to aspects of the Oxygen XML Web Author interface.

Example: Changing the Rendering of an Element

Suppose that you want to render the name of the DITA `title` element to begin with a capital letter, use a custom icon for it, and provide specific documentation for that element in the various components in **Author** mode. The configuration file should look like this:

```
<elementRenderings>
   <render element="title"   as="Title"  iconPath="cimg/AcceptAll16.png">
      <annotation>
         <html xmlns="http://www.w3.org/1999/xhtml">
           <head>
             <title>Documentation for the Title Element</title>
           </head>
             <body>
           <p>A <i>heading</i> or <b>label</b> for the main parts of a topic</p>
             </body>
         </html>
            </annotation>
   </render>
   </elementRenderings>
```

Related Information:

Configuring the Proposals for Attribute and Element Values on page 1304
Configuring the Proposals for Elements and Attributes on page 1300
Configuring an XML Node Renderer Customizer on page 1296
Schema Annotations in Author Mode on page 461
Annotations for XML Elements and Attributes in Content Completion Assistant on page 1309

Annotations for XML Elements and Attributes in Content Completion Assistant

Oxygen XML Editor plugin gathers documentation from the associated schemas (DTD, XML Schema, RelaxNG) and presents it for each element or attribute. For example, if you open the *Content Completion Assistant* for a recognized XML vocabulary, documentation is displayed for each element provided by the associated schema. Similar information is displayed when you hover over tag names presented in the **Elements** view. If you hover over attributes in the **Attributes** view you also see information about each attribute, gathered from the same schema.

If you have a *framework* configuration set up for your XML vocabulary, there is a special XML configuration file that can be added to provide additional documentation information or links to additional information for certain elements and attributes.

To provide this additional information in the *Content Completion Assistant*, follow these steps:

1. Create a new folder in the configuration directory for the document type.

   Example: `OXYGEN_INSTALL_DIR/frameworks/dita/styleguide`
2. Use the **New** document wizard to create a file using the **Content Completion Styleguide** document template (in the **Framework Templates** > **Oxygen Extensions** section).
3. Save the file in the folder created in step 1, using the fixed name: `contentCompletionElementsMap.xml`.
4. Open the **Preferences** dialog box , go to **Document Type Association**, and edit the document type configuration for your XML vocabulary. Now you need to indicate where Oxygen XML Editor plugin will locate your mapping file by doing one of the following:
   - In the **Classpath** tab add a link to the newly created folder.
   - In the **Catalogs** tab add a new catalog file. The selected file needs to contain the following:

     ```
     <?xml version="1.0" encoding="UTF-8"?>
     <!DOCTYPE catalog PUBLIC "-//OASIS//DTD XML Catalogs V1.1//EN"
         "http://www.oasis-open.org/committees/entity/release/1.1/catalog.dtd">
     ```

```
<catalog xmlns="urn:oasis:names:tc:entity:xmlns:xml:catalog">
    <uri name="http://www.oxygenxml.com/{processed_dt_name}/styleguide/
contentCompletionElementsMap.xml" uri="contentCompletionElementsMap.xml"/>
</catalog>
```

where *{processed_dt_name}* is the name of the document type in lower case and with spaces replaced by underscores.

Note: If Oxygen XML Editor plugin finds a mapping file in both locations, the one in the **Catalogs** tab takes precedence.

5. Make the appropriate changes to your custom mapping file.

   Example: You can look at how the DITA mapping file is configured: `OXYGEN_INSTALL_DIR/frameworks/dita/styleguide/contentCompletionElementsMap.xml`

   The associated XML Schema contains additional details about how each element and attribute is used in the mapping file.
6. Re-open the application and open an XML document.

In the *Content Completion Assistant*, you should see the additional annotations for each element.

Related Information:

Customizing the Rendering of Elements on page 1307

Example Files for a Custom Framework

This section lists the files used in the customization tutorials: the XML Schema, CSS files, XML files, XSLT stylesheets.

XML Schema

XML Schema file listings.

`sdf.xsd`

This sample file can also be found in our sample framework package that can be downloaded at: https://www.oxygenxml.com/php/get_oxygen_sample_framework.php. This sample is in the `schema` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace="http://www.oxygenxml.com/sample/documentation"
    xmlns:doc="http://www.oxygenxml.com/sample/documentation"
    xmlns:abs="http://www.oxygenxml.com/sample/documentation/abstracts"
    elementFormDefault="qualified">

    <xs:import
        namespace="http://www.oxygenxml.com/sample/documentation/abstracts"
        schemaLocation="abs.xsd"/>

    <xs:element name="book" type="doc:sectionType"/>
    <xs:element name="article" type="doc:sectionType"/>
    <xs:element name="section" type="doc:sectionType"/>

    <xs:complexType name="sectionType">
        <xs:sequence>
            <xs:element name="title" type="xs:string"/>
            <xs:element ref="abs:def" minOccurs="0"/>
            <xs:choice>
                <xs:sequence>
                    <xs:element ref="doc:section"
                        maxOccurs="unbounded"/>
                </xs:sequence>
                <xs:choice maxOccurs="unbounded">
                    <xs:element ref="doc:para"/>
                    <xs:element ref="doc:ref"/>
                    <xs:element ref="doc:image"/>
                    <xs:element ref="doc:table"/>
                </xs:choice>
            </xs:choice>
        </xs:sequence>
    </xs:complexType>

    <xs:element name="para" type="doc:paragraphType"/>

    <xs:complexType name="paragraphType" mixed="true">
        <xs:choice minOccurs="0" maxOccurs="unbounded">
            <xs:element name="b"/>
            <xs:element name="i"/>
            <xs:element name="link"/>
        </xs:choice>
```

```
    </xs:complexType>

    <xs:element name="ref">
        <xs:complexType>
            <xs:attribute name="location" type="xs:anyURI"
                use="required"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="image">
        <xs:complexType>
            <xs:attribute name="href" type="xs:anyURI"
                use="required"/>
        </xs:complexType>
    </xs:element>

    <xs:element name="table">
        <xs:complexType>
            <xs:sequence>
                <xs:element name="customcol" maxOccurs="unbounded">
                    <xs:complexType>
                        <xs:attribute name="width" type="xs:string"/>
                    </xs:complexType>
                </xs:element>
                <xs:element name="header">
                    <xs:complexType>
                        <xs:sequence>
                            <xs:element name="td"
                                maxOccurs="unbounded"
                                type="doc:paragraphType"/>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
                <xs:element name="tr" maxOccurs="unbounded">
                    <xs:complexType>
                        <xs:sequence>
                            <xs:element name="td"
                                type="doc:tdType"
                                maxOccurs="unbounded"/>
                        </xs:sequence>
                    </xs:complexType>
                </xs:element>
            </xs:sequence>
            <xs:attribute name="width" type="xs:string"/>
        </xs:complexType>
    </xs:element>


    <xs:complexType name="tdType">
        <xs:complexContent>
            <xs:extension base="doc:paragraphType">
                <xs:attribute name="row_span"
                    type="xs:integer"/>
                <xs:attribute name="column_span"
                    type="xs:integer"/>
            </xs:extension>
        </xs:complexContent>
    </xs:complexType>
</xs:schema>
```

abs.xsd

This sample file can also be found in our sample framework package that can be downloaded at: https://www.oxygenxml.com/php/get_oxygen_sample_framework.php. This sample is in the schema directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
    targetNamespace=
 "http://www.oxygenxml.com/sample/documentation/abstracts">
    <xs:element name="def" type="xs:string"/>
</xs:schema>
```

CSS

CSS file listing.

sdf.css

This sample file can also be found in our sample framework package that can be downloaded at: https://www.oxygenxml.com/php/get_oxygen_sample_framework.php. This sample is in the css directory.

```
/* Element from another namespace */
@namespace abs "http://www.oxygenxml.com/sample/documentation/abstracts";

abs|def{
    font-family:monospace;
    font-size:smaller;
}
```

```
abs|def:before{
    content:"Definition:";
    color:gray;
}

/* Vertical flow */
book,
section,
para,
title,
image,
ref {
    display:block;
}

/* Horizontal flow */
b,i {
    display:inline;
}

section{
    margin-left:1em;
    margin-top:1em;
}

section{
    -oxy-foldable:true;
    -oxy-not-foldable-child: title;
}

link[href]:before{
    display:inline;
    link:attr(href);
    content: "Click to open: " attr(href);
}

/* Title rendering*/
title{
    font-size: 2.4em;
    font-weight:bold;
}

* * title{
    font-size: 2.0em;
}
* * * title{
    font-size: 1.6em;
}
* * * * title{
    font-size: 1.2em;
}

book,
article{
    counter-reset:sect;
}
book > section,
article > section{
    counter-increment:sect;
}
book > section > title:before,
article > section > title:before{
    content: "Section: " counter(sect) " ";
}

/* Inlines rendering*/
b {
    font-weight:bold;
}

i {
    font-style:italic;
}

/*Table rendering */
table{
    display:table;
    border:1px solid navy;
    margin:1em;
    max-width:1000px;
    min-width:150px;
}

table[width]{
  width:attr(width, length);
}

tr, header{
    display:table-row;
}

header{
    background-color: silver;
    color:inherit
}
```

```
td{
  display:table-cell;
  border:1px solid navy;
  padding:1em;
}

image{
    display:block;
    content: attr(href, url);
    margin-left:2em;
}
```

XML

XML file listing.

`sdf_sample.xml`

This sample file can also be found in our sample framework package that can be downloaded at: https://www.oxygenxml.com/php/get_oxygen_sample_framework.php.

```
<?xml version="1.0" encoding="UTF-8"?>
<book xmlns="http://www.oxygenxml.com/sample/documentation"
    xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
    xmlns:abs="http://www.oxygenxml.com/sample/documentation/abstracts">
    <title>My Technical Book</title>
    <section>
        <title>XML</title>
        <abs:def>Extensible Markup Language</abs:def>
        <para>In this section of the book I will explain
            different XML applications.</para>
    </section>
    <section>
        <title>Accessing XML data.</title>
        <section>
            <title>XSLT</title>
            <abs:def>Extensible stylesheet language
                transformation (XSLT) is a language for
                transforming XML documents into other XML
                documents.</abs:def>
            <para>A list of XSL elements and what they do..</para>
            <table>
                <header>
                    <td>XSLT Elements</td>
                    <td>Description</td>
                </header>
                <tr>
                    <td>
                        <b>xsl:stylesheet</b>
                    </td>
                    <td>The <i>xsl:stylesheet</i> element is
                        always the top-level element of an
                        XSL stylesheet. The name
                            <i>xsl:transform</i> may be used
                        as a synonym.</td>
                </tr>
                <tr>
                    <td>
                        <b>xsl:template</b>
                    </td>
                    <td>The <i>xsl:template</i> element has
                        an optional mode attribute. If this
                        is present, the template will only
                        be matched when the same mode is
                        used in the invoking
                            <i>xsl:apply-templates</i>
                        element.</td>
                </tr>
                <tr>
                    <td>
                        <b>for-each</b>
                    </td>
                    <td>The xsl:for-each element causes
                        iteration over the nodes selected by
                        a node-set expression.</td>
                </tr>
                <tr>
                    <td column_span="2">End of the list</td>
                </tr>
            </table>
        </section>
        <section>
            <title>XPath</title>
            <abs:def>XPath (XML Path Language) is a terse
                (non-XML) syntax for addressing portions of
                an XML document. </abs:def>
            <para>Some of the XPath functions.</para>
            <table>
                <header>
```

```
                    <td>Function</td>
                    <td>Description</td>
                </header>
                <tr>
                    <td>format-number</td>
                    <td>The <i>format-number</i> function
                        converts its first argument to a
                        string using the format pattern
                        string specified by the second
                        argument and the decimal-format
                        named by the third argument, or the
                        default decimal-format, if there is
                        no third argument</td>
                </tr>
                <tr>
                    <td>current</td>
                    <td>The <i>current</i> function returns
                        a node-set that has the current node
                        as its only member.</td>
                </tr>
                <tr>
                    <td>generate-id</td>
                    <td>The <i>generate-id</i> function
                        returns a string that uniquely
                        identifies the node in the argument
                        node-set that is first in document
                        order.</td>
                </tr>
            </table>
        </section>
    </section>
    <section>
        <title>Documentation frameworks</title>
        <para>One of the most important documentation
            frameworks is DocBook.</para>
        <image
            href="http://www.xmlhack.com/images/docbook.png"/>
        <para>The other is the topic oriented DITA, promoted
            by OASIS.</para>
        <image
href="http://www.oasis-open.org/images/standards/oasis_standard.jpg"
        />
    </section>
</book>
```

XSL

XSL file listing.

`sdf.xsl`

This sample file can also be found in our sample framework package that can be downloaded at: https://www.oxygenxml.com/php/get_oxygen_sample_framework.php. This sample is in the `xsl` directory.

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet
    xmlns:xsl="http://www.w3.org/1999/XSL/Transform" version="2.0"
    xpath-default-namespace=
    "http://www.oxygenxml.com/sample/documentation">

    <xsl:template match="/">
        <html><xsl:apply-templates/></html>
    </xsl:template>

    <xsl:template match="section">
        <xsl:apply-templates/>
    </xsl:template>

    <xsl:template match="image">
        <img src="{@href}"/>
    </xsl:template>

    <xsl:template match="para">
        <p>
            <xsl:apply-templates/>
        </p>
    </xsl:template>

    <xsl:template match="abs:def"
        xmlns:abs=
        "http://www.oxygenxml.com/sample/documentation/abstracts">
        <p>
            <u><xsl:apply-templates/></u>
        </p>
    </xsl:template>

    <xsl:template match="title">
        <h1><xsl:apply-templates/></h1>
    </xsl:template>
```

```
    <xsl:template match="b">
        <b><xsl:apply-templates/></b>
    </xsl:template>

    <xsl:template match="i">
        <i><xsl:apply-templates/></i>
    </xsl:template>

    <xsl:template match="table">
        <table frame="box" border="1px">
            <xsl:apply-templates/>
        </table>
    </xsl:template>

    <xsl:template match="header">
        <tr>
            <xsl:apply-templates/>
        </tr>
    </xsl:template>

    <xsl:template match="tr">
        <tr>
            <xsl:apply-templates/>
        </tr>
    </xsl:template>

    <xsl:template match="td">
        <td>
            <xsl:apply-templates/>
        </td>
    </xsl:template>

    <xsl:template match="header/header/td">
        <th>
            <xsl:apply-templates/>
        </th>
    </xsl:template>

</xsl:stylesheet>
```

CSS Support in Author Mode

Author editing mode supports most CSS 2.1 selectors, numerous CSS 2.1 properties, and some CSS 3 selectors. Also, some custom functions and properties that extend the W3C CSS specification, and are useful for URL and string manipulation, are available to developers who create **Author** editing *frameworks*.

Configuring and Managing Multiple CSS Styles

Oxygen XML Editor plugin provides a **Styles** drop-down menu on the toolbar that allows you to select one *main (non-alternate) CSS style* and multiple *alternate CSS styles*. This makes it easy to change the look of the document as it appears in **Author** mode and the output without having to continually edit the CSS stylesheets.

An example of a common use case is when content authors want to use custom styling within a document. You can select a *main* CSS stylesheet that styles the whole document and then apply *alternate* styles, as layers, to specific parts of the document.

Managing the CSS Styles

The *main* and *alternate* styles that are listed in the **Styles** drop-down menu can be controlled in the **Document Type** configuration dialog box. To access it, follow these steps:

1. Open the **Preferences** dialog box .
2. Go to **Document Type Association**.
3. Select the appropriate document type and press the **Edit** button.

   Important: If you do not have access rights to the folder where the *framework* files are stored, you can either elevate read/write permissions on that *framework* folder or you can extend the *framework* and customize the CSS stylesheets in the extension. If you want to share the customized extension with the rest of your team, see Sharing the Extended Framework on page 1299.

The CSS styles (CSS files) associated with the particular document type are listed in the **CSS** subtab of the **Author** tab.

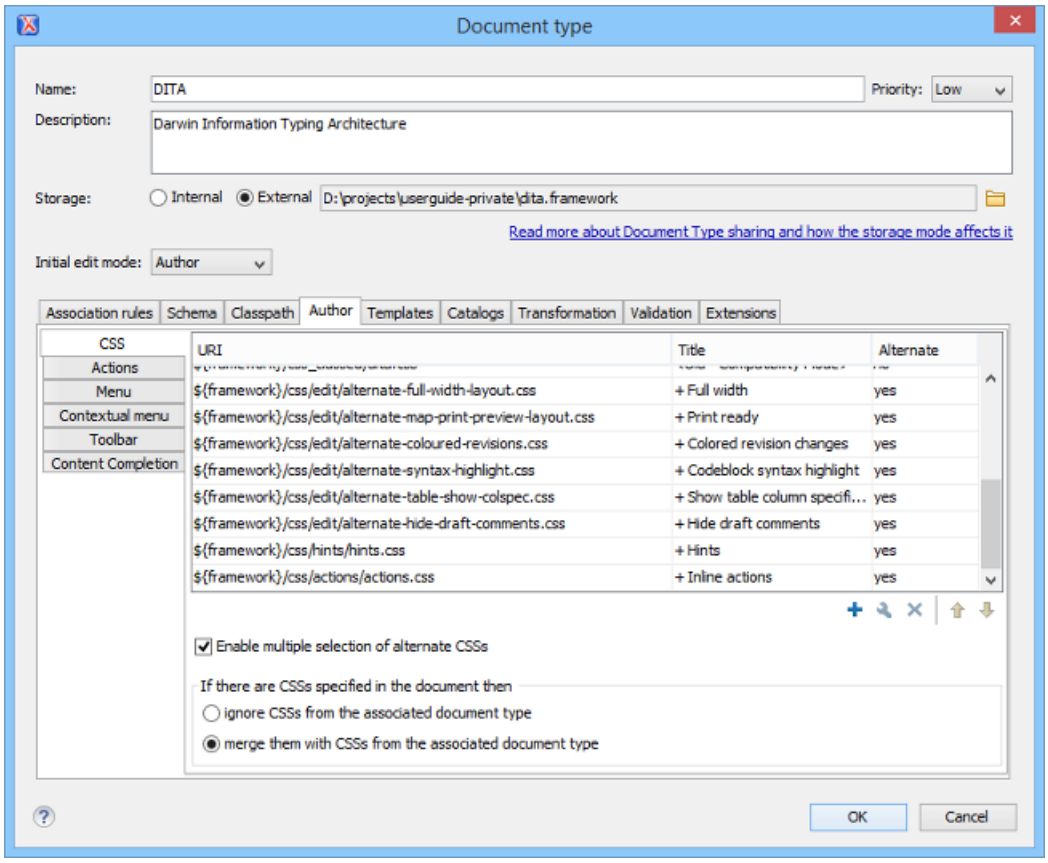


Figure 668: Main and Alternate CSS Styles in the Document Type Configuration Dialog Box

You can **Add**, **Edit**, or **Delete** styles from this dialog box to manage the *main* and *alternate* styles associated to the particular document type. You can also change the order of the styles by using the **Move Up** and **Move Down** buttons. This will also change the order that they appear in the **Styles** drop-down menu. The *alternate* styles are combined with the *main* CSS sequentially, in the order that they appear in this list. Therefore, if the same style rules are included in multiple CSS files, the rules that are defined in the last *alternate* style in this list will take precedence, since it is the last one to be combined (applied as a layer).

The **URI** column shows the path of each CSS file. The names listed in the **Styles** drop-down menu match the values in the **Title** column. The value in the **Alternate** column determines whether it is a *main* or *alternate* CSS. If the value is *no* it is a *main* CSS. If the value is *yes* it is an *alternate* CSS and the style can be combined with a *main* CSS or other *alternate* styles when using the **Styles** drop-down menu.

Note: To group alternate styles into categories (submenus), use a vertical bar character (|) in the **Title** column. You can use multiple vertical bars for multiple submenus. The text before each vertical bar will be rendered as the name of a submenu entry in the **Styles** drop-down menu, while the text after the final vertical bar will be rendered as the name of the style inside the submenu.

Example: Suppose that you want to add two alternate stylesheets in separate submenus, with the **Title** column set to `My Styles|User Assistance|Hints` and `My Styles|User Actions|Inline Actions`, respectively.

URI	Title	Alternate
${framework}/css/hints/hints.css	My Styles|User Assistance| Hints	yes
${framework}/css/actions/actions.css	My Styles|User Actions|Inline actions	yes

Oxygen XML Editor plugin will add a `My Styles` submenu with two submenus (`User Assistance` that contains the `Hints` style, and `User Actions` that contains the `Inline Actions` style) in the **Styles** drop-down menu.

The **Enable multiple selection of alternate CSSs** checkbox at the bottom of the pane must be selected for the *alternate styles*to be combined. They are applied like layers and you can activate any number of them. If this option is not selected, the *alternate* styles are treated like *main CSS styles* and you can only select one at a time. By default, this option is selected. There are also a few options that allow you to specify how to handle the CSS if there are CSS styles specified in the document. You can choose to *ignore* or *merge* them.

The following rules apply for merging CSS styles:

- CSS files with the same title will be merged.
- CSS files without a title will contribute to all others.
- They are merged sequentially, in the order that they appear in the list.

Using the Styles Drop-Down Menu

You can use the **Styles** drop-down menu to select a *main style* that applies to the whole document and then select one or more *alternate styles* that behave like layers and are merged sequentially with the *main style*. The *main* styles are listed in the top section, while the *alternate styles* are listed in the bottom section. The styles (defined in their respective CSS files) that are selected in this drop-down menu are used to render your documents in **Author** mode and in the output.

Note: If you deselect the **Enable multiple selection of alternate CSSs** option in the **CSS** subtab of the **Document Type** configuration dialog box, the *alternate styles* are treated like *main CSS styles* and you can only select one at a time.

The selections from the **Styles** drop-down menu are persistent, meaning that Oxygen XML Editor plugin will remember the selections when subsequent documents are opened.

EXAMPLE: CSS Styles in DITA

Oxygen XML Editor plugin comes with a set of predefined CSS layer stylesheets for DITA documents (as well as some that are specifically for *DITA maps*). In the subsequent figure, a DITA document has the **Century** style selected for the *main CSS style* and the *alternate styles* **Full width**, **Show table column specification**, **Hints**, and **Inline actions** are combined for additive styling to specific parts of the document.

Tip: The **Hints** style displays tooltips throughout DITA documents that offer additional information to help you with the DITA structure. The **Inline actions** style displays possible elements that are allowed to be inserted at various locations throughout DITA documents.

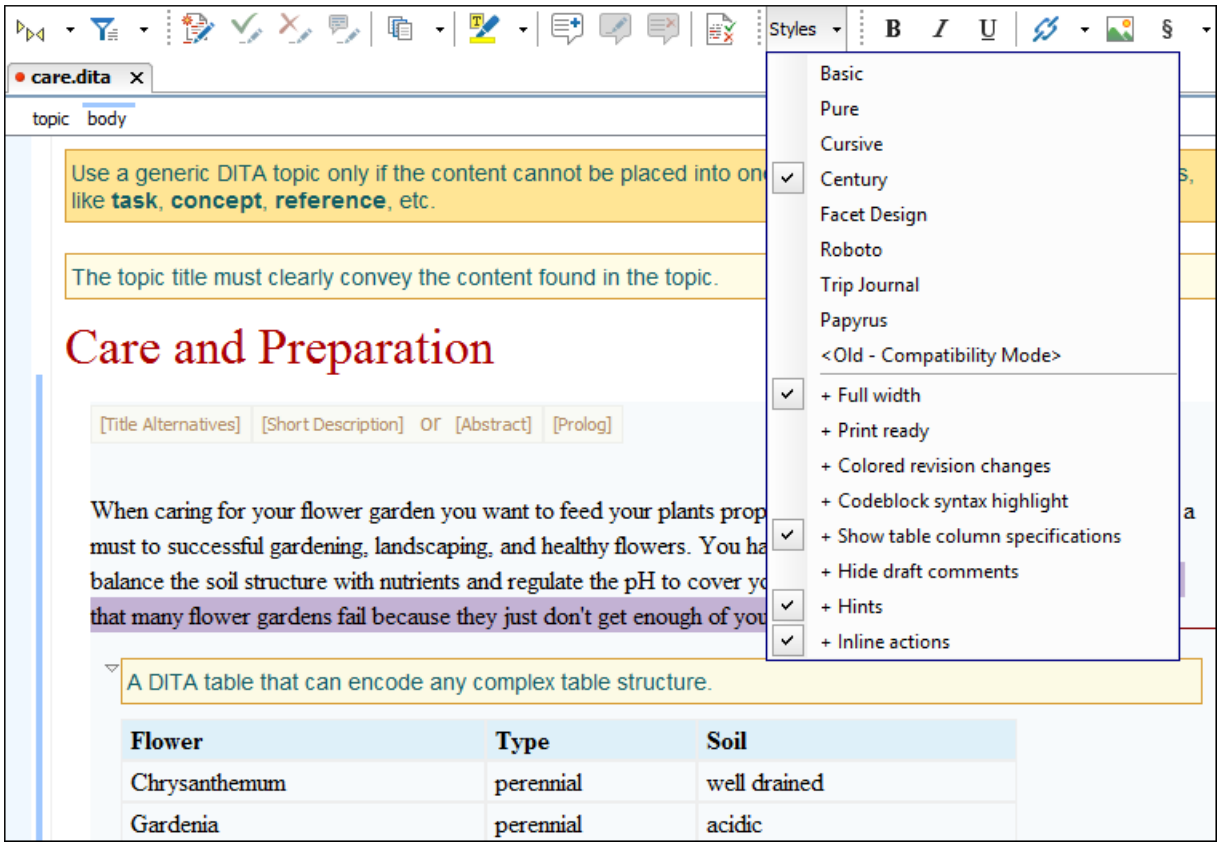


Figure 669: Styles Drop-down Menu in a DITA Document

Related Information:

CSS Subtab on page 50
Customizing the Main CSS of a Framework on page 1297

Handling CSS Imports

When a CSS document contains imports to other CSS documents, the references are also passed through the *XML Catalog* URI mappings to determine an indirect CSS referenced location.

Example: CSS Import

For example, if you can have a CSS import, such as:

```
@import "http://host/path/to/location/custom.css";
```

and then add your own *XML Catalog* file that maps the location to a custom CSS in the **XML Catalog** preferences page:

```
<uri name="http://host/path/to/location/custom.css"
      uri="path/to/custom.css"/>
```

Add a Custom Default CSS for Every XML Document

To add a custom CSS that is applied to every XML document, add a mapping in your *XML Catalog* file that looks like this:

```
<uri name="http://www.oxygenxml.com/extensions/author/css/userCustom.css"
      uri="path/to/custom.css"/>
```

This extra mapped CSS location will be parsed every time the application processes the CSS stylesheets used to render the opened XML document in the visual **Author** editing mode. This allows your custom CSS to be used without the need to modify all other CSS stylesheets contributed in the document type configuration.

Editor Variables in CSS Imports

You can use various editor variables in CSS imports. When editing an XML document with an associated CSS in **Author** mode, the editor variables will be expanded and resolved.

Example: Editor Variable in a CSS Import

For example, the following editor variable:

```
@import "${framework(DITA)}/custom.css";
```

is resolved in the DITA *framework* folder where the `custom.css` is placed.

`oxygen` Media Type

The CSS stylesheets can specify how a document is presented on different types of media (on the screen, paper, etc.) You can specify that some of the selectors from your CSS should be taken into account only in the Oxygen XML Editor plugin **Author** mode and ignored in other media types. This can be accomplished by using the `oxygen` media type.

Example: *oxygen* Media Type

```
b{
 font-weight:bold;
 display:inline;
}

@media oxygen{
 b{
  text-decoration:underline;
 }
}
```

This example results in the text being bold if the document is opened in a web browser that does not recognize `@media oxygen`, while the text is bold and underlined when opened in Oxygen XML Editor plugin **Author** mode.

You can also use the `oxygen` media type to specify CSS selectors to be applied in certain operating systems or platforms by using the `os` and `platform` properties. For example, you can specify one set of style rules for displaying Oxygen XML Editor plugin in Windows, and another set of style rules for Mac OS. The supported properties are as follows:

- **os** - The possible values are: `win`, `linux`, or `mac`.
- **platform** - The possible values are: `standalone`, `eclipse`, or `webapp`.

Example: *os* and *platform* Properties

```
@media oxygen AND (os:"win") AND (platform:"standalone") {
    p{
        content:"PPP";
    }
}
```

Related Information:

@media Rule on page 1320

CSS At-Rules

Oxygen XML Editor plugin supports some of the standard at-rules specified by CSS Level 2.1 and 3. The `@media` rule also include support for some style rules that are specific to Oxygen XML Editor plugin.

@font-face At-Rule

Oxygen XML Editor plugin allows you to use custom fonts in the **Author** mode by specifying them in the CSS using the `@font-face` media type. Only the `src` and `font-family` CSS properties can be used for this media type.

Example: *@font-face* Rule

```
@font-face{
    font-family:"Baroque Script";
    /*The location of the loaded TTF font must be relative to the CSS*/
    src:url("BaroqueScript.ttf");
```

```
}
```

The specified `font-family` must match the name of the font declared in the `.ttf` file.

@media Rule

The @media rule allows you to set different style rules for multiple types of media in the same stylesheet. For example, you can set the font size to be different on the screen than on paper. Oxygen XML Editor plugin supports several media types, allowing you to set the style rules for presenting a document on various media (on screen, paper, etc.)

Supported Media Types

- `screen` - The styles marked with this media type are used only for rendering a document on screen.
- `print` - The styles marked with this media type are used only for printing a document.
- `all` - The styles marked with this media type are used for rendering a document in all supported types of media.
- `oxygen` - The styles marked with this media type are used only for rendering a document in the Oxygen XML Editor plugin **Author** mode. For more information, see oxygen Media Type on page 1319.
- `oxygen-dark-theme` - The styles marked with this media type are used only for rendering a document in the Oxygen XML Editor plugin **Author** mode when a dark theme is used (for example, *Graphite*).
- `oxygen-high-contrast-black` - The styles marked with this media type are used only for rendering a document in the Oxygen XML Editor plugin **Author** mode on a Windows High Contrast Theme with a black background.
- `oxygen-high-contrast-white` - The styles marked with this media type are used only for rendering a document in the Oxygen XML Editor plugin **Author** mode on a Windows High Contrast Theme with a white background.

Example: *@media* Rule

```
@media oxygen{
 b{
  text-decoration:underline;
 }
}
@media oxygen-high-contrast-white{
 b{
  font-weight:bold;
 }
}
```

Supported Properties

Oxygen XML Editor plugin also supports a few properties to set specific style rules that depend upon the size of the visible area in **Author** mode. These supported properties are as follows:

- `min-width` - The styles selected in this property are applied if the visible area in **Author** mode is equal to or greater than the specified value.
- `max-width` - The styles selected in this property are applied if the visible area in **Author** mode is less than or equal to the specified value.

Example: *min-width* and *max-width* Properties

```
@media (min-width:500px){
 p{
    content:'XXX';
 }
}
@media (max-width:700px){
 p:after{
    content:'yyy';
 }
}
```

Related Information:

oxygen Media Type on page 1319

Standard W3C CSS Supported Features

Oxygen XML Editor plugin supports most of the CSS Level 3 selectors and most of the CSS Level 2.1 properties

Supported CSS Selectors

The following table lists the CSS selectors that are supported in Oxygen XML Editor plugin:

Expression	Name	CSS Level	Description / Example
`*`	Universal selector	CSS Level 2	Matches any element
`E`	Type selector	CSS Level 2	Matches any E element (i. e. an element with the local name E)
`E F`	Descendant selector	CSS Level 2	Matches any F element that is a descendant of an E element.
`E > F`	Child selectors	CSS Level 2	Matches any F element that is a child of an element E.
`E:lang(c)`	Language pseudo-class	CSS Level 2	Matches element of type E if it is in (human) language c (the document language specifies how language is determined).
`E + F`	Adjacent selector	CSS Level 2	Matches any F element immediately preceded by a sibling element E.
`E ~ F`	General sibling selector	CSS Level 3	Matches any F element preceded by a sibling element E.
`E[foo]`	Attribute selector	CSS Level 2	Matches any E element with the `"foo"` attribute set (whatever the value).
`E[foo="warning"]`	Attribute selector with value	CSS Level 2	Matches any E element whose `"foo"` attribute value is exactly equal to `"warning"`.
`E[foo~="warning"]`	Attribute selector containing value	CSS Level 2	Matches any E element whose `"foo"` attribute value is a list of space-separated values, one of which is exactly equal to `"warning"`.
`E[lang|="en"]`	Attribute selector containing hyphen separated values	CSS Level 2	Matches any E element whose `"lang"` attribute has a hyphen-separated list of values beginning (from the left) with `"en"`.
`E:before` and `E:after`	Pseudo elements	CSS Level 2	The `':before'` and `':after'` pseudo-elements can be used to insert generated content before or after an element's content.
`E:before(n)` and `E:after(n)`	Pseudo elements	CSS Level 3	Multiple `':before(n)'` and `':after(n)'` pseudo-elements can be used to insert content before or after the content of an element (or other pseudo-element). For more information, see the W3C CSS3 pseudo elements site.

Expression	Name	CSS Level	Description / Example
`E:first-child`	The first-child pseudo-class	CSS Level 2	Matches element E when E is the first child of its parent.
`E:not(s)`	Negation pseudo-class	CSS Level 2	An E element that does not match simple selector s.
`E:has`	Relational pseudo-class	CSS Level 4	The `:has()` relational pseudo-class is a functional pseudo-class that takes a relative selector as an argument. For more information, see :has Relational Pseudo-Class on page 1325.
`E:hover`	The hover pseudo-class	CSS Level 2	The `:hover` pseudo-class applies while the user designates an element with a pointing device, but does not necessarily activate it. When moving the pointing device over an element, all the parent elements up to the root are taken into account.
`E:focus`	The focus pseudo-class	CSS Level 2	The `:focus` pseudo-class applies while an element has the focus (accepts keyboard input).
`E:focus-within`	The generalized input focus pseudo-class	CSS Level 4	The `:focus-within` pseudo-class applies to elements for which the `:focus` pseudo-class applies. Additionally, the ancestors of an element that matches `:focus-within` also match.
`E#myid`	The ID selector	CSS Level 2	Matches any E element with ID equal to "myid". **Important:** Limitation: In Oxygen XML Editor plugin the match is performed only taking into account the attributes with the exact name: *"id"*.
`E[att^="val"]`	Substring matching attribute selector	CSS Level 3	An E element whose `att` attribute value begins exactly with the string `val`.
`E[att$="val"]`	Substring matching attribute selector	CSS Level 3	An E element whose `att` attribute value ends exactly with the string `val`.
`E[att*="val"]`	Substring matching attribute selector	CSS Level 3	An E element whose `att` attribute value contains the substring `val`.
`E:root`	Root pseudo-class	CSS Level 3	Matches the root element of the document. In HTML, the root element is always the HTML element.
`E:empty`	Empty pseudo-class	CSS Level 3	An E element that has no text or child elements.

Expression	Name	CSS Level	Description / Example
`E:nth-child(n)`	The nth-child pseudo-class	CSS Level 3	An E element, the nth child of its parent.
`E:nth-last-child(n)`	The nth-last-child pseudo-class	CSS Level 3	An E element, the nth child of its parent, counting from the last one.
`E:nth-of-type(n)`	The nth-of-type pseudo-class	CSS Level 3	An E element, the nth sibling of its type.
`E:nth-last-of-type(n)`	The nth-last-of-type pseudo-class	CSS Level 3	An E element, the nth sibling of its type, counting from the last one.
`E:last-child`	The last-child pseudo-class	CSS Level 3	An E element, last child of its parent.
`E:first-of-type`	The first-of-type pseudo-class	CSS Level 3	An E element, first sibling of its type.
`E:last-of-type`	The last-of-type pseudo-class	CSS Level 3	An E element, last sibling of its type.
`E:only-child`	The only-child pseudo-class	CSS Level 3	An E element, only child of its parent.
`E:only-of-type`	The only-of-type pseudo-class	CSS Level 3	An E element, only sibling of its type.
`ns|E`	Element namespace selector	CSS Level 3	An element that has the local name E and the namespace given by the prefix `ns`. The namespace prefix can be bound to a URI by the at-rule: `@namespace ns "http://some_namespace_uri";` See Namespace Selector on page 1323.
`E!>F`	The subject selector	CSS Level 4 (experimental)	An element that has the local name E and has a child F. See Subject Selector on page 1324.

Namespace Selector

In the CSS 2.1 standard, the element selectors ignore the namespaces of the elements they are matching. Only the local name of the elements are considered in the selector matching process.

Oxygen XML Editor plugin uses a different approach that is similar to the CSS Level 3 specification. If the element name from the CSS selector is not preceded by a namespace prefix it is considered to match an element with the same local name as the selector value and ANY namespace. Otherwise, the element must match both the local name and the namespace.

In CSS up to version 2.1 the name tokens from selectors are matching all elements from ANY namespace that have the same local name. Example:

```
<x:b xmlns:x="ns_x"/>
<y:b xmlns:y="ns_y"/>
```

Are both matched by the rule:

```
b {font-weight:bold}
```

Starting with CSS Level 3 you can create selectors that are namespace aware.

Example: Defining both prefixed namespaces and the default namespace

Given the namespace declarations:

```
@namespace sync "http://sync.example.org";
@namespace "http://example.com/foo";
```

In a context where the default namespace applies:

sync|A

represents the name A in the `http://sync.example.org` namespace.

|B

represents the name B that belongs to NO NAMESPACE.

***|C**

represents the name C in ANY namespace, including NO NAMESPACE.

D

represents the name D in the `http://example.com/foo` namespace.

Example: Defining only prefixed namespaces

Given the namespace declaration:

```
@namespace sync "http://sync.example.org";
```

Then:

sync|A

represents the name A in the `http://sync.example.org` namespace.

|B

represents the name B that belongs to NO NAMESPACE.

***|C**

represents the name C in ANY namespace, including NO NAMESPACE.

D

represents the name D in ANY namespace, including NO NAMESPACE.

Example: Defining prefixed namespaces combined with pseudo-elements

To match the `def` element its namespace will be declared, bind it to the *abs* prefix, and then write a CSS rule:

```
@namespace abs "http://www.oxygenxml.com/sample/documentation/abstracts";
```

Then:

abs|def

represents the name "def" in the `http://www.oxygenxml.com/sample/documentation/abstracts` namespace.

abs|def:before

represents the :before pseudo-element of the "def" element from the `http://www.oxygenxml.com/sample/documentation/abstracts` namespace.

Subject Selector

Oxygen XML Editor plugin supports the subject selector described in CSS Level 4 (currently a working draft at W3C http://www.w3.org/TR/selectors4/). This selector matches a structure of the document, but unlike a compound selector, the styling properties are applied to the subject element (the one marked with "!") instead of the last element from the path.

The subject of the selector can be explicitly identified by appending an exclamation mark (!) to one of the compound selectors in a selector. Although the element structure that the selector represents is the same with or

without the exclamation mark, indicating the subject in this way can change which compound selector represents the subject in that structure.

Example:

```
table! > caption {
  border: 1px solid red;
}
```

A border will be drawn to the table elements that contain a caption, as direct child.

This is different from:

```
table > caption {
  border: 1px solid red;
}
```

This draws a border around the caption.

Taking Processing Instructions into Account in CSS Subject Selectors

You can test for the existence of specific processing instructions (`PI`) in the child hierarchy of a subject selector.

For example:

```
@namespace oxy "http://www.oxygenxml.com/extensions/author";

chapter! > oxy|processing-instruction[important][level="high"]{
  color:red;
}
```

This would change the color of a DocBook chapter to red if it contains the `important` processing instruction:

```
<chapter>
   <title>A title</title>
   <?important level='high'?>
</chapter>
```

Descendant Selectors Limitation

Important: The current implementation has a known limitation. The general descendant selectors are taken into account as direct child selectors. For example, the following two CSS selectors are considered equivalent:

```
a:has(b c)
```

and:

```
a:has(b>c)
```

Related Information:

:has Relational Pseudo-Class on page 1325

`:has` Relational Pseudo-Class

Oxygen XML Editor plugin supports the CSS Level 4 subject selector (currently a working draft at W3C http://www.w3.org/TR/selectors4/), as described in Subject Selector on page 1324. Oxygen XML Editor plugin also supports the `:has` relational pseudo-class that has similar functionality and it can match an element by taking its child elements into account. For more information, see https://drafts.csswg.org/selectors-4/#relational.

You can create conditions that take into account the structure of the matching element.

Example: *has* Pseudo Class

```
table:has( tbody > thead){
 border: 1px solid red;
}
```

This example will result in a border being drawn for the table elements that contain at least a `thead` element in the `tbody` element.

Taking Processing Instructions into Account in CSS Subject Selectors

You can test for the existence of specific processing instructions (PI) in the child hierarchy of a subject selector.

For example:

```
@namespace oxy "http://www.oxygenxml.com/extensions/author";

chapter! > oxy|processing-instruction[important][level="high"]{
  color:red;
}
```

This would change the color of a DocBook chapter to red if it contains the `important` processing instruction:

```
<chapter>
   <title>A title</title>
   <?important level='high'?>
</chapter>
```

Descendant Selectors Limitation

Important: The current implementation has a known limitation. The general descendant selectors are taken into account as direct child selectors. For example, the following two CSS selectors are considered equivalent:

```
a:has(b c)
```

and:

```
a:has(b>c)
```

Supported CSS Properties

Oxygen XML Editor plugin validates all CSS 2.1 properties, but does not render *aural* and *paged* categories properties in **Author** mode, as well as some of the values of the *visual* category that are listed below under the **Ignored Values** column. For the Oxygen XML Editor plugin-specific (extension) CSS properties, see Oxygen XML Editor plugin CSS Extensions on page 1332.

Name	Rendered Values	Ignored Values
'background-attachment'	NONE	
'background-color'	<color> | inherit	transparent
'background-image'	<uri> | none | inherit	
'background-position'	top | right | bottom | left | center	<percentage> | <length>
'background-repeat'	repeat | repeat-x | repeat-y | no-repeat | inherit	
'background'	background-color | background-image | background-position | background-repeat	
'border-collapse'	NONE	
'border-color'	<color> | inherit	transparent
'border-spacing'	NONE	
'border-style'	<border-style> | inherit	
'border-top' 'border-right' 'border-bottom' 'border-left'	[<border-width> || <border-style> || <border-color>] | inherit	

Name	Rendered Values	Ignored Values
'border-top-color' 'border-right-color' 'border-bottom-color' 'border-left-color'	<color> | inherit	transparent
'border-top-style' 'border-right-style' 'border-bottom-style' 'border-left-style'	<border-style> | inherit	
'border-top-width' 'border-right-width' 'border-bottom-width' 'border-left-width'	<border-width> | inherit	
'border-width'	<border-width> | inherit	
'border'	[<border-width> || <border-style> || <border-color>] | inherit	
'bottom'	<length> | <percentage> | inherit	auto
'caption-side'	NONE	
'clear'	NONE	
'clip'	NONE	
'color'	<color> | inherit	
'content'	normal | none | [<string> | <URI> | <counter> | attr(<identifier>) | open-quote | close-quote]+ | inherit	no-open-quote | no-close-quote
'counter-increment'	[<identifier> <integer> ?]+ | none | inherit	
'counter-reset'	[<identifier> <integer> ?]+ | none | inherit	
'cursor'	NONE	
'direction'	ltr| rtl | inherit	
'display'	inline | block | list-item | table | table-row-group | table-header-group | table-footer-group | table-row | table-column-group | table-column | table-cell | table-caption | none | inherit	run-in | inline-block | inline-table - considered block
'empty-cells'	show | hide | inherit	
'float'	NONE	
'font-family'	[[<family-name> | <generic-family>] [, <family-name> | <generic-family>]*] | inherit	

Name	Rendered Values	Ignored Values
'font-size'	<absolute-size> | <relative-size> | <length> | <percentage> | inherit	
'font-style'	normal | italic | oblique | inherit	
'font-variant'	NONE	
'font-weight'	normal | bold | bolder | lighter | 100 | 200 | 300 | 400 | 500 | 600 | 700 | 800 | 900 | inherit	
'font'	[['font-style' || 'font-weight']? 'font-size' [/ 'line-height']? 'font-family'] | inherit	'font-variant' 'line-height' caption | icon | menu | message-box | small-caption | status-bar
'height'	NONE	
'left'	<length> | <percentage> | inherit	auto
'letter-spacing'	NONE	
'line-height'	normal | <number> | <length> | <percentage> | inherit	
'list-style-image'	NONE	
'list-style-position'	NONE	
'list-style-type'	disc | circle | square | decimal | lower-roman | upper-roman | lower-latin | upper-latin | lower-alpha | upper-alpha | -oxy-lower-cyrillic-ru | -oxy-lower-cyrillic-uk | -oxy-upper-cyrillic-ru | -oxy-upper-cyrillic-uk | box | diamond | check | hyphen | none | inherit	lower-greek | armenian | georgian
'list-style'	['list-style-type'] | inherit	'list-style-position' || 'list-style-image'
'margin-right' 'margin-left'	<margin-width> | inherit | auto	
'margin-top' 'margin-bottom'	<margin-width> | inherit	
'margin'	<margin-width> | inherit | auto	
'max-height'	NONE	
'max-width'	<length> | <percentage> | none | inherit - supported for *inline*, *block-level*, and replaced	

Name	Rendered Values	Ignored Values
	elements (such as images, tables, table cells)	
'min-height'	Absolute values, such as 230px, 1in, 7pt, 12em.	Values proportional to the parent element height, such as 30%
'min-width'	<length> | <percentage> | inherit - supported for *inline*, *block-level*, and replaced elements (such as images, tables, table cells)	
'outline-color'	[<color> | invert | inherit	
'outline-style'	[<border-style> | inherit	
'outline-width'	[<border-width> | inherit	
'outline'	[<outline-width> || <outline-style> || <outline-color>] | inherit	
'overflow'	NONE	
'padding-top' 'padding-right' 'padding-bottom' 'padding-left'	<padding-width> | inherit	
'padding'	<padding-width> | inherit	
'position'	absolute | fixed - supported for block display elements, relative - supported for *block* and *inline* display elements	absolute | fixed not supported for *inline* display elements
'quotes'	NONE	
'right'	<length> | <percentage> | inherit	auto
'table-layout'	auto	fixed | inherit
'text-align'	left | right | center | inherit	justify
'text-decoration'	none | [underline || overline || line-through] | inherit	blink
'text-decoration-style'	solid | double | dotted | dashed | wavy | inherit	
'text-indent'	<length> | <percentage> | inherit	
'text-transform'	none | capitalize | uppercase | lowercase | inherit	
'top'	<length> | <percentage> | inherit	auto

Name	Rendered Values	Ignored Values
'unicode-bidi'	bidi-override| normal| embed| inherit	
'vertical-align'	baseline | sub | super | top | text-top | middle | bottom | text-bottom | inherit	<percentage> | <length>
'visibility'	visible | hidden | inherit | -oxy-collapse-text	collapse
'white-space'	normal | pre | nowrap | pre-wrap | pre-line	
'width'	<length> | <percentage> | auto | inherit - supported for *inline*, *block-level*, and replaced elements (such as images, tables, table cells)	
'word-spacing'	NONE	
'z-index'	NONE	

<length> - Refers to distance measurements and is expressed in units such as `mm`, `cm`, `in`, `em`, `rem`, `ex`, `pc`, `pt`, `px`. For more information, see the W3 CSS Level 3 length type specifications.

Related Information:

Oxygen XML Editor plugin CSS Extensions on page 1332

Transparent Colors

CSS3 supports RGBA colors. The RGBA declaration allows you to set opacity (via the Alpha channel) as part of the color value. A value of `0` corresponds to a completely transparent color, while a value of 1 corresponds to a completely opaque color. To specify a value, you can use either a *real* number between `0` and 1, or a percent.

Example: RGBA Color

```
personnel:before {
    display:block;
    padding: 1em;
    font-size: 1.8em;
    content: "Employees";
    font-weight: bold;
    color:#EEEEEE;
    background-color: rgba(50, 50, 50, 0.6);
}
```

`attr()` Function: Properties Values Collected from the Edited Document

In CSS Level 2.1 you may collect attribute values and use them as content *only* for the pseudo-elements. For instance, the `:before` pseudo-element can be used to insert some content before an element. This is valid in CSS 2.1:

```
title:before{
  content: "[Audience Level: " attr(audience) "]";
}
```

If the `title` element from the XML document is:

```
<title audience="Expert">Changing the Timing Belt</title>
```

Then the title will be displayed as:

```
[Audience Level: Expert] Changing the Timimg Belt
```

In Oxygen XML Editor plugin, the use of `attr()` function is available not only for the `content` property, but also for any other property. This is similar to the CSS Level 3 working draft: http://www.w3.org/TR/2006/WD-css3-values-20060919/#functional. The arguments of the function are:

`attr ( attribute_name , attribute_type , default_value )`

`attribute_name`

The attribute name. This argument is required.

`attribute_type`

The attribute type. This argument is optional. If it is missing, argument's type is considered `string`. This argument indicates what is the meaning of the attribute value and helps to perform conversions of this value. Oxygen XML Editor plugin accepts one of the following types:

`color`

The value represents a color. The attribute may specify a color in various formats. Oxygen XML Editor plugin supports colors specified either by name (`red`, `blue`, `green`, etc.) or as an RGB hexadecimal value `#FFEEFF`.

`url`

The value is a URL pointing to a media object. Oxygen XML Editor plugin supports only images. The attribute value can be a complete URL, or a relative one to the XML document. Note that this URL is also resolved through the catalog resolver.

`integer`

The value must be interpreted as an integer.

`number`

The value must be interpreted as a float number.

`length`

The value must be interpreted as an integer.

`percentage`

The value must be interpreted relative to another value (length, size) expressed in percents.

`em`

The value must be interpreted as a size. 1 em is equal to the *font-size* of the relevant font.

`ex`

The value must be interpreted as a size. 1 ex is equal to the *height* of the **x** character of the relevant font.

`px`

The value must be interpreted as a size expressed in pixels relative to the viewing device.

`mm`

The value must be interpreted as a size expressed in millimeters.

`cm`

The value must be interpreted as a size expressed in centimeters.

`in`

The value must be interpreted as a size expressed in inches. 1 inch is equal to 2.54 centimeters.

`pt`

The value must be interpreted as a size expressed in points. The points used by CSS2 are equal to 1/72th of an inch.

pc

The value must be interpreted as a size expressed in picas. 1 pica is equal to 12 points.

default_value

This argument specifies a value that is used by default if the attribute value is missing. This argument is optional.

Example: *attr* Function

Consider the following XML instance:

```
<sample>
   <para bg_color="#AAAAFF">Blue paragraph.</para>
   <para bg_color="red">Red paragraph.</para>
   <para bg_color="red" font_size="2">Red paragraph with large font.</para>
   <para bg_color="#00AA00" font_size="0.8" space="4">
        Green paragraph with small font and margin.</para>
</sample>
```

The `para` elements have `bg_color` attributes with RGB color values (such as #AAAAFF). You can use the `attr()` function to change the elements appearance in the editor based on the value of this attribute:

```
background-color:attr(bg_color, color);
```

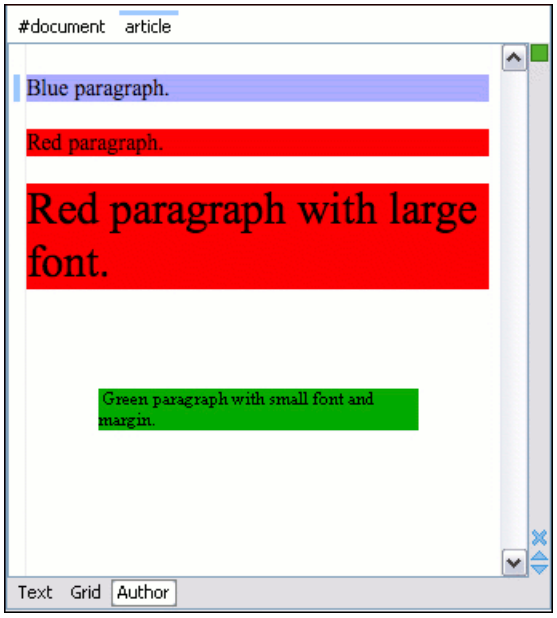
The attribute `font_size` represents the font size in *em* units. You can use this value to change the style of the element:

```
font-size:attr(font_size, em);
```

The complete CSS rule is:

```
para{
 display:block;
 background-color:attr(bg_color, color);
 font-size:attr(font_size, em);
 margin:attr(space, em);
}
```

The document is rendered as:



Oxygen XML Editor plugin CSS Extensions

CSS stylesheets provide support for displaying documents. When editing non-standard documents, Oxygen XML Editor plugin CSS extensions are useful.

Examples of how they can be used:

- Property for marking *foldable elements* in large files.
- Enforcing a display mode for the XML tags, regardless of the current mode selected by the user.
- Constructing a URL from a relative path location.
- String processing functions.

Built-in CSS Selectors

When Oxygen XML Editor plugin renders content in the **Author** mode, it adds built-in CSS selectors (in addition to the CSS stylesheets linked in the XML or specified in the document type associated to the XML document). These built-in CSS selectors are processed before all other CSS content, but they can be overwritten if the CSS developer wants to modify a default behavior.

List of CSS Selector Contributed by Oxygen XML Editor plugin

```
@namespace oxy "http://www.oxygenxml.com/extensions/author";
@namespace xi "http://www.w3.org/2001/XInclude";
@namespace xlink "http://www.w3.org/1999/xlink";
@namespace svg "http://www.w3.org/2000/svg";
@namespace mml "http://www.w3.org/1998/Math/MathML";

oxy|document {
    display:block !important;
}

oxy|cdata {
    display:-oxy-morph !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|processing-instruction {
    display:-oxy-morph !important;
    color: rgb(139, 38, 201) !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|processing-instruction[Pub],
oxy|processing-instruction[PubTbl],
oxy|processing-instruction[xm-replace_text],
oxy|processing-instruction[xm-deletion_mark],
oxy|processing-instruction[xm-insertion_mark_start],
oxy|processing-instruction[xm-insertion_mark_end],
oxy|processing-instruction[xml-model],
oxy|processing-instruction[xml-stylesheet]
{
    display:none !important;
}

oxy|comment {
    display:-oxy-morph !important;
    color: rgb(0, 100, 0) !important;
    background-color:rgb(255, 255, 210) !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|reference:before,
oxy|entity[href]:before{
  link: attr(href) !important;
  text-decoration: underline !important;
  color: navy !important;

  margin: 2px !important;
  padding: 0px !important;
  margin-right:0px !important;
  padding-right:2px !important;
}

oxy|reference:before {
  display: -oxy-morph !important;
  content: url(../images/editContent.gif) !important;
}

oxy|entity[href]:before{
  display: -oxy-morph !important;
  content: url(../images/editContent.gif) !important;
}

oxy|reference,
```

```
oxy|entity {
    -oxy-editable:false !important;
    background-color: rgb(240, 240, 240) !important;
    margin:0px !important;
    padding: 0px !important;

}

oxy|reference {
    display:-oxy-morph !important;
    /*EXM-28674 No need to present tags for these artificial references.*/
    -oxy-display-tags: none;
}

oxy|entity {
    display:-oxy-morph !important;
}

oxy|entity[name='amp'],
oxy|entity[name='lt'],
oxy|entity[name='gt'],
oxy|entity[name='quot'],
oxy|entity[name='apos']{
    /*EXM-32236, EXM-37026 Do not present tags for
simple character entity references.*/
    -oxy-display-tags: none;
}

oxy|entity[href] {
  border: 1px solid rgb(175, 175, 175) !important;
  padding: 0.2em !important;
}

xi|include {
    display:-oxy-morph !important;
    margin-bottom: 0.5em !important;
    padding: 2px !important;
}
xi|include:before,
xi|include:after{
    display:inline !important;
    background-color:inherit !important;
    color:#444444 !important;
    font-weight:bold !important;
}

xi|include:before {
    content:url(../images/link.png) attr(href)  !important;
    link: attr(href) !important;
}
xi|include[parse="text"]:before {
    content:url(../images/link.png) !important;
}
xi|include[xpointer]:before {
    content:url(../images/link.png) attr(href) " " attr(xpointer) !important;
    link: oxy_concat(attr(href), "#", attr(xpointer)) !important;
}

xi|fallback {
    display:-oxy-morph !important;
    margin: 2px !important;
    border: 1px solid #CB0039 !important;
}

xi|fallback:before {
    display:-oxy-morph !important;
    content:"XInclude fallback: " !important;
    color:#CB0039 !important;
}

oxy|doctype {
    display:block !important;
    background-color: transparent !important;
    color:blue !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 2px !important;
}

@media oxygen-high-contrast-black, oxygen-dark-theme{
    oxy|doctype {
        color:#D0E2F4 !important;
    }
}

oxy|error {
    display:-oxy-morph !important;
    -oxy-editable:false !important;
    white-space:pre !important;
    font-weight:bold !important;
    color: rgb(178, 0, 0) !important;
    -oxy-display-tags: none;
}

oxy|error:before {
```

```
    content:url(../images/ReferenceError.png) "[" !important;
    color: rgb(178, 0, 0) !important;
}
oxy|error[level='warn']:before {
    content:url(../images/ReferenceWarn.png) "[" !important;
    color: rgb(200, 185, 0) !important;
}

oxy|error[level='warn'] {
    color: rgb(200, 185, 0) !important;
}

oxy|error:after {
    content:"]" !important;
}


*[xlink|href]:before {
    content:url(../images/link.png);
    link: attr(xlink|href) !important;
}


/*No direct display of the MathML and SVG images.*/
svg|svg{
 display:inline !important;
    white-space: -oxy-trim-when-ws-only !important;
}

svg|svg * {
    display:none !important;
    white-space:normal !important;
}

mml|math{
 display:inline !important;
    white-space: -oxy-trim-when-ws-only !important;
}
mml|math mml|*{
    display:none !important;
    white-space: normal !important;
}

/*Text direction attributes*/
*[dir='rtl'] { direction:rtl; unicode-bidi:embed; }
*[dir='rlo'] { direction:rtl; unicode-bidi:bidi-override; }

*[dir='ltr'] { direction:ltr; unicode-bidi:embed; }
*[dir='lro'] { direction:ltr; unicode-bidi:bidi-override; }

@media oxygen-high-contrast-black, oxygen-dark-theme{
    xi|include:before,
    xi|include:after{
        color:#808080 !important;
    }
}
```

Example:

To show all entities in the **Author** mode as transparent, without a gray background, first define in your CSS after all imports the namespace:

```
@namespace oxy "http://www.oxygenxml.com/extensions/author";
```

and then add the following selector:

```
oxy|entity {
    background-color: inherit !important;
}
```

Additional CSS Selectors

Oxygen XML Editor plugin provides support for selecting additional types of nodes. These custom selectors apply to: *document*, *doctype sections*, *processing-instructions*, *comments*, *CDATA sections*, *reference sections*, and *entities*. *Processing-instructions* are not displayed by default. To display them, open the **Preferences** dialog box , go to **Editor** > **Author**, and select **Show processing instructions**.

Note: The custom selectors are presented in the default CSS for **Author** mode and all of their properties are marked with an *!important* flag. For this reason, you have to set the *!important* flag on each property of the custom selectors from your CSS to be applicable.

For the custom selectors to work in your CSS stylesheets, declare the **Author** mode extensions namespace at the beginning of the stylesheet documents:

```
@namespace oxy url('http://www.oxygenxml.com/extensions/author');
```

- The `oxy|document` selector matches the entire document:

  ```
  oxy|document {
      display:block !important;
  }
  ```

- The following example changes the rendering of doctype sections:

  ```
  oxy|doctype {
      display:block !important;
      color:blue !important;
      background-color:transparent !important;
  }
  ```

- To match the processing instructions, you can use the `oxy|processing-instruction` selector:

  ```
  oxy|processing-instruction {
      display:block !important;
      color:purple !important;
      background-color:transparent !important;
  }
  ```

  A processing instruction usually has a target and one or more pseudo attributes:

  ```
  <?target_name data="b"?>
  ```

  You can match a processing instruction with a particular target from the CSS using the construct:

  ```
  oxy|processing-instruction[target_name]
  ```

  You can also match the processing instructions having a certain target and pseudo attribute value, such as:

  ```
  oxy|processing-instruction[target_name][data="b"]
  ```

- The XML comments display in **Author** mode can be changed using the `oxy|comment` selector:

  ```
  oxy|comment {
      display:block !important;
      color:green !important;
      background-color:transparent !important;
  }
  ```

- The `oxy|cdata` selector matches CDATA sections:

  ```
  oxy|cdata{
      display:block !important;
      color:gray !important;
      background-color:transparent !important;
  }
  ```

- The `oxy|entity` selector matches the entities content:

  ```
  oxy|entity {
      display:morph !important;
      editable:false !important;
      color:orange !important;
      background-color:transparent !important;
  }
  ```

  To match particular entities, use the `oxy|entity` selector in expressions such as:

  ```
  oxy|entity[name='amp'],
  oxy|entity[name='lt'],
  oxy|entity[name='gt'],
  oxy|entity[name='quot'],
  oxy|entity[name='apos'],
  oxy|entity[name^='#']{
      -oxy-display-tags: none;
  }
  ```

- The *references to entities*, *XInclude*, and *DITA conrefs* and *conkeyrefs* are expanded by default in **Author** mode and the referenced content is displayed. The referenced resources are displayed inside the element or entity that refers to them.

- You can use the `reference` property to customize the way these references are rendered in **Author** mode:

```
oxy|reference {
  border:1px solid gray !important;
}
```

In the **Author** mode, content is highlighted when text contains comments and changes (if *Track Changes* was active when the content was modified).

If this content is referenced, the **Author** mode does not display the highlighted areas in the new context. If you want to mark the existence of this comments and changes you can use the `oxy|reference[comments]`, `oxy|reference[changeTracking]`, and `oxy|reference[changeTracking][comments]` selectors.

Note: Two artificial attributes (`comments` and `changeTracking`) are set on the reference node, containing information about the number of comments and tracked changes in the content.

- The following example represents the customization of the reference fragments that contain comments:

```
oxy|reference[comments]:before {
  content: "Comments: " attr(comments) !important;
}
```

- To match reference fragments based on the fact that they contain tracked changes inside, use the `oxy|reference[changeTracking]` selector.

```
oxy|reference[changeTracking]:before {
  content: "Change tracking: " attr(changeTracking) !important;
}
```

- Here is an example of how you can set a custom color to the reference containing both tracked changes and comments:

```
oxy|reference[changeTracking][comments]:before {
  content: "Change tracking: " attr(changeTracking)
           " and comments: " attr(comments) !important;
}
```

Figure 670: Example: A Document Rendered Using these Rules

Additional CSS Properties

Oxygen XML Editor plugin offers an extension of the standard CSS properties suited for content editing.

Folding Elements: -oxy-foldable

Oxygen XML Editor plugin allows you to declare some elements to be *foldable*. This is especially useful when working with large documents organized in logical blocks, editing a large DocBook article or book, for instance. Oxygen XML Editor plugin marks the *foldable* content with a small blue triangle. When you hover with your mouse pointer over this marker, a dotted line borders the collapsible content. The following actions are available in the **Folding** submenu of the contextual menu:

Toggle Fold

Toggles the state of the current fold.

Collapse Other Folds (Ctrl + NumPad/ (Command + NumPad/ on OS X))

Folds all the elements except the current element.

Collapse Child Folds (Ctrl + NumPad- (Command + NumPad- on OS X))

Folds the elements indented with one level inside the current element.

Expand Child Folds (Ctrl + NumPad+ (Command + NumPad+ on OS X))

Unfolds all child elements of the currently selected element.

Expand All (Ctrl + NumPad* (Command + NumPad* on OS X))

Unfolds all elements in the current document.

To define the element whose content can be *folded* by the user, you must use the property: `-oxy-foldable:true;`. To define the elements that are *folded* by default, use the `-oxy-folded:true` property.

Note: The `-oxy-folded` property works in conjunction with the `-oxy-foldable` property. Thus, the `folded` property is ignored if the `-oxy-foldable` property is not set on the same element.

When collapsing an element, it is useful to keep some of its content visible (for example, a short description of the collapsed region). The property `-oxy-not-foldable-child` is used to identify the child element that is kept visible. It accepts as value an element name or a list of comma separated element names. The first child element from the XML document that appears in the list of element names will be identified as the not *foldable* child and displayed. If the element is marked as *foldable* (`-oxy-foldable:true;`) but it doesn't have the property `-oxy-not-foldable-child` or none of the specified *non-foldable* children exists, then the element is still *foldable*. In this case the element kept visible when *folded* will be the `before` pseudo-element.

Note: Deprecated properties `foldable`, `not-foldable-child`, and `folded` are also supported.

Example: Folding DocBook Elements

All the elements below can have a `title` child element and are considered to be logical sections. You mark them as being *foldable* leaving the `title` element visible.

```
set,
book,
part,
reference,
chapter,
preface,
article,
sect1,
sect2,
sect3,
sect4,
section,
appendix,
figure,
example,
table {
    -oxy-foldable:true;
    -oxy-not-foldable-child: title;
}
```

Placeholders for Empty Elements: -oxy-placeholder-content

Oxygen XML Editor plugin displays the element name as pseudo-content for empty elements if the **Show placeholders for empty elements** option is selected in the **Author** preferences page and there is no *before* or *after* content set in the CSS for this type of element. There are two CSS properties that can be used to control the placeholders (`-oxy-placeholder-content` and `-oxy-show-placeholder`).

`-oxy-placeholder-content` CSS Property

To control the displayed pseudo-content for empty elements, you can use the `-oxy-placeholder-content` CSS property.

The following example would change the `keyword` element to be displayed as `key`:

```
keyword{
    -oxy-placeholder-content:"key";
}
```

Note: This CSS property accepts the **${i18n(key)}** localization editor variable, as in the following example:

```
-oxy-placeholder-content:"${i18n(id)}";
```

`-oxy-show-placeholder` CSS Property

The `-oxy-show-placeholder` property allows you to decide whether or not the placeholder will be shown. The possible values are:

- `always` - Always display placeholders.
- `default` - Always display placeholders if *before* or *after* content are not set is CSS.
- `inherit` - The placeholders are displayed according to the **Show placeholders for empty elements** option (if `before` and `after` content is not declared).
- no - Never display placeholders.

Note: Deprecated properties `show-placeholder` and `placeholder-content` are also supported.

Read-only Elements: `-oxy-editable` property

If you want to inhibit editing a certain element content, you can set the `-oxy-editable` (deprecated property `editable` is also supported) CSS property to `false`.

Display Elements: `-oxy-morph` Value

Oxygen XML Editor plugin allows you to specify that an element has an `-oxy-morph` display type (deprecated `morph` property is also supported), meaning that the element is *inline* if all its children are *inline*.

Example: *-oxy-morph* Property Value

Suppose you have a **wrapper** XML element that allows users to set a number of attributes on all sub-elements. This element should have an *inline* or *block* behavior, depending on the behavior of its child elements:

```
wrapper{
 display:-oxy-morph;
}
```

Visibility Property: -oxy-collapse-text Value

Oxygen XML Editor plugin allows you to set the value of the `visibility` property to `-oxy-collapse-text`, meaning that the text content of that element is not rendered. If an element is marked as `-oxy-collapse-text` you are not able to position the cursor inside it and edit it. The purpose of `-oxy-collapse-text` is to make the text value of an element editable only through a form control.

Example: *visibility* Property

The text value of an XML element will be edited using a text field form control. In this case, we want the text content not to be directly present in the **Author** visual editing mode:

```
title{
 content: oxy_textfield(edit, '#text', columns, 40);
 visibility:-oxy-collapse-text;
}
```

Cyrillic Counters: -oxy-lower-cyrillic

Oxygen XML Editor plugin allows you to set the value of the `list-style-type` property to Cyrillic counters. For example, `-oxy-lower-cyrillic-ru`, `-oxy-lower-cyrillic-uk`, `-oxy-upper-cyrillic-ru` or `-oxy-upper-cyrillic-uk`, meaning that you can have Russian and Ukrainian counters.

Example: Cyrillic Counters

Counting list items with Cyrillic symbols:

```
li{
  display:list-item;
  list-style-type:-oxy-lower-cyrillic-ru;
}
```

Link Property: -oxy-link

Oxygen XML Editor plugin allows you to declare some elements to be *links*. This is especially useful when working with many documents that reference each other. The links allow for an easy way to get from one document to another. Clicking the link marker will open the referenced resource in an editor.

To define the element that should be considered a link, you must use the `link` property on the `before` or `after` pseudo element. The value of the property indicates the location of the linked resource. Since links are usually indicated by the value of an attribute in most cases it will have a value similar to `attr(href)`

Example: DocBook Link Elements

The following elements are defined to be links on the `before` pseudo element and their values are defined by the value of an attribute.

```
*[href]:before{
    -oxy-link:attr(href);
    content: "Click " attr(href) " for opening" ;
}

ulink[url]:before{
    -oxy-link:attr(url);
    content: "Click to open: " attr(url);
```

```
}

olink[targetdoc]:before{
    -oxy-link: attr(targetdoc);
    content: "Click to open: " attr(targetdoc);
}
```

Display Tag Markers: -oxy-display-tags

Oxygen XML Editor plugin allows you to choose whether tag markers of an element should never be presented or the current display mode should be respected. This is especially useful when working with `:before` and `:after` pseudo-elements, in which case the element range is already visually defined so the tag markers are redundant.

The property is named `-oxy-display-tags`, with the following possible values:

- *none* - Tags markers must not be presented regardless of the current display mode..
- *default* - The tag markers will be created depending on the current display mode..
- *inherit* - The value of the property is inherited from an ancestor element.

```
-oxy-display-tags
    Value: none | default | inherit
    Initial: default
    Applies to: all nodes(comments, elements, CDATA, etc.)
    Inherited: false
    Media: all
```

Example: *-oxy-display-tags* Property

In this example, the **para** element from DocBook uses a `:before` and `:after` element and its tag markers will not be visible.

```
para:before{
    content: "{";
}

para:after{
    content: "}";
}

para{
    -oxy-display-tags: none;
    display:block;
    margin: 0.5em 0;
}
```

Append Content Properties: `-oxy-append-content` / `-oxy-prepend-content`

`-oxy-append-content` Property

This property appends the specified content to the content generated by other matching CSS rules of lesser specificity. Unlike the `content` property, where only the value from the rule with the greatest specificity is taken into account, the `-oxy-append-content` property adds content to that generated by the lesser specificity rules into a new compound content.

Example:

```
element:before{
    content: "Hello";
}
element:before{
    -oxy-append-content: " World!";
}
```

The content shown before the `element` will be `Hello World!`.

`-oxy-prepend-content` Property

Prepends the specified content to the content generated by other matching CSS rules of lesser specificity. Unlike the `content` property, where only the value from the rule with the greatest specificity is taken into account, the `-oxy-prepend-content` prepends content to that generated by the lesser specificity rules into a new compound content.

Example:

```
element:before{
    content: "Hello!";
}
element:before{
    -oxy-prepend-content: "said: ";
}
element:before{
    -oxy-prepend-content: "I ";
}
```

The content shown before the `element` will be `I said: Hello!`.

Custom Colors for Element Tags: -oxy-tags-color

By default, Oxygen XML Editor plugin does not display element tags. You can use the **Partial Tags** button from the **Author** toolbar to control the amount of displayed markup.

To configure the default background and foreground colors of the tags, open the **Preferences** dialog box , go to **Editor** > **Edit modes** > **Author**, and set the desired colors in the **Tags background color** and **Tags foreground color** options.

If you want to be more specific and configure the colors using your CSS, the `-oxy-tags-background-color` and `-oxy-tags-color` properties allow you to control the background and foreground colors for any particular XML element.

Example:

```
para {
    -oxy-tags-color:white;
    -oxy-tags-background-color:green;
}
title {
    -oxy-tags-color:yellow;
    -oxy-tags-background-color:black;
}
```

Style Element Property: -oxy-style

Oxygen XML Editor plugin allows you to specify the style for an XML element. This is helpful if you want to embed CSS styling to XML elements directly in the XML file you are editing without having to edit the CSS files that are normally attached to the XML files. The property should have an XPath function for the value.

Example: *-oxy-style* Property

The following code snippet should be added in the CSS file that renders the files for your framework customization:

```
*{
   -oxy-style:attr(style);
}
```

Suppose you want to display the `title` elements in your XML document in the color red. You could add the following snippet directly in the XML document:

```
<title style="color:red;">My Memoirs</title>
```

Tip: The `style` attribute is supported by default in HTML5 documents.

Custom CSS Functions

The visual **Author** editing mode supports also a wide range of custom CSS extension functions.

`oxy_local-name()` Function
This function evaluates the local name of the current node.

It does not have any arguments.

Example: *oxy_local-name* Function

To insert the local name as static text content before the element, use this CSS selector:

```
*:before{
```

```
  content: oxy_local-name() ": ";
}
```

`oxy_name()` Function

This function evaluates the qualified name of the current node.

It does not have any arguments.

Example: *oxy_name* Function

To insert a qualified name as static text content before the element, use this CSS selector:

```
*:before{
  content: oxy_name() ": ";
}
```

`oxy_url()` Function

This function extends the standard CSS **url()** function by allowing you to specify additional relative path components (parameters **loc_1** to **loc_n**).

Oxygen XML Editor plugin uses all these parameters to construct an absolute location. Note that any of the parameters that are passed to the function can be either relative or absolute locations. These locations can be expressed as String objects, functions, or editor variables (built-in or custom).

Syntax:

`oxy_url ( base_location , loc_1 , loc_2 )`

base_location

String representing the base location. If not absolute, will be solved relative to the CSS file URL.

loc_1 ... loc_n (optional)

Strings representing relative location path components.

Examples: *oxy_url* Function

The following function receives String objects as input parameters:

```
oxy_url('http://www.oxygenxml.com/css/test.css', '../dir1/',
        'dir2/dir3/', '../../dir4/dir5/test.xml')
```

and returns:

```
'http://www.oxygenxml.com/dir1/dir4/dir5/test.xml'
```

The following function receives the result of the evaluation of two other functions as parameters (for instance, this is useful if you have image references and you want to see thumbnail images stored in the same folder):

```
image[href]{
 content:oxy_url(oxy_base-uri(), oxy_replace(attr(href),
    '.jpeg', 'Thumbnail.jpeg'));
}
```

The following function uses an editor variable as the first parameter to point to the Oxygen XML Editor plugin installation location:

```
image[href] {
    content: oxy_url('${oxygenHome}', 'logo.png');
}
```

Related Information:

Editor Variables on page 125

`oxy_base-uri()` Function

This function evaluates the base URL in the context of the current node.

It does not have any arguments and takes into account the `xml:base` context of the current node. See the XML Base specification for more details.

Example: *oxy_base-uri* Function

Suppose you have some image references but you want to see other thumbnail images that reside in the same folder (in **Author** mode):

```
image[href]{
 content:oxy_url(oxy_base-uri(), oxy_replace(attr(href),
    '.jpeg', 'Thumbnail.jpeg'));
}
```

`oxy_parent-url()` Function

This function evaluates the parent URL of a URL received as string.

Syntax:

`oxy_parent-url ( URL )`

URL

The URL as string.

`oxy_capitalize()` Function

This function capitalizes the first letter of the text received as argument.

Syntax:

`oxy_capitalize ( text )`

text

The text in which the first letter will be capitalized.

Example: *oxy_capitalize* Function

```
*:before{
  content: oxy_capitalize(oxy_name()) ": ";
}
```

This would insert the capitalized qualified name as static text content before the element.

`oxy_uppercase()` Function

This function transforms to upper case the text received as argument.

Syntax:

`oxy_uppercase ( text )`

text

The text to be capitalized.

Example: *oxy_uppercase* Function

To insert the upper-cased qualified name as static text content before the element, use this CSS selector:

```
*:before{
  content: oxy_uppercase(oxy_name()) ": ";
}
```

`oxy_lowercase()` Function

This function transforms to lower case the text received as argument.

Syntax:

`oxy_lowercase ( text )`

text

The text to be lower cased.

Example: *oxy_lowercase* Function

To insert a lower-cased qualified name as static text content before the element, use this CSS selector:

```
*:before{
  content: oxy_lowercase(oxy_name()) ": ";
}
```

`oxy_concat()` Function

This function concatenates the received string arguments.

Syntax:

`oxy_concat ( str_1 , str_2 )`

str_1 … str_n

The string arguments to be concatenated.

Example: *oxy_concat* Function

If an XML element has an attribute called **padding-left**:

```
<p padding-left="20">...
```

and you want to add a padding before it with that specific amount specified in the attribute value:

```
*[padding-left]{
 padding-left:oxy_concat(attr(padding-left), "px");
}
```

`oxy_replace()` Function

This function is used to replace a string of text.

The `oxy_replace()` function has two signatures:

Syntax 1:

`oxy_replace ( text , target , replacement )`

This function replaces each substring of the text that matches the literal target string with the specified literal replacement string.

text

The text in which the replace will occur.

target

The target string to be replaced.

replacement

The string replacement.

Example: Suppose that you have image references but you want to see other thumbnail images that reside in the same folder in the visual **Author** editing mode:

```
image[href]{
 content:oxy_url(oxy_base-uri(), oxy_replace(attr(href),
    '.jpeg', 'Thumbnail.jpeg'));
}
```

Syntax 2:

`oxy_replace ( text , target , replacement , isRegExp )`

This function replaces each substring of the text that matches the target string with the specified replacement string.

text

The text in which the replace will occur.

target

The target string to be replaced.

replacement

The string replacement.

isRegExp

If *true* the target and replacement arguments are considered regular expressions, if *false* they are considered literal strings.

Example: Suppose that you want to use a regular expression to replace all space sequences with an underscore:

```
image[title]{
 content:oxy_replace(attr(title), "\\s+", "_", true)
}
```

`oxy_unparsed-entity-uri()` Function

This function returns the URI value of an unparsed entity name.

Syntax:

`oxy_unparsed-entity-uri ( unparsedEntityName )`

unparsedEntityName

The name of an unparsed entity defined in the DTD.

This function can be useful to display images that are referenced with unparsed entity names.

Example: *oxy_unparsed-entity-uri* Function

CSS for displaying the image in Author for an *`imagedata`* with *`entityref`* to an unparsed entity:

```
imagedata[entityref]{
content: oxy_url(oxy_unparsed-entity-uri(attr(entityref)));
}
```

`oxy_attributes()` Function

This function concatenates the attributes for an element and returns the serialization.

Syntax:

`oxy_attributes ( )`

Example: *oxy_attributes* Function

```
element{
  content:oxy_attributes();
}
```

For instance, if you have the following XML fragment: `<element att1="x" xmlns:a="2" x="""/>`, the CSS function will display:

```
att1="x" xmlns:a="2" x=""""
```

`oxy_substring()` Function

This function is used to return a string of text.

The `oxy_substring()` function has two signatures:

Syntax 1:

`oxy_substring ( text , startOffset )`

Returns a new string that is a substring of the original **text** string. It begins with the character at the specified index and extends to the end of **text** string.

text

The original string.

startOffset

The beginning index, inclusive

Syntax 2:

`substring ( text , startOffset , endOffset )`

Returns a new string that is a substring of the original **text** string. The substring begins at the specified **startOffset** and extends to the character at index **endOffset** - 1.

text

The original string.

startOffset

The beginning index, inclusive.

endOffset

The ending index, exclusive.

Example: *oxy_substring* Function

`oxy_substring('abcd', 1)` returns the string `'bcd'`.

`oxy_substring('abcd', 4)` returns an empty string.

`oxy_substring('abcd', 1, 3)` returns the string `'bc'`.

If you only want to display part of an attribute value, for instance the part that comes before an **Appendix** string:

```
image[longdesc]{
 content: oxy_substring(attr(longdesc), 0,
          oxy_indexof(attr(longdesc), "Appendix"));
}
```

`oxy_getSomeText(text, length)` Function

This function allows you to truncate a long string and to set a maximum number of displayed characters.

Syntax:

`oxy_getSomeText ( text , length , endsWithPoints )`

text

Displays the actual text.

length

Sets the maximum number of characters that are displayed.

endsWithPoints

Specifies if the truncated text ends with ellipsis.

Example: *oxy_getSomeText* Function

If an attribute value is very large, you can trim its content before it is displayed as static content:

```
*[longdesc]:before{
  content: oxy_getSomeText(attr(longdesc), 200);
}
```

`oxy_indexof()` Function

This function is used to define searches.

The `oxy_indexof()` function has two signatures:

Syntax 1:

`oxy_indexof ( text , toFind )`

Returns the index within **text** string of the first occurrence of the **toFind** substring.

text

Text to search in.

toFind

The searched substring.

Syntax 2:

`oxy_indexof ( text , toFind , fromOffset )`

Returns the index within **text** string of the first occurrence of the **toFind** substring. The search starts from **fromOffset** index.

text

Text to search in.

toFind

The searched substring.

fromOffset

The index to start the search from.

Example: *oxy_indexof* Function

`oxy_indexof('abcd', 'bc')` returns 1.

`oxy_indexof('abcdbc', 'bc', 2)` returns 4.

If you only want to display part of an attribute value, for instance the part that comes before an **Appendix** string:

```
image[longdesc]{
 content: oxy_substring(attr(longdesc), 0,
          oxy_indexof(attr(longdesc), "Appendix"));
}
```

`oxy_lastindexof()` Function

This function is used to define last occurrence searches.

The `oxy_lastindexof()` function has two signatures:

Syntax 1:

`oxy_lastindexof ( text , toFind )`

Returns the index within **text** string of the rightmost occurrence of the **toFind** substring.

text

Text to search in.

toFind

The searched substring.

Syntax 2:

`oxy_lastindexof ( text , toFind , fromOffset )`

The search starts from **fromOffset** index. Returns the index within **text** string of the last occurrence of the **toFind** substring, searching backwards starting from the **fromOffset** index.

text

Text to search in.

toFind

The searched substring.

fromOffset

The index to start the search backwards from.

Example: *oxy_lastindexof* Function

`oxy_lastindexof('abcdbc', 'bc')` returns 4.

`oxy_lastindexof('abcdbccdbc', 'bc', 2)` returns 1.

If you only want to display part of an attribute value, for instance the part that comes before an **Appendix** string:

```
image[longdesc]{
 content: oxy_substring(attr(longdesc), 0,
          oxy_lastindexof(attr(longdesc), "Appendix"));
}
```

`oxy_xpath()` Function

This function is used to evaluate XPath expressions.

Syntax:

`oxy_xpath ( XPathExpression [ , processChangeMarkers , value ] [ , evaluate , value ])`

It evaluates the given XPath 2.0 expression using Saxon 9 and returns the result. XPath expressions that depend on the cursor location can be successfully evaluated only when the cursor is located in the actual XML content. Evaluation fails when the current editing context is inside a referenced **xi:include** section or inside artificially referenced content (for example, DITA `conref` or `topicref` references).

The parameters of the function are as follows:

- A required `expression` parameter, which is the XPath expression to be evaluated.
- An optional `processChangeMarkers` parameter, followed by its value, which can be either `true` or `false` (default value). When you set the parameter to `true`, the function returns the resulting text with all the change markers accepted (*delete* changes are removed and *insert* changes are preserved).
- An optional `evaluate` parameter, followed by its value, which can be one of the following:
  - `dynamic` - Evaluates the XPath each time there are changes in the document.
  - `dynamic-once` - Separately evaluates the XPath for each node that matches the CSS selector. It will not re-evaluate the expression when changes are made to other nodes in the document. This will lead to improved performance, but the displayed content may not be updated to reflect the actual document content.
  - `static` - If the same XPath is evaluated on several nodes, the result for the first evaluation will be used for all other matches. Use this only if the XPath does not contain a relationship with the node on which the CSS property is evaluated. This will lead to improved performance, but the static displayed content may not be updated to reflect the actual document content.

    Note: When XPath expressions are evaluated, the entities and `xi:include` elements are replaced with the actual content that is referenced. For example, consider the following code snippet:

    ```
    <article>
      <xi:include href="section1.xml" xmlns:xi="http://www.w3.org/2001/XInclude"/>
    </article>
    ```

    where `section1.xml` contains the following content:

    ```
    <section>
      <p>Referenced content</p>
    </section>
    ```

    The latter will be the actual content in which the XPath expression is executed.

Example: *oxy_xpath* Function

The following example counts the number of words from a paragraph (including *tracked changes*) and displays the result in front of it:

```
para:before{
  content:
   concat("|Number of words:",
    oxy_xpath(
        "count(tokenize(normalize-space(string-join(text(), '')), ' '))",
        processChangeMarkers,
       true),
    "| ");
}
```

Note: The `oxy_xpath()` function supports *editor variables*, as in the following example:

```
* {
    content:
    oxy_concat("Result: ",
        oxy_xpath('count(collection("${cfdu}/?select=*.xml"))')
    );
}
```

`oxy_action()` Function

This function allows you to define actions directly in the CSS, rather than referencing them from the associated framework.

The `oxy_action()` function is frequently used from the *oxy_button()* function.

The arguments received by the `oxy_action()` function are a list of properties that define an action. The following properties are supported:

- `name` - The name of the action. It will be displayed as the label for the button or menu item.
- `description` (optional) - A short description with details about the result of the action.
- `icon` (optional) - A path relative to the CSS pointing to an image (the icon for the action). The path can point to resources that are packed in Oxygen XML Editor plugin (`oxygen.jar`) by starting its value with `/` (for example, `/images/Remove16.png`). It can also be expressed as an *editor variable*.
- `operation` - The name of the Java class implementing the *ro.sync.ecss.extensions.api.AuthorOperation* interface. There is also a variety of predefined operations that can be used.

  Note: If the name of the operation specified in the CSS is not qualified (has no Java package name), then it is considered to be one of the built-in Oxygen XML Editor plugin operations from `ro.sync.ecss.extensions.commons.operations` package. If the class is not found in this package, then it will be loaded using the specified name.
- `arg-<string>` - All arguments with the `arg-` prefix are passed to the operation (the string that follows the `arg-` prefix is passed).
- `ID` - (optional) - The ID of the action from the *framework*. If this is specified, all others parameters are disregarded.

Example: *oxy_action* function inside an *oxy_button* form control:

```
oxy_button(
   action, oxy_action(
            name, 'Insert',
            description, 'Insert an element after the current one',
            icon, url('insert.png'),
            operation,
             'InsertFragmentOperation',
            arg-fragment, '<element>${caret}</element>',
            arg-insertLocation, '.',
            arg-insertPosition, 'After'),
            showIcon, true)
```

Example: *oxy_action* Function

You can also create a button form control directly from an `oxy_action` function:

```
oxy_action(
            name, 'Insert',
            description, 'Insert an element after the current one',
            operation, 'InsertFragmentOperation',
            arg-fragment, '<element>${caret}</element>',
            arg-insertLocation, '.',
            arg-insertPosition, 'After')
```

Tip: A code template is available to make it easy to add the `oxy_action` function with the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_action` code template.

Related Information:

Button Form Control on page 1358
The `oxy_button` built-in form control is used for graphical user interface objects that invoke a custom **Author** mode action (defined in the associated Document Type) referencing it by its ID, or directly in the CSS.

`oxy_action_list()` Function

This function allows you to define a sequential list of actions directly in the CSS, rather than referencing them from the associated framework.

The `oxy_action_list()` function is used from the *oxy_buttonGroup()* function.

The arguments received by the `oxy_action_list()` function are a list of actions (executed sequentially) that are defined with the *oxy_action()* function. The following properties are supported in the `oxy_action_list()` function:

- `name` - The name of the action. The name of the first defined action will be displayed as the label for the button or menu item.
- `description` (optional) - A short description with details about the result of the action. The description of the first defined action will be displayed in a tooltip.

- `icon` (optional) - A path relative to the CSS pointing to an image (the icon for the action). The path can point to resources that are packed in Oxygen XML Editor plugin (`oxygen.jar`) by starting its value with `/` (for example, `/images/Remove16.png`). It can also be expressed as an *editor variable*.
- `operation` - The name of the Java class implementing the *ro.sync.ecss.extensions.api.AuthorOperation* interface. There is also a variety of predefined operations that can be used.

  Note: If the name of the operation specified in the CSS is not qualified (has no Java package name), then it is considered to be one of the built-in Oxygen XML Editor plugin operations from `ro.sync.ecss.extensions.commons.operations` package. If the class is not found in this package, then it will be loaded using the specified name.
- `arg-<string>` - All arguments with the `arg-` prefix are passed to the operation (the string that follows the `arg-` prefix is passed).
- `ID` - (optional) - The ID of the action from the *framework*. If this is specified, all others parameters are disregarded.

Example: *oxy_action_list* Function

```
oxy_action_list(
  oxy_action(
    name, 'Insert',
    description,
        'Insert an element after the current one',
    operation, InsertFragmentOperation,
    arg-fragment, '<element></element>',
    arg-insertLocation, '.',
    arg-insertPosition, 'After'
  ),
  oxy_action(
    name, 'Delete',
    description, 'Deletes the current element',
    operation, DeleteElementOperation
  )
)
```

Tip: A code template is available to make it easy to add the `oxy_action_list` function with the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_action_list` code template.

Related Information:

oxy_action() Function on page 1349
This function allows you to define actions directly in the CSS, rather than referencing them from the associated framework.

Button Group Form Control on page 1359
The `oxy_buttonGroup` built-in form control is used for a graphical user interface group of buttons that invokes one of several custom **Author** mode actions (defined in the associated Document Type) referencing it by its ID, or directly in the CSS.

`oxy_compound_action()` Function

This function allows you to define multiple actions that will be executed sequentially.

The `oxy_compound_action()` function is used from the *oxy_button()* form control function.

The arguments received by the `oxy_compound_action()` function are a list of actions (executed sequentially) that are defined with the *oxy_action()* function.

You can use three optional properties (`name`, `description`, `icon`) in the `oxy_compound_action()` function to provide labels for the compound action. If you do not specify these three properties, those same properties defined in the first *oxy_action* function will be used for the labels.

- `name` - The name of the action. It will be displayed as the label for the action. If you want to reuse the name of an action already defined in your framework, you can use the *oxy_getActionName* function.
- `description` - A short description with details about the result of the action. It will be displayed in a tooltip when hovering over the button linked to this action. If you want to reuse the description of an action already defined in your framework, you can use the *oxy_getActionDescription* function.
- `icon` - A path relative to the CSS pointing to an image (the icon for the action). The path can point to resources that are packed in Oxygen XML Editor plugin (`oxygen.jar`) by starting its value with `/` (for

example, `/images/Remove16.png`). It can also be expressed as an *editor variable*. If you want to reuse the icon of an action already defined in your framework, you can use the *oxy_getActionIcon* function.

The *oxy_getActionName*, *oxy_getActionDescription*, and *oxy_getActionIcon* functions accept the following 2 parameters:

- `framework.defined.action.id` (required) - The ID of an action defined in the current framework that gets the name, description, or icon for that action.
- `fallback` (optional) - A fallback value in case the ID value provided in the `framework.defined.action.id` parameter is not found.

Example: *oxy_compound_action* Function

```
oxy_button(
  action, oxy_compound_action(
        name, oxy_getActionName('framework.id', 'Fallback'),
        description, 'Inserts a paragraph and uses form controls to edit its @audience attribute',
        icon, url('http://www.oxygenxml.com/img/icn_oxy20.png'),
       oxy_action(
         name, 'Insert',
         description, 'Insert an element after the current one',
         operation, 'ro.sync.ecss.extensions.commons.operations.InsertFragmentOperation',
         icon, url('insert.png'),
         arg-fragment, '<p audience=''></p>',
         arg-insertLocation, '.',
         arg-insertPosition, 'After'
       ),
       oxy_action(
         name, 'Activate edit mode',
         description, 'Sets a pseudo class that will activate a CSS rule that will
                       present a text field form control for the @audience attribute',
         operation, 'SetPseudoClassOperation',
         arg-name, 'edit-mode-on',
         arg-elementLocation , '.',
       )
   ),
  showIcon, true)
```

Tip: A code template is available to make it easy to add the `oxy_compound_action` function with the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_action_list` code template.

Related Information:

oxy_action() Function on page 1349
This function allows you to define actions directly in the CSS, rather than referencing them from the associated framework.

Button Form Control on page 1358
The `oxy_button` built-in form control is used for graphical user interface objects that invoke a custom **Author** mode action (defined in the associated Document Type) referencing it by its ID, or directly in the CSS.

`oxy_label()` Function

This function can be used in conjunction with the CSS `content` property to change the style of generated text.

The arguments of the function are *property name* - *property value* pairs. The following properties are supported:

- `text` - This property specifies the built-in form control you are using.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `background-color` - Specifies the background color of the form control. If the value of the `background-color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `styles` - Specifies styles for the form control. The values of this property are a set of CSS properties:
  - `font-weight`, `font-size`, `font-style`, `font`
  - `text-align`, `text-decoration`
  - `width`
  - `color`, `background-color`

- `link` - For more information about this property see the *link* property section.

```
element{
    content: oxy_label(text, "Label Text", styles,
      "font-size:2em;color:red;link:attr(href);");
}
```

Instead of using the values of the `styles` property individually, you can define them in a CSS file as in the following example:

```
* {
    width: 40%;
    text-align:center;
}
```

Then refer that file with an `@import` directive, as follows:

```
elem {
  content: oxy_label(text, 'my_label', styles, "@import 'labels.css';")
}
```

CAUTION: Extensive use of the `styles` property may lead to performance issues.

If the text from an `oxy_label()` function contains new lines, for example `oxy_label(text, 'LINE1\A LINE2', width, 100px)`, the text is split in two. Each of the two new lines has the specified width of 100 pixels.

Note: The text is split after `\A`, which represents a new line character.

You can use the `oxy_label()` function together with a built-in form control function to create a form control based layouts.

Example: *oxy_label* Function

An example of a use case is if you have multiple attributes on a single element and you want use form controls on separate lines and style them differently. Consider the following CSS rule:

```
person:before {
  content: "Name:*" oxy_textfield(edit, '@name', columns, 20)
    "\A Address:" oxy_textfield(edit, '@address', columns, 20)
}
```

Suppose you only want the **Name** label to be set to **bold**, while you want both labels aligned to look like a table (the first column with labels and the second with a text field). To achieve this, you can use the `oxy_label()` to style each label differently.

```
person:before {
 content: oxy_label(text, "Name:*", styles, "font-weight:bold;width:200px")
          oxy_textfield(edit, '@name', columns, 20) "\A "
          oxy_label(text, "Address:", styles, "width:200px")
          oxy_textfield(edit, '@address', columns, 20)
}
```

Tip: A code template is available to make it easy to add the `oxy_label` function with the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_label` code template..

`oxy_link-text()` Function

You can use this function on the CSS `content` property to obtain a text description from the source of a reference.

By default, the `oxy_link-text()` function resolves DITA and DocBook references. For further details about how you can also extend this functionality to other *frameworks*, go to Configuring an Extensions Bundle.

DITA Support

For DITA, the `oxy_link-text()` function resolves the `xref` element and the elements that have a `keyref` attribute. The text description is the same as the one presented in the final output for those elements. If you use this function for a `topicref` element that has the `navtitle` and `locktitle` attributes set, the function returns the value of the `navtitle` attribute.

DocBook Support

For DocBook, the `oxy_link-text()` function resolves the `xref` element that defines a link in the same document. The text description is the same as the one presented in the final output for those elements.

Example: *oxy_link-text* Function

For the following XML and associated CSS fragments the `oxy_link-text()` function is resolved to the value of the `xreflabel` attribute.

```
<para><code id="para.id" xreflabel="The reference label">my code</code>
      </para>
<para><xref linkend="para.id"/></para>
```

```
xref {
    content: oxy_link-text();
}
```

If the text from the target cannot extracted (for instance, if the `href` is not valid), you can use an optional argument to display fallback text.

```
*[class~="map/topicref"]:before{
    content: oxy_link-text("Cannot find the topic reference");
    link:attr(href);
}
```

`oxy_unescapeURLValue(string)` Function
This function returns the unescaped value of a URL-like string given as a parameter.

For example, if the value contains `%20` it will be converted to a simple space character.

Example: *oxy_unescapeURLValue* Function

`oxy_unescapeURLValue("http://www.example.com/a%20simple%20example.html")` returns the following value:

```
http://www.example.com/a simple example.html
```

Arithmetic Functions
Arithmetic Functions that are supported.

You can use any of the arithmetic functions implemented in the *java.lang.Math* class (http://download.oracle.com/javase/6/docs/api/java/lang/Math.html).

In addition, the following functions are available:

Syntax	Details
oxy_add (*param1*, ... , *paramN*, *'returnType'*)	Adds the values of all parameters from *param1* to *paramN*.
oxy_subtract (*param1*, *param2*, ... , *paramN*, *'returnType'*)	Subtracts the values of parameters *param2* to *paramN* from *param1*.
oxy_multiply (*param1*, ... , *paramN*, *'returnType'*)	Multiplies the values of parameters from *param1* to *paramN*.
oxy_divide (*param1*, *param2*, *'returnType'*)	Performs the division of *param1* to *param2*.
oxy_modulo (*param1*, *param2*, *'returnType'*)	Returns the reminder of the division of *param1* to *param2*.

Note: The *returnType* can be *'integer'*, *'number'*, or any of the supported CSS measuring types.

Example: *oxy_multiply* Function

If you have an image with **width** and **height** specified on it, this will compute the number of pixels on it:

```
image:before{
 content: "Number of pixels: " oxy_multiply(attr(width), attr(height), "px");
}
```

Form Controls

Oxygen XML Editor plugin provides a variety of built-in form controls that allow users to interact with documents with familiar user interface objects. For customization purposes, Oxygen XML Editor plugin also supports custom form controls in Java.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Related Information:
Dynamically Add Form Controls Using a Styles Filter on page 1387

Audio File Player Form Control
The `oxy_audio` built-in form control is used for providing a mechanism to play audio clips.

The `oxy_audio` form control supports the following properties:

- `href` - The absolute or relative location of a resource. This property is mandatory. Relative values are resolved relative to the CSS. If you have media resources relative to the XML document, you can specify their paths like this:

  ```
  oxy_audio(href, oxy_url(oxy_base-uri(), 'ex.mp3')), width, 400px)
  ```

- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units.

Example: *oxy_audio* Form Control

```
object {
    content:
        oxy_audio(
            href, 'resources/audio.mp3',
            width, 200px),
}
```

Tip: To insert a sample of the `oxy_audio` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_audio` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Browser Form Control
The `oxy_browser` built-in form control is used for providing a mechanism to integrate HTML frames or interact with SVG documents directly in the **Author** mode editor. It can also be used to load HTML that executes JavaScript and from that JavaScript you can access the Oxygen XML Editor plugin workspace.

The `oxy_browser` form control supports the following properties:

- `href` - The absolute or relative location of a resource. This property is mandatory. Relative values are resolved relative to the CSS. If you have media resources relative to the XML document, you can specify their paths like this:

  ```
  oxy_browser(href, oxy_url(oxy_base-uri(), 'ex.svg')), width, 50%, height, 50%)
  ```

- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units.
- `height` - Specifies the height of the form control area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units.

Example: *oxy_browser* Form Control

```
object {
  content:
    oxy_browser(
      href, 'http://example.page',
      width, 600px,
      height, 400px),
```

```
}
```

Tip: To insert a sample of the `oxy_browser` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_browser` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

Interacting with the Oxygen XML Editor plugin Workspace

The `oxy_browser` form control also provides the possibility of creating custom form control without having to use the Java-based API. You can use the `oxy_browser` form control to load HTML that executes JavaScript. In the JavaScript, you can use some predefined global variables that provide a gateway between the JavaScript and the Oxygen XML Editor plugin Java API. This allows you to perform changes in the document, open resources, and more, solely from the JavaScript.

Important: This will only work if the loaded HTML is located inside a framework or plugin directory, such as: *[OXYGEN_INSTALL_DIR]*`/frameworks/` or *[OXYGEN_INSTALL_DIR]*`/plugins/`.

The following global variables can be used:

- **authorAccess** - This object is an instance of *ro.sync.ecss.extensions.api.AuthorAccess*.
- **contextElement** - An instance of ro.sync.ecss.extensions.api.node.AuthorNode. The form control is added over this node.
- **pluginWorkspace** - An instance of ro.sync.exml.workspace.api.standalone.StandalonePluginWorkspace.
- **fcArguments** - A `java.util.Map` implementation with the properties (name and value pairs) passed on the form control function.
- **apiHelper** - A helper object for creating Java objects. It allows you to create Java objects from within the JavaScript code. These objects can then be passed to the Java methods as in the following example:

```
var newAttrValue = apiHelper.newInstance(
          "ro.sync.ecss.extensions.api.node.AttrValue",
          ["normalizedValue", "rawValue", true]);
authorAccess.getDocumentController().setAttribute(
        "counter", newAttrValue, contextElement);
...
```

You can also specify the constructor signature:

```
var newAttrValue = apiHelper.newInstance(
        "ro.sync.ecss.extensions.api.node.AttrValue
        (java.lang.String, java.lang.String, boolean)",
        ["normalizedValue", "rawValue", true]);
authorAccess.getDocumentController().setAttribute(
        "counter", newAttrValue, contextElement);
...
```

For more information, open the `form-controls.xml` file in the ***[OXYGEN_INSTALL_DIR]*/samples/form-controls** directory and go to section **11.1 - Interacting with the Oxygen Workspace**.

Warning: On Mac OS X, you need to use asynchronous calls to our API, due to the following JDK bug: https://bugs.openjdk.java.net/browse/JDK-8087465. By default, the API is called synchronously, but you can change this behavior for each API object by calling two methods: **sync()** and **async()**.

```
// By default, the methods are invoke synchronously.
var ctrl = authorAccess.getDocumentController();
try {
  // On Mac, methods that change the document must be executed asynchronously.
  ctrl.async();
  ctrl.setAttribute("counter", newAttrValue, contextElement);
} finally {
  ctrl.sync();
}
```

Listening for Changes in the Document

If the form control presents some information from the document (for example, the value of an attribute), then it needs to be notified on changes in the document so that it can update that information. To do this, follow these steps:

1. In the JavaScript, the **`bridgeReady()`** method is invoked as soon as the form control is loaded and our API bridge is installed. This is where you can add a listener:

```
function bridgeReady () {
  // We declare a member function for each method of the
  // ro.sync.ecss.extensions.api.AuthorListener interface (same function signature)
  var handler = {
    attributeChanged : function(event) {
      var node = event.getOwnerAuthorNode();
      var attrName = event.getAttributeName();

      if (node.equals(contextElement) && attrName === "counter") {
        init();
      }
    },
    contentDeleted : function(event) {},
    contentInserted : function(event) {}
  };

  // We create a proxy over an ro.sync.ecss.extensions.api.AuthorListener that will
  // delegate its methods to the JS object's functions.
  // We assign the listener to a global variable so that we can remove it later on,
  // on the dispose() method.
  authorDocumentListener = apiHelper.createProxyListener(
      "ro.sync.ecss.extensions.api.AuthorListener", handler);

  var ctrl = authorAccess.getDocumentController();

  // Add the proxy listener.
  ctrl.addAuthorListener(authorDocumentListener);
}
```

2. Since a listener was added on the document, it is important to remove it once the form control is not used anymore. When a form control is discarded, you can call the **`dispose()`** method from the JavaScript. This is where the previously created listener can be removed:

```
/**
 * The form control will not be used anymore. Clean up.
 */
function dispose() {
  // Dispose all added listeners.
  var ctrl = authorAccess.getDocumentController();
  ctrl.removeAuthorListener(authorDocumentListener);
}
```

Debugging JavaScript Used for Custom Form Controls

If you encounter unexpected results when using the method described above, you can debug the script by using the following guidelines:

- Calls to `alert("message.to.present")` or `console.log("message.to.present")` will be presented in the Results panel.
- You can install the **Firebug** extension by executing the following script:

```
{code:javascript}
function installFB() {
  if (!document.getElementById('FirebugLite')) {
    E = document['createElement' + 'NS'] && document.documentElement.namespaceURI;
    E = E ? document['createElement' + 'NS'](E, 'script')
          : document['createElement']('script');
    E['setAttribute']('id', 'FirebugLite');
    E['setAttribute']('src',
                      'https://getfirebug.com/' + 'firebug-lite.js' + '#startOpened');
    E['setAttribute']('FirebugLite', '4');
    (document['getElementsByTagName']('head')[0]
          || document['getElementsByTagName']('body')[0]).appendChild(E);
    E = new Image;
    E['setAttribute']('src', 'https://getfirebug.com/' + '#startOpened');
  }
}
{code}
```

Note: To force the *Browser Form Control* to reload after making changes to the JavaScript file, you need to use the **Reload page** action from the form control's contextual menu.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Button Form Control
The `oxy_button` built-in form control is used for graphical user interface objects that invoke a custom **Author** mode action (defined in the associated Document Type) referencing it by its ID, or directly in the CSS.

The `oxy_button` form control supports the following properties:

- `actionContext` - Specifies the context in which the action associated with the form control is executed. Its possible values are `element` (default value) and `caret`. If you select the `element` value, the context is the element that holds the form control. If you select the `caret` value, the action is invoked at the cursor location. If the cursor is not inside the element that holds the form control, the `element` value is selected automatically.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `actionID` - The ID of the action, specified in the *document type association*, that is invoked when you click the button.

  Note: The element that contains the form control represents the context where the action is invoked.
- `action` - Defines an action directly, rather than using the `actionID` parameter to reference an action from the *document type association*. This property is defined using the *oxy_action* function.

  Tip: You can also create a button form control directly from an *oxy_action* function.

  ```
  oxy_button(action, oxy_action(
            name, 'Insert',
            description, 'Insert an element after the current one',
            icon, url('insert.png'),
            operation, 'InsertFragmentOperation',
            arg-fragment, '<element>${caret}</element>',
            arg-insertLocation, '.',
            arg-insertPosition, 'After'
  ))
  ```

  Tip: To execute multiple actions sequentially, you can use the *oxy_compound_action* function.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `transparent` - Flattens the aspect of the button form control, removing its border and background. The values of this property can be `true` or `false` (default value).
- `showText` - Specifies if the action text should be displayed on the button form control. If this property is missing then the button displays the icon only if it is available, or the text if the icon is not available. The values of this property can be `true` or `false`.

  ```
  element {
    content: oxy_button(actionID, 'remove.attribute', showText, true);
  }
  ```
- `showIcon` - Specifies if the action icon should be displayed on the button form control. If this property is missing then the button displays the icon only if it is available, or the text if the icon is not available. The values of this property can be `true` or `false`.

  ```
  element {
    content: oxy_button(actionID, 'remove.attribute', showIcon, true);
  }
  ```
- `enableInReadOnlyContext` - To enable button form controls or groups of buttons form controls this property needs to be set to `true`. This property can be used to specify areas as *read-only* (by setting the `-oxy-editable` property to `false`). This is useful when you want to use an action that does not modify the context.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

  ```
  p:before {
    content: oxy_button(hoverPseudoclassName, 'showBorder')
  }
  p:showBorder {
  ```

```
  border: 1px solid red;
}
```

Example: *oxy_button* Form Control

```
button:before {
  content: "Label:"
     oxy_button(
         /* This action is declared in the document type
            associated with the XML document. */
         actionID, "insert.popupWithMultipleSelection");
}
```

Tip: To insert a sample of the `oxy_button` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_button` code template. Also, an `oxy_button_in_place_action` code template is available that inserts an `oxy_button` function that includes an `action` parameter.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Button Group Form Control
The `oxy_buttonGroup` built-in form control is used for a graphical user interface group of buttons that invokes one of several custom **Author** mode actions (defined in the associated Document Type) referencing it by its ID, or directly in the CSS.

The `oxy_buttonGroup` form control supports the following properties:

- `actionIDs` - The IDs of the actions that will be presented in the group of buttons.
- `actionID` - The ID of the action, specified in the *document type association*, that is invoked when you click the button.

  Note: The element that contains the form control represents the context where the action is invoked.
- `actions` - Defines a sequential list of actions directly, rather than using the `actionID` parameter to reference actions from the *document type association*. This property is defined using the *oxy_action_list* function.

  ```
  oxy_buttonGroup(
      label, 'A group of actions',
      icon, url('http://www.oxygenxml.com/img/icn_oxy20.png'),
      actions,
        oxy_action_list(
            oxy_action(
                  name, 'Insert',
                  description, 'Insert an element after the current one',
                  operation, 'InsertFragmentOperation',
                  arg-fragment, '<element></element>',
                  arg-insertLocation, '.',
                  arg-insertPosition, 'After'
            ),
            oxy_action(
                  name, 'Delete',
                  description, 'Deletes the current element',
                  operation, 'DeleteElementOperation'
            )
        )
    )
  ```

  Tip: A code template is available to make it easy to add the `oxy_action_list` function.
- `label` - Specifies the label to be displayed on the button. This label can be translated using the *${i18n()}* editor variable.
- `icon` - The path to the icon to be displayed on the button.
- `actionContext` - Specifies the context in which the action associated with the form control is executed. Its possible values are `element` (default value) and `caret`. If you select the `element` value, the context is the element that holds the form control. If you select the `caret` value, the action is invoked at the cursor location. If the cursor is not inside the element that holds the form control, the `element` value is selected automatically.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.

- `actionStyle` - Specifies what to display for an action in the form control. The values of this property can be `text` (default value), `icon`, or `both`.
- `tooltip` - Specifies a tooltip to be displayed when you hover over the form control.
- `transparent` - Makes the button transparent without any borders or background colors. The values of this property can be `true` or `false`.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `enableInReadOnlyContext` - To enable button form controls or groups of buttons form controls this property needs to be set to `true`. This property can be used to specify areas as *read-only* (by setting the `-oxy-editable` property to `false`). This is useful when you want to use an action that does not modify the context.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_buttonGroup(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_buttonGroup* Form Control

```
buttongroup:before {
  content:
    oxy_label(text, "Button Group:", width, 150px, text-align, left)
    oxy_buttonGroup(
       label, 'A group of actions',
       /* The action IDs are declared in the document type
          associated with the XML document. */
       actionIDs,
          "insert.popupWithMultipleSelection,insert.popupWithSingleSelection",
       actionStyle, "both");
}
```

Tip: To insert a sample of the `oxy_buttonGroup` form control in a CSS file ,, invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_buttonGroup` code template. Also, an `oxy_buttonGroup_in_place_action` code template is available that inserts an `oxy_buttonGroup` function that includes an `oxy_action_list` function.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Checkbox Form Control
The `oxy_checkbox` built-in form control is used for a graphical user interface box that you can click to enable or disable an option. A single checkbox or multiple checkboxes can be used to present and edit the value on an attribute or element.

The `oxy_checkbox` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

    Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.
- `resultSeparator` - If multiple check-boxes are used, the separator is used to compose the final result. If not specified, the *space* character is used.

- `tooltips` - Associates tooltips to each value in the `values` property. The value of this property is a list of tooltip messages separated by commas. If you want the tooltip to display a comma, use the `${comma}` variable.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `values` - Specifies the values that are committed when the check-boxes are selected. If these values are not specified in the CSS, they are collected from the associated XML Schema.

  Note: Typically, when you use a comma in the values of a form control, the content that follows a comma is considered a new value. If you want to include a comma in the values, precede the comma with two backslashes. For example, `(values, '1\\, 2\\, 3, 4, edit, false)` will display a form control that has **1, 2, 3** for the first value and **4** for the second value.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`..
- `uncheckedValues` - Specifies the values that are committed when check-boxes are not selected.
- `labels` - This property must have the same number of items as the `values` property. Each item provides a literal description of the items listed in the `values` property. These labels can be translated using the *${i18n()}* editor variable.. If this property is not specified, the `values` property is used as the label.
- `columns` - Controls the layout of the form control. The check boxes will be grouped in a number of columns equal to the given value.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_checkbox(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: Single *oxy_checkbox* Form Control

```
checkBox[attribute]:before {
    content: "A check box editor that edits a two valued attribute (On/Off)
              The values are specified in the CSS:"
        oxy_checkbox(
        edit, "@attribute",
        values, "On",
        uncheckedValues, "Off",
        labels, "On/Off");
}
```

Example: Multiple *oxy_checkbox* Form Controls

```
multipleCheckBox[attribute]:before {
    content: "Multiple checkboxes editor that edits an attribute value.
              Depending whether the check-box is selected,
              a different value is committed:"
        oxy_checkbox(
        edit, "@attribute",
        values, "true, yes, on",
        uncheckedValues, "false, no, off",
        resultSeparator, ","
        labels, "Present, Working, Started");
}
```

Tip: To insert a sample of the `oxy_checkbox` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_checkbox` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Combo Box Form Control
The `oxy_combobox` built-in form control is used for providing a graphical user interface object that is a drop-down menu of proposed values. This form control can also be used for a combination of a drop-down menu and an editable single-line text field.

The `oxy_combobox` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

  Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.
- `columns` - Controls the width of the form control. The unit size is the width of the **w** character.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `editable` - This property accepts the **true** and **false** values. In addition to a drop-down menu, the **true** value also generates an editable text field box that allows you to insert other values than the proposed ones. The **false** value generates a drop-down menu that only accepts the proposed values.
- `tooltips` - Associates tooltips to each value in the `values` property. The value of this property is a list of tooltip messages separated by commas. If you want the tooltip to display a comma, use the `${comma}` variable.
- `values` - Specifies the values that populate the list of proposals. If these values are not specified in the CSS, they are collected from the associated XML Schema..

  Note: Typically, when you use a comma in the values of a form control, the content that follows a comma is considered a new value. If you want to include a comma in the values, precede the comma with two backslashes. For example, `(values, '1\\, 2\\, 3, 4, edit, false)` will display a form control that has **1, 2, 3** for the first value and **4** for the second value.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `labels` - This property must have the same number of items as the `values` property. Each item provides a literal description of the items listed in the `values` property. These labels can be translated using the *${i18n()}* editor variable.

  Note: This property is only available for read-only combo boxes (the `editable` property is set to `false`).
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_combobox(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

- `canRemoveValue` - If the value is set to `true` and the combo box is not editable, then a new `<Empty>` value is added in that combo box. This clears or removes the value being edited, depending on if it edits an element or attribute.
- `onChange` - Can be used to invoke an action when the value of the combo box changes. The action can be created in the CSS using the `oxy_action()` function or referenced from the *framework* by its ID. After the action is executed, the cursor remains in the combo box. Note that this property does not support actions defined by JavaScript code.

Example: *oxy_combobox* Form Control

```
comboBox:before {
    content: "A combo box that edits an attribute value.
              The possible values are provided from CSS:"
        oxy_combobox(
            edit, "@attribute",
            editable, false,
            values, "value1, value2, value3",
            labels, "Value no1, Value no2, Value no3",
            onChange, oxy_action(
                name, 'Insert',
                operation, 'XQueryUpdateOperation',
                arg-script, 'insert node <product>{xs:string(@attribute)}</product>
                         as last into .'));
}
```

Tip: To insert a sample of the `oxy_combobox` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_combobox` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Date Picker Form Control
The `oxy_datePicker` built-in form control is used for offering a text field with a calendar browser that allows the user to choose a certain date in a specified format.

The `oxy_datePicker` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

    Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.
- `columns` - Controls the width of the form control. The unit size is the width of the **w** character.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `format` - This property specifies the format of the inserted date. The pattern value must be a valid Java date (or date-time) format. If this property is missing, the format of the date is determined from the associated schema.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `validateInput` - Specifies if the form control is validated. If you introduce a date that does not respect the format, the `datePicker` form control is rendered with a red foreground. By default, the input is validated. To disable the validation, set this property to `false`.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_datePicker(edit, "@attribute", hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_datePicker* Form Control

```
date {
    content:
        oxy_label(text, "Date time attribute with
                  format defined in CSS: ", width, 300px)
        oxy_datePicker(
            columns, 16,
            edit, "@attribute",
            format, "yyyy-MM-dd");
}
```

Tip: To insert a sample of the `oxy_datePicker` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_datePicker` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

HTML Content Form Control
The `oxy_htmlContent` built-in form control is used for rendering HTML content. This HTML content is displayed as a graphical element shaped as a box. The shape of the box is determined by a given width and the height is computed based upon the length of the text.

The `oxy_htmlContent` form control supports the following properties:

- `href` - The absolute or relative location of a resource. The resource needs to be a well-formed HTML file.
- `id` - The unique identifier of an item. This is a `div` element that has a unique `id` and is a child of the `body` element. The `div` element is the container of the HTML content to be rendered by the form control.
- `content` - An alternative to the `href` and `id` pair of elements. It provides the HTML content that will be displayed in the form control.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the `%` character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

  ```
  p:before {
    content: oxy_htmlContent(hoverPseudoclassName, 'showBorder')
  }
  p:showBorder {
    border: 1px solid red;
  }
  ```

You can customize the style of the content using CSS that is either referenced by the file identified by the `href` property or is defined inline. If you change the HTML content or CSS and you want your changes to be reflected in the XML that renders the form control, then you need to refresh the XML file. If the HTML does not have an associated style, then a default text and background color will be applied.

Example: *oxy_htmlContent* Form Control

In the following example, the form control collects the content from the `p_description` `div` element found in the `descriptions.html` file. The box is 400 pixels wide and is displayed before a paragraph identified by the `intro_id` attribute value.

```
p#intro_id:before {
    content:
        oxy_htmlContent(
            href, "descriptions.html",
            id, "p_description",
            width, 400px);
}
```

An alternative example, using the `content` property:

```
p#intro_id:before {
    content:
```

```
        oxy_htmlContent(
            content, "<div style='font-weight:bold;'>My content</div>",
            width, 400px);
}
```

Note: *Anchor* HTML elements are displayed but the links are inactive.

Tip: To insert a sample of the `oxy_htmlContent` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_htmlContent` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Pop-up Form Control
The `oxy_popup` built-in form control is used to offer a contextual menu that provides quick access to various actions. A pop-up form control can display single or multiple selections.

The `oxy_popup` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

    Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.
- `rows` - This property specifies the number of rows that the form control presents.

  Note: If the value of the **rows** property is not specified, the default value of **12** is used.
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.

  Note: This property is used for rendering in the **Author** mode.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `tooltips` - Associates tooltips to each value in the `values` property. The value of this property is a list of tooltip messages separated by commas. If you want the tooltip to display a comma, use the `${comma}` variable.

  Example:

```
link:before{
 content: oxy_popup(
         edit, '@href',
         values, "Spring, Summer, Autumn, Winter",
         tooltips, "Iris${comma}Snowdrop, Gardenia${comma}Liliac,
             Chrysanthemum${comma}Salvia, Gerbera",
        selectionMode, single);
}
```

- `values` - Specifies the values that populate the list of proposals. If these values are not specified in the CSS, they are collected from the associated XML Schema.

  Note: Typically, when you use a comma in the values of a form control, the content that follows a comma is considered a new value. If you want to include a comma in the values, precede the comma with two backslashes. For example, `(values, '1\\, 2\\, 3, 4, edit, false)` will display a form control that has **1, 2, 3** for the first value and **4** for the second value.
- `resultSeparator` - If multiple check-boxes are used, the separator is used to compose the final result. If not specified, the *space* character is used.

  Note: The value of the `resultSeparator` property cannot exceed one character.

- `selectionMode` - Specifies whether the form control allows the selection of a single value or multiple values. The predefined values of this property are `single` (default value) and `multiple`.
- `labels` - Specifies the label associated with each entry used for presentation. If this property is not specified, the **values** property is used instead.
- `columns` - Controls the width of the form control. The unit size is the width of the **w** character. This property is used for the visual representation of the form control.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `rendererSort` - Allows you to sort the values rendered on the form control label. The possible values of this property are `ascending` and `descending`.
- `editorSort` - Allows you to sort the values rendered on the form control. The possible values of this property are `ascending` and `descending`.
- `rendererSeparator` - Defines a separator used when multiple values are rendered. If not specified, the value of the `resultSeparator` property is used.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_popup(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_popup* Form Control

```
popupWithMultipleSelection:before {
    content: " This editor edits an attribute value.
              The possible values are specified
    inside the CSS: "
        oxy_popup(
            edit, "@attribute",
            values, "value1, value2, value3, value4, value5",
            labels, "Value no1, Value no2, Value no3, Value no4, Value no5",
            resultSeparator, "|",
            columns, 10,
            selectionMode, "multiple",
            color, "blue",
            fontInherit, true);
    font-size:30px;
}
```

Tip: To insert a sample of the `oxy_popup` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_popup` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Text Area Form Control
The `oxy_textArea` built-in form control is used for entering multiple lines of text in a graphical user interface box. A text area may include optional syntax highlight capabilities to present the form control.

The `oxy_textArea` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.

- **#content** - This parameter is useful when an element has mixed or element-only content and you want to edit its content inside a text area form control.

  For example, if you have the following XML content:

  ```
  <codeblock outputclass="language-xml">START_TEXT<ph>phase</ph>
            <apiname><text>API</text></apiname></codeblock>
  ```

  and your CSS includes the following snippet:

  ```
  codeblock:before{
  content:
      oxy_textArea(
        edit, '#content',
        contentType, 'text/xml');
  }
  ```

  then the text area form control will edit the following fragment:

  ```
  START_TEXT<ph>phase</ph><apiname><text>API</text></apiname>
  ```

  Note: When the value of the `edit` property is `#content`, the text area form control will also offer content completion proposals.

- **#content** - This parameter is useful when an element has mixed or element-only content and you want to edit its content inside a text area form control.

  For example, if you have the following XML content:

  ```
  <codeblock outputclass="language-xml">START_TEXT<ph>phase</ph>
            <apiname><text>API</text></apiname></codeblock>
  ```

  and your CSS includes the following snippet:

  ```
  codeblock:before{
  content:
      oxy_textArea(
        edit, '#content',
        contentType, 'text/xml');
  }
  ```

  then the text area form control will edit the following fragment:

  ```
  START_TEXT<ph>phase</ph><apiname><text>API</text></apiname>
  ```

  Note: When the value of the `edit` property is `#content`, the text area form control will also offer content completion proposals.

- `columns` - Controls the width of the form control. The unit size is the width of the **w** character.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the `%` character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `rows` - This property specifies the number of rows that the form control presents. If the form control has more lines, you can scroll and see them all.
- `contentType` - Specifies the type of content for which the form control offers syntax highlighting. The following values are supported: `text/css; text/shell; text/cc; text/xquery; text/xml; text/python; text/xsd; text/c; text/xpath; text/javascript; text/xsl; text/wsdl; text/html; text/xproc; text/properties; text/sql; text/rng; text/sch; text/json; text/perl; text/php; text/java; text/batch; text/rnc; text/dtd; text/nvdl; text/plain.`

- `indentOnTab` - Specifies the behavior of the **Tab** key. If the value of this property is set to `true` (default value), the **Tab** key inserts characters. If it is set to `false`, **Tab** is used for navigation, jumping to the next editable position in the document.
- The `white-space` CSS property influences the value that you edit, as well as the from control size:
  - `pre` - The whitespaces and new lines of the value are preserved and edited. If the `rows` and `columns` properties are not specifies, the form control calculates its size on its own so that all the text is visible.
  - `pre-wrap` - The long lines are wrapped to avoid horizontal scrolling.

    Note: The `rows` and `columns` properties must be specified. If these are not specified, the form control considers the value to be `pre`.
  - `normal` - The white spaces and new lines are normalized.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_textArea(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_textArea* Form Control

The following example presents a text area with CSS syntax highlighting that calculates its own dimension, and a second one with XML syntax highlighting with defined dimension.

```
textArea {
    visibility: -oxy-collapse-text;
    white-space: pre;
}

textArea[language="CSS"]:before {
    content: oxy_textArea(
      edit, '#text',
      contentType, 'text/css');
}

textArea[language="XML"]:before {
    content: oxy_textArea(
      edit, '#text',
      contentType, 'text/xml',
      rows, 10,
      columns, 30);
}
```

Tip: To insert a sample of the `oxy_textArea` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_textArea` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Text Field Form Control
The `oxy_textfield` built-in form control is used for entering a single line of text in a graphical user interface box. A text field may include optional content completion capabilities, used to present and edit the value of an attribute or an element.

The `oxy_textfield` form control supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

    Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.

- `columns` - Controls the width of the form control. The unit size is the width of the **w** character.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the `%` character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `values` - Specifies the values that populate the list of proposals. If these values are not specified in the CSS, they are collected from the associated XML Schema.
- `tooltips` - Associates tooltips to each value in the `values` property. The value of this property is a list of tooltip messages separated by commas. If you want the tooltip to display a comma, use the `${comma}` variable.
- `tooltip` - Specifies a tooltip to be displayed when you hover over the form control.
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `hasMultipleValues` - Specifies if the text field allows multiple values separated by spaces or just a single value.

  Note: If the value is `false`, the *Content Completion Assistant* considers the entire text as the prefix for its proposals. If the value is `true` (the default value), the space is the delimiter for the values and thus it is not included in the prefix (the prefix will be whatever comes after the space).

  For example, suppose the possible values for your text field are: `value a`, `value b`, and `other values`. If the `hasMultipleValues` property is set to `true` and the user enters `"value "` (notice the space character after 'value') in the text field, the *Content Completion Assistant* will suggest all three values because the prefix is whatever comes after the space, and in this case the user did not enter anything after the space. If the `hasMultipleValues` property was set to `false` for our example, the *Content Completion Assistant* would only suggest `value a` and `value b` because the space is considered part of the prefix.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_textfield(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_textfield* Form Control

```
element {
    content: "Label: "
        oxy_textfield(
            edit, "@my_attr",
            values, "value1, value2",
            color, "red",
            columns, 40);
}
```

Tip: To insert a sample of the `oxy_textfield` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_textfield` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

URL Chooser Form Control
The `oxy_urlChooser` built-in form control is used for a dialog box that allows you to select the location of local or remote resources. The inserted reference is made relative to the URL of the currently opened editor.

The `oxy_urlChooser` editor supports the following properties:

- `edit` - Lets you edit the value of an attribute, the text content of an element, or Processing Instructions (PI). This property can have the following values:
  - **@attribute_name** - The name of the attribute whose value is being edited. If the attribute is in a namespace, the value of the property must be a *QName* and the CSS must have a namespace declaration for the prefix.
  - **#text** - Specifies that the presented/edited value is the simple text value of an element.

    Note: You can set the value of the `visibility` property to `-oxy-collapse-text` to render the text only in the form control that the `oxy_editor` function specifies.
- `columns` - Controls the width of the form control. The unit size is the width of the **w** character.
- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units. The `width` property takes precedence over the `columns` property (if the two are used together).
- `color` - Specifies the foreground color of the form control. If the value of the `color` property is `inherit`, the form control has the same color as the element in which it is inserted.
- `visible` - Specifies whether or not the form control is visible. The possible values of this property are `true` (default value) and `false`.
- `fontInherit` - This value specifies whether or not the form control inherits its font from its parent element. The values of this property can be `true` or `false` (default value). To make the form control inherit its font from its parent element, set the `fontInherit` property to `true`.
- `fileFilter` - string value that holds comma-separated file extensions. The URL chooser uses these extensions to filter the displayed files. A value such as "`jpg,png,gif`" is mapped to three filters that will display all `jpg`, `png`, and `gif` files respectively.
- `hoverPseudoclassName` - Allows you to change the way an element is rendered when you hover over a form control. The value is the name of a CSS pseudo-class. When you hover over the form control, the specified pseudo-class will be set on the element that contains the form control.

```
p:before {
  content: oxy_urlChooser(hoverPseudoclassName, 'showBorder')
}
p:showBorder {
  border: 1px solid red;
}
```

Example: *oxy_urlChooser* Form Control

```
urlChooser[file]:before {
    content: "A URL chooser editor that allows browsing for a URL.
          The selected URL is made relative to the currently edited file:"
        oxy_urlChooser(
        edit, "@file",
        columns 25);
}
```

Tip: To insert a sample of the `oxy_urlChooser` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_urlChooser` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Video Player Form Control
The `oxy_video` built-in form control is used for providing a mechanism to play videos.

The `oxy_video` form control supports the following properties:

- `href` - The absolute or relative location of a resource. This property is mandatory. Relative values are resolved relative to the CSS. If you have media resources relative to the XML document, you can specify their paths like this:

```
oxy_video(href, oxy_url(oxy_base-uri(), 'ex.mp4')), width, 400px, height, 300px)
```

- `width` - Specifies the width of the content area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units.
- `height` - Specifies the height of the form control area using relative (`em`, `ex`), absolute (`in`, `cm`, `mm`, `pt`, `pc`, `px`), and percentage (followed by the % character) length units.

Example: *oxy_video* Form Control

```
object {
    content:
        oxy_video(
            href, 'resources/video.mp4',
            width, 400px,
            height, 300px),
}
```

Tip: To insert a sample of the `oxy_video` form control in a CSS file , invoke the *Content Completion Assistant* by pressing **Ctrl + Space (Command + Space on OS X)** and select the `oxy_video` code template.

To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*/samples/form-controls**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Implementing Custom Form Controls
If the built-in form controls are not sufficient for your needs, you can implement custom form controls in Java.

Custom Form Controls Implementation

You can specify custom form controls using the following properties:

- **rendererClassName** - The name of the class that draws the edited value. It must be an implementation of *ro.sync.ecss.extensions.api.editor.InplaceRenderer*. The renderer has to be a **SWING** implementation and can be used both in the standalone and Eclipse distributions.
- **swingEditorClassName** - You can use this property for the standalone (**Swing**-based) distribution to specify the name of the class used for editing. It is a **Swing** implementation of *ro.sync.ecss.extensions.api.editor.InplaceEditor*.
- **swtEditorClassName** - You can use this property for the Eclipse plugin distribution to specify the name of the class used for editing. It is a **SWT** implementation of the *ro.sync.ecss.extensions.api.editor.InplaceEditor*.

  Note: If the custom form control is intended to work in the Oxygen XML Editor plugin standalone distribution, the declaration of **swtEditorClassName** is not required. The **renderer** (the class that draws the value) has different properties from the **editor** (the class that edits the value) because you can present a value in one way and edit it in another.
- **classpath** - You can use this property to specify the location of the classes used for a custom form control. The value of the **classpath** property is an enumeration of URLs separated by comma.
- **edit** - If your form control edits the value of an attribute or the text value of an element, you can use the `@attribute_name` and `#text` predefined values and Oxygen XML Editor plugin will perform the commit logic by itself. You can use the `custom` value to perform the commit logic yourself.
- **ecHeavyFormControlClassName** - This type of form control is effectively present at all times at its allocated bounds. This is useful if you need a form controls that renders dynamic or interactive SVG documents (for example, if you have an SVG document that displays tooltips when hovering over certain areas).

  The value of this property is a class name that must implement the *ro.sync.ecss.extensions.api.editor.InplaceHeavyEditor* method. The *JAR* that contains this implementation can either be added in the **Classpath** tab in the **Document Type Configuration** dialog box for your particular *framework* or specified with the `classpath` property.

Example: Java Code

The following is a sample Java code for implementing a custom combo box form control that inserts an XML element in the content when the editing stops:

```
public class ComboBoxEditor  extends AbstractInplaceEditor {
  /**
```

```
   * @see ro.sync.ecss.extensions.api.editor.InplaceEditor#stopEditing()
   */
  @Override
   public void stopEditing() {
     Runnable customCommit =  new Runnable() {
       @Override
        public void run() {
         AuthorDocumentController documentController =
             context.getAuthorAccess().getDocumentController();
         documentController.insertXMLFragment( "<custom/>", offset);
       }
     };
     EditingEvent event =  new EditingEvent(customCommit,  true);
     fireEditingStopped(event);
   }
```

The custom form controls can use any of the predefined properties of the built-in form controls, as well as specified custom properties.

Example: CSS

The following is an example of how to specify a custom form control in the CSS:

```
myElement {
    content: oxy_editor(
        rendererClassName, "com.custom.editors.CustomRenderer",
        swingEditorClassName, "com.custom.editors.SwingCustomEditor",
        swtEditorClassName, "com.custom.editors.SwtCustomEditor",
        edit, "@my_attr",
        customProperty1, "customValue1",
        customProperty2, "customValue2"
    )
}
```

How to Implement Custom Form Controls

To implement a custom form control, follow these steps:

1. Download the Oxygen XML Editor plugin SDK at https://www.oxygenxml.com/oxygen_sdk.html.
2. Implement the custom form control by extending *ro.sync.ecss.extensions.api.editor.InplaceEditorRendererAdapter*. You could also use *ro.sync.ecss.extensions.api.editor.AbstractInplaceEditor*, which offers some default implementations and listeners management.
3. Pack the previous implementation in a Java *JAR* library.
4. Copy the *JAR* library to the *[OXYGEN_INSTALL_DIR]*`/frameworks/[FRAMEWORK_DIR]` directory.
5. In Oxygen XML Editor plugin, open the **Preferences** dialog box , go to **Document Type Association**, edit the appropriate *framework*, and add the *JAR* library in the **Classpath** tab.
6. Specify the custom form control in your CSS, as described above.

Tip: To see more detailed examples and more information about how form controls work in Oxygen XML Editor plugin, see the sample files in the following directory: ***[OXYGEN_INSTALL_DIR]*`/samples/form-controls`**.

For more information about form controls, watch our video demonstration:

https://www.youtube.com/embed/-WY3wzkMSLM

Editing Processing Instructions Using Form Controls
Oxygen XML Editor plugin allows you to edit *processing instructions*, *comments*, and *CDATA* by using the built-in editors.

Oxygen XML Editor plugin allows you to edit *processing instructions*, *comments*, and *CDATA* by using the built-in editors.

Note: You can edit both the content and the attribute value from a *processing instruction*.

Example: Editing an Attribute from a Processing Instruction

PI content:

```
<?pi_target attr="val"?>
```

CSS:

```
oxy|processing-instruction:before {
    display:inline;
    content:
        "EDIT attribute: " oxy_textfield(edit, '@attr', columns, 15);
    visibility:visible;
}
oxy|processing-instruction{
    visibility:-oxy-collapse-text;
}
```

Custom CSS Pseudo-classes

You can set your custom CSS pseudo-classes on the nodes from the *AuthorDocument* model. These are similar to the normal XML attributes, with the important difference that they are not serialized, and by changing them the document does not create undo and redo edits - the document is considered unmodified. You can use custom pseudo-classes for changing the style of an element (and its children) without altering the document.

In Oxygen XML Editor plugin they are used to hide/show the `colspec` elements from CALS tables. To take a look at the implementation, see:

1. *[OXYGEN_INSTALL_DIR]*`/frameworks/docbook/css/cals_table.css` (Search for `-oxy-visible-colspecs`)
2. The definition of action `table.toggle.colspec` from the DocBook *framework* makes use of the pre-defined *TogglePseudoClassOperation* **Author** mode operation.

Here are some examples:

Example: Controlling the visibility of a section using a pseudo-class

You can use a non standard (custom) pseudo-class to impose a style change on a specific element. For instance, you can have CSS styles matching the custom pseudo-class `access-control-user`, like the one below:

```
section {
  display:none;
}

section:access-control-user {
  display:block;
}
```

By setting the pseudo-class `access-control-user`, the element section will become visible by matching the second CSS selector.

Example: Coloring the elements at the current cursor location

You could create an *AuthorCaretListener* that sets the `caret-visited` pseudo-class to the element at the cursor location. The effect will be that all the elements traversed by the cursor become red.

```
*:caret-visited {
  color:red;
}
```

The API that you can use from the *CaretListener*:

ro.sync.ecss.extensions.api.AuthorDocumentController#setPseudoClass(java.lang.String, ro.sync.ecss.extensions.api.node.AuthorElement)

ro.sync.ecss.extensions.api.AuthorDocumentController#removePseudoClass(java.lang.String, ro.sync.ecss.extensions.api.node.AuthorElement)

Predefined Pseudo-Class Author Mode Operations

Pre-defined **Author** mode operations can be used directly in your *framework* to work with custom pseudo-classes:

1. *TogglePseudoClassOperation*
2. *SetPseudoClassOperation*
3. *RemovePseudoClassOperation*

Debugging CSS Stylesheets

To assist you with debugging and customizing CSS stylesheets the **Author** mode includes a **CSS Inspector** view to examine the CSS rules that match the currently selected element.

This tool is similar to the Inspect Element development tool that is found in most browsers. The **CSS Inspector** view allows you to see how the CSS rules are applied and the properties defined. Each rule that is displayed in this view includes a link to the line in the CSS file that defines the styles for the element that matches the rule. You can use the link to open the appropriate CSS file and edit the style rules. Once you have found the rule you want to edit, you can click the link in the top-right corner of that rule to open the CSS file in the editor.

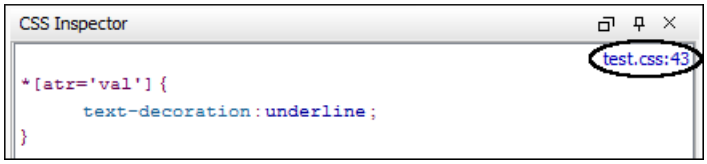


Figure 671: CSS Inspector View

There are two ways to open the CSS Inspector view:

1. Select **CSS Inspector** from the **Window** > **Show View** menu.
2. Select the **Inspect Styles** action from the contextual menu in **Author** mode.

Related Information:

CSS Inspector View on page 209

Creating and Running Automated Tests

If you have developed complex custom *plugin* or *framework* (document types), the best way to test your implementation and ensure that further changes will not interfere with the current behavior is to make automated tests for your customization.

An Oxygen XML Editor plugin standalone installation includes a main `oxygen.jar` library located in the *[OXYGEN_INSTALL_DIR]*. That *JAR* library contains a base class for testing developer customizations named: *ro.sync.exml.workspace.api.PluginWorkspaceTCBase*.

To develop *JUnit* tests for your customizations using the **Eclipse** workbench, follow these steps:

1. Create a new Eclipse Java project and copy to it the entire contents of the *[OXYGEN_INSTALL_DIR]*.
2. Add all *JAR* libraries present in the *[OXYGEN_INSTALL_DIR]*`/lib` directory to the **Java Build Path**->**Libraries** tab. Make sure that the main *JAR* library `oxygen.jar` or `oxygenAuthor.jar` is the first one in the Java classpath by moving it up in the **Order and Export** tab.
3. Click **Add Library** and add the *JUnit* and *JFCUnit* libraries.
4. Create a new Java class that extends *ro.sync.exml.workspace.api.PluginWorkspaceTCBase*.
5. Pass the following parameters on to the constructor of the super class:
   - `File installationFolder` - The file path to the main application installation directory. If not specified, it defaults to the folder where the test is started.
   - `File frameworksFolder` - The file path to the `frameworks` directory. It can point to a custom *framework* directory where it resides.
   - `File pluginsFolder` - The file path to the `plugins` directory. It can point to a custom *plugin* directory where it resides.
   - `File optionsFolder` - The folder that contains the application options. If not specified, the application will auto-detect the location based on the started product ID.
   - `String licenseKey` - The license key used to license the test class.
   - `int productID` - The ID of the product and should be one of the following: `PluginWorkspaceTCBase.XML_AUTHOR_PRODUCT`, `PluginWorkspaceTCBase.XML_EDITOR_PRODUCT`, or `PluginWorkspaceTCBase.XML_DEVELOPER_PRODUCT`.

6. Create test methods that use the API in the base class to open XML files and perform various actions on them. Your test class could look something like this:

```
public class MyTestClass extends PluginWorkspaceTCBase {

/**
 * Constructor.
 */
public MyTestClass() throws Exception {
 super(null, new File("frameworks"), new File("plugins"), null,
"------START-LICENSE-KEY------\n" +
 "\n" +
 "Registration_Name=Developer\n" +
 "\n" +
 "Company=\n" +
 "\n" +
 "Category=Enterprise\n" +
 "\n" +
 "Component=XML-Editor, XSLT-Debugger, Saxon-SA\n" +
 "\n" +
 "Version=14\n" +
 "\n" +
 "Number_of_Licenses=1\n" +
 "\n" +
 "Date=09-04-2012\n" +
 "\n" +
 "Trial=31\n" +
 "\n" +
 "SGN=MCwCFGNoEGJSeiC3XCYIyalvjzHhGhhqAhRNRDpEu8RIWb8icCJO7HqfVP4++A\\=\\=\n" +
 "\n" +
"-------END-LICENSE-KEY-------",
 PluginWorkspaceTCBase.XML_AUTHOR_PRODUCT);
 }

 /**
   * <p><b>Description:</b> TC for opening a file and using a bold operation</p>
   * <p><b>Bug ID:</b> EXM-20417</p>
   *
   * @author radu_coravu
   *
   * @throws Exception
   */
public void testOpenFileAndBoldEXM_20417() throws Exception {
      WSEditor ed = open(new File
("D:/projects/eXml/test/authorExtensions/dita/sampleSmall.xml").toURL());
     //Move caret
     moveCaretRelativeTo("Context", 1, false);

     //Insert <b>
     invokeAuthorExtensionActionForID("bold");
     assertEquals("<?xml version=\"1.0\" encoding=\"utf-8\"?>\n" +
       "<!DOCTYPE task PUBLIC \"-//OASIS//DTD DITA Task//EN\"
 \"http://docs.oasis-open.org/dita/v1.1/OS/dtd/task.dtd\">\n" +
       "<task id=\"taskId\">\n" +
       "    <title>Task <b>title</b></title>\n" +
       "    <prolog/>\n" +
       "    <taskbody>\n" +
       "        <context>\n" +
       "            <p>Context for the current task</p>\n" +
       "        </context>\n" +
       "        <steps>\n" +
       "            <step>\n" +
       "                <cmd>Task step.</cmd>\n" +
       "            </step>\n" +
       "        </steps>\n" +
       "    </taskbody>\n" +
       "</task>\n" +
       "", getCurrentEditorXMLContent());
   }
}
```

API Frequently Asked Questions (API FAQ)

This section contains answers to common questions regarding the Oxygen XML Editor plugin customizations using the *Oxygen SDK*, or plugins.

For additional questions, contact us. The preferred approach is via email because API questions must be analyzed thoroughly. We also provide code snippets, if they are required.

Add Custom Actions to the Contextual Menu?

Question

How do I add my own custom actions to the contextual menu using an API?

Answer

The *WSAuthorEditorPageBase.addPopUpMenuCustomizer* and *WSTextEditorPage.addPopUpMenuCustomizer* API methods allow you to customize the contextual menu shown either in the **Author** or **Text** modes. The API is available both in the standalone application and in the Eclipse plugin.

Here is an elegant way to add actions to the **Author** page from your Eclipse plugin extension:

1. Create a pop-up menu customizer implementation:

```
import org.eclipse.jface.action.ContributionManager;
import org.eclipse.ui.PlatformUI;
import org.eclipse.ui.menus.IMenuService;
import ro.sync.ecss.extensions.api.AuthorAccess;
import ro.sync.ecss.extensions.api.structure.AuthorPopupMenuCustomizer;
/**
* This class is used to create the possibility to attach certain
* menuContributions to the {@link ContributionManager}, which is used for the
* popup menu in the Author Page of the Oxygen Editor.<br />
* You just need to use the org.eclipse.ui.menus extension and add a
* menuContribution with the locationURI: <b>menu:oxygen.authorpage</b>
*/
public class OxygenAuthorPagePopupMenuCustomizer implements
        AuthorPopupMenuCustomizer {

    @Override
    public void customizePopUpMenu(Object menuManagerObj,
            AuthorAccess authoraccess) {
        if (menuManagerObj instanceof ContributionManager) {
 ContributionManager contributionManager = (ContributionManager) menuManagerObj;
            IMenuService menuService = (IMenuService) PlatformUI.getWorkbench()
                    .getActiveWorkbenchWindow().getService(IMenuService.class);

            menuService.populateContributionManager(contributionManager,
                    "menu:oxygen.authorpage");
            contributionManager.update(true);
        }
    }
}
```

2. Add a workbench listener and add the pop-up customizer when an editor is opened in the **Author** page:

```
Workbench.getInstance().getActiveWorkbenchWindow().getPartService()
.addPartListener(
    new IPartListener() {
      @Override
      public void partOpened(IWorkbenchPart part) {
        if(part instanceof ro.sync.exml.workspace.api.editor.WSEditor) {
          WSEditorPage currentPage = ((WSEditor)part).getCurrentPage();
          if(currentPage instanceof WSAuthorEditorPage) {
            ((WSAuthorEditorPage)currentPage).addPopUpMenuCustomizer
(new OxygenAuthorPagePopupMenuCustomizer());
          }
        }
      }
      ........
    });
```

3. Implement the extension point in your `plugin.xml` file:

```
<extension
       point="org.eclipse.ui.menus">
    <menuContribution
          allPopups="false"
          locationURI="menu:oxygen.authorpage">
       <command
             commandId="eu.doccenter.kgu.client.tagging.removeTaggingFromOxygen"
             style="push">
       </command>
    </menuContribution>
</extension>
```

Add Custom Callouts

Question

I want to highlight validation errors, instead of underlining them (for example, changing the text background color to light red or yellow). Also, I want to let Oxygen XML Editor plugin write a note about the error type into the **Author** mode directly at the error position (for example, " [value "text" not allowed for attribute "type"] "). Is this possible using the API?

Answer

The Plugins API allows you to set a *ValidationProblemsFilter* that gets notified when automatic validation errors are available. Then you can map each of the problems to an offset range in the **Author** mode using the API *WSTextBasedEditorPage.getStartEndOffsets(DocumentPositionedInfo)*. For each of those offsets, you can add either persistent or non-persistent highlights. If you add persistent highlights, you can also customize callouts to appear for each of them. The downside is that they need to be removed before the document gets saved. The result would look something like this:

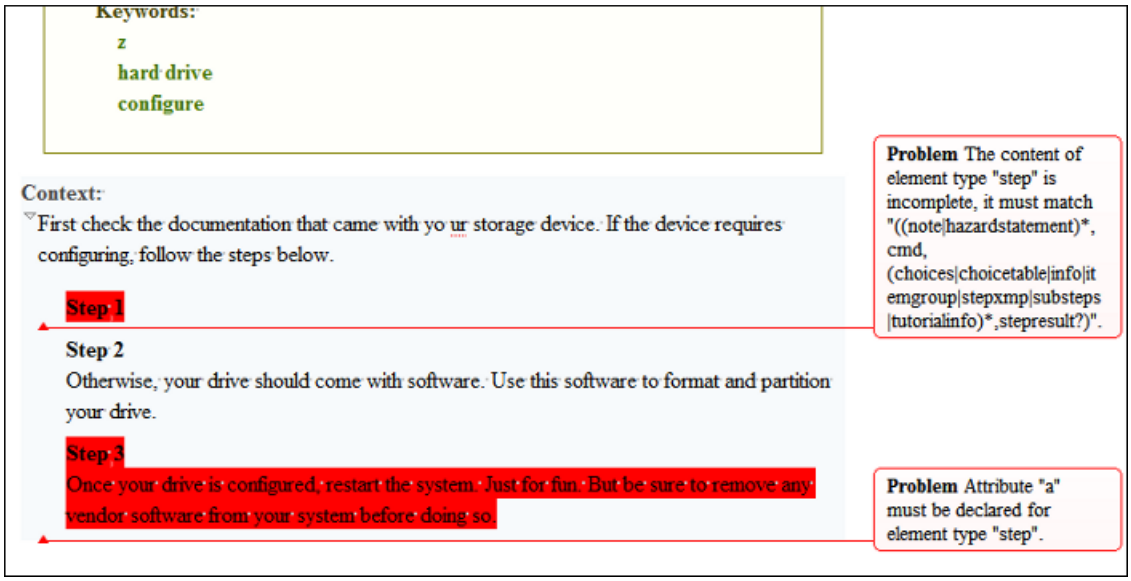


Figure 672: Custom Callouts with Persistent Highlights

Here is a working example:

```
/**
* Plugin extension - workspace access extension.
*/
public class CustomWorkspaceAccessPluginExtension
                    implements WorkspaceAccessPluginExtension {

/**
* @see ro.sync.exml.plugin.workspace.WorkspaceAccessPluginExtension
   #applicationStarted(
ro.sync.exml.workspace.api.standalone.StandalonePluginWorkspace)
*/
    public void applicationStarted
(final StandalonePluginWorkspace pluginWorkspaceAccess) {
        pluginWorkspaceAccess.addEditorChangeListener
(new WSEditorChangeListener() {
          /**
           * @see WSEditorChangeListener#editorOpened(java.net.URL)
           */
          @Override
          public void editorOpened(URL editorLocation) {
            final WSEditor currentEditor = pluginWorkspaceAccess.getEditorAccess
(editorLocation, StandalonePluginWorkspace.MAIN_EDITING_AREA);
            WSEditorPage currentPage = currentEditor.getCurrentPage();
            if(currentPage instanceof WSAuthorEditorPage) {
              final WSAuthorEditorPage currentAuthorPage =
(WSAuthorEditorPage)currentPage;
              currentAuthorPage.getPersistentHighlighter().setHighlightRenderer
(new PersistentHighlightRenderer() {
                @Override
                public String getTooltip(AuthorPersistentHighlight highlight) {
                  return highlight.getClonedProperties().get("message");
```

```
                }
                @Override
                public HighlightPainter getHighlightPainter
(AuthorPersistentHighlight highlight) {
                  //Depending on severity could have different color.
                  ColorHighlightPainter painter = new ColorHighlightPainter
(Color.COLOR_RED, -1, -1);
                  painter.setBgColor(Color.COLOR_RED);
                  return painter;
                }
              });
        currentAuthorPage.getReviewController()
        .getAuthorCalloutsController().setCalloutsRenderingInformationProvider(
              new CalloutsRenderingInformationProvider() {
              @Override
    public boolean shouldRenderAsCallout(AuthorPersistentHighlight highlight) {
                  //All custom highlights are ours
                  return true;
                }
                @Override
    public AuthorCalloutRenderingInformation getCalloutRenderingInformation(
                    final AuthorPersistentHighlight highlight) {
                  return new AuthorCalloutRenderingInformation() {
                    @Override
                    public long getTimestamp() {
                      //Not interesting
                      return -1;
                    }
                    @Override
                    public String getContentFromTarget(int limit) {
                      return "";
                    }
                    @Override
                    public String getComment(int limit) {
                      return highlight.getClonedProperties().get("message");
                    }
                    @Override
                    public Color getColor() {
                      return Color.COLOR_RED;
                    }
                    @Override
                    public String getCalloutType() {
                      return "Problem";
                    }
                    @Override
                    public String getAuthor() {
                      return "";
                    }
                    @Override
                    public Map<String, String> getAdditionalData() {
                      return null;
                    }
                  };
                }
              });
 currentEditor.addValidationProblemsFilter(new ValidationProblemsFilter() {
    List<int[]> lastStartEndOffsets = new ArrayList<int[]>();
    /**
    * @see ro.sync.exml.workspace.api.editor.validation.ValidationProblemsFilter
    #filterValidationProblems
(ro.sync.exml.workspace.api.editor.validation.ValidationProblems)
     */
   @Override
   public void filterValidationProblems(ValidationProblems validationProblems) {
     List<int[]> startEndOffsets = new ArrayList<int[]>();
     List<DocumentPositionedInfo> problemsList =
validationProblems.getProblemsList();
     if(problemsList != null) {
       for (int i = 0; i < problemsList.size(); i++) {
         try {
 startEndOffsets.add(currentAuthorPage.getStartEndOffsets(problemsList.get(i)));
         } catch (BadLocationException e) {
           e.printStackTrace();
         }
       }
     }
       if(lastStartEndOffsets.size() != startEndOffsets.size()) {
         //Continue
       } else {
         boolean equal = true;
         for (int i = 0; i < startEndOffsets.size(); i++) {
           int[] o1 = startEndOffsets.get(i);
           int[] o2 = lastStartEndOffsets.get(i);
           if(o1 == null && o2 == null) {
             //Continue
           } else  if(o1 != null && o2 != null
               && o1[0] == o2[0] && o1[1] == o2[1]){
             //Continue
           } else {
             equal = false;
             break;
           }
         }
         if(equal) {
           //Same list of problems already displayed.
```

```
            return;
          }
        }
        //Keep last used offsets.
        lastStartEndOffsets = startEndOffsets;
      try {
        if(! SwingUtilities.isEventDispatchThread()) {
          SwingUtilities.invokeAndWait(new Runnable() {
            @Override
          public void run() {
              //First remove all custom highlights.
      currentAuthorPage.getPersistentHighlighter().removeAllHighlights();
            }
          });
      }
      } catch (InterruptedException e1) {
      e1.printStackTrace();
      } catch (InvocationTargetException e1) {
        e1.printStackTrace();
      }
      if(problemsList != null) {
        for (int i = 0; i < problemsList.size(); i++) {
          //A reported problem (could be warning, could be error).
          DocumentPositionedInfo dpi = problemsList.get(i);
          try {
            final int[] currentOffsets = startEndOffsets.get(i);
            if(currentOffsets != null) {
              //These are offsets in the Author content.
              final LinkedHashMap<String, String> highlightProps =
new LinkedHashMap<String, String>();
              highlightProps.put("message", dpi.getMessage());
              highlightProps.put("severity", dpi.getSeverityAsString());
              if(! SwingUtilities.isEventDispatchThread()) {
                SwingUtilities.invokeAndWait(new Runnable() {
                  @Override
                  public void run() {
                   currentAuthorPage.getPersistentHighlighter().addHighlight(
                    currentOffsets[0], currentOffsets[1] - 1, highlightProps);
             }
                });
              }
           }
          } catch (InterruptedException e) {
            e.printStackTrace();
          } catch (InvocationTargetException e) {
            e.printStackTrace();
          }
       }
      }
    }
});
 currentEditor.addEditorListener(new WSEditorListener() {
  /**
  * @see WSEditorListener#editorAboutToBeSavedVeto(int)
  */
  @Override
  public boolean editorAboutToBeSavedVeto(int operationType) {
      try {
       if(! SwingUtilities.isEventDispatchThread()) {
        SwingUtilities.invokeAndWait(new Runnable() {
          @Override
          public void run() {
            //Remove all persistent highlights before saving
            currentAuthorPage.getPersistentHighlighter().removeAllHighlights();
          }
        });
       }
     } catch (InterruptedException e) {
     e.printStackTrace();
    } catch (InvocationTargetException e) {
      e.printStackTrace();
    }
    return true;
    }
   });
  }
 }
}, StandalonePluginWorkspace.MAIN_EDITING_AREA);
      }


/**
* @see WorkspaceAccessPluginExtension#applicationClosing()
       */
      public boolean applicationClosing() {
        return true;
      }
    }
```

Add Custom Highlights to Content

Question

How can we add custom highlights to the document content in **Author** mode?

Answer

There are two types of highlights you can add:

1. **Non-Persistent Highlights** - Such highlights are removed when the document is closed and then re-opened.

   You can use the following API method:

   `ro.sync.exml.workspace.api.editor.page.author.WSAuthorEditorPageBase.getHighlighter()`

   to obtain an AuthorHighlighter that allows you to add a highlight between certain offsets with a specified painter.

   For example, you can use this support to implement your own spell checker with a custom highlight for the unrecognized words.
2. **Persistent Highlights** - Such highlights are saved in the XML content as processing instructions.

   You can use the following API method:

   `ro.sync.exml.workspace.api.editor.page.author.WSAuthorEditorPageBase.getPersistentHighlig`

   to obtain an AuthorPersistentHighlighter class that allows you to add a persistent highlight between certain offsets, set new properties for a specific highlight, and render it with a specified painter.

   For example, you can use this support to implement your own way of adding review comments.

Related Information:

Adding Custom Persistent Highlights on page 1297

Auto-Generate an ID When a Document is Opened or Created

Question

Is it possible to configure how the application generates ids? For project compliance we need ids having a certain format for each created topic.

Answer

This could be done implementing a *plugin* for Oxygen XML Editor plugin using the Plugins SDK:

There is a type of *plugin* called "Workspace Access" that can be used to add a listener to be notified when an editor is opened.

The implemented *plugin* would intercept the opened editor and editor page change events (which occur when a new editor is created) and generate a new ID attribute value on the root element.

The Java code would look like this:

```
pluginWorkspaceAccess.addEditorChangeListener(new WSEditorChangeListener() {
/**
* @see WSEditorChangeListener#editorOpened(java.net.URL)
*/
@Override
public void editorOpened(URL editorLocation) {
    WSEditor ed = pluginWorkspaceAccess.getEditorAccess
(editorLocation, PluginWorkspace.MAIN_EDITING_AREA);
        generateID(ed);
}
/**
* @see WSEditorChangeListener#editorPageChanged(java.net.URL)
*/
@Override
public void editorPageChanged(URL editorLocation) {
    WSEditor ed = pluginWorkspaceAccess.getEditorAccess
(editorLocation, PluginWorkspace.MAIN_EDITING_AREA);
        generateID(ed);
}
```

```
private void generateID(WSEditor ed) {
 if(ed.getCurrentPage() instanceof WSAuthorEditorPage) {
  WSAuthorEditorPage authorEditPage = (WSAuthorEditorPage) ed.getCurrentPage();
  AuthorDocumentController ctrl = authorEditPage.getDocumentController();
  AuthorElement root = ctrl.getAuthorDocumentNode().getRootElement();
   if(root.getAttribute("id") == null ||
!root.getAttribute("id").getValue().startsWith("generated_")) {
    ctrl.setAttribute("id", new AttrValue("generated_" + Math.random()), root);
          }
        }
      }

    }, PluginWorkspace.MAIN_EDITING_AREA);
```

Change the Default Track Changes (Review) Author Name

Question

How can we change the default author name used for *Tracked Changes* in the *Author Component*?

Answer

The *Track Changes* (Review) author name is determined in the following order:

1. **API** - The review user name can be imposed through the following API:

   ```
   ro.sync.ecss.extensions.api.AuthorReviewController.setReviewerAuthorName(String)
   ```

2. **Options** - If the author name was not imposed from the API, it is determined from the **Author** option set in the **Review** preferences page.
3. **System properties** - If the author name was not imposed from the API or from the application options then the following system property is used:

   ```
   System.getProperty("user.name")
   ```

So, to impose the *Track Changes* author, use one of the following approaches:

1. Use the API to impose the reviewer author name. Here is the online Javadoc of this method: https://www.oxygenxml.com/InstData/Editor/SDK/javadoc/ro/sync/ecss/extensions/api/AuthorReviewController.html#setReviewerAuthorName(java.lang.String)
2. Customize the default options and set a specific value for the **Author** name option set in the **Review** preferences page.
3. Set the value of `user.name` system property when the applet is initializing and before any document is loaded.

Change the DOCTYPE of an Opened XML Document

Question

How to change the DOCTYPE of a document opened in the **Author** mode?

Answer

The following API:

`ro.sync.ecss.extensions.api.AuthorDocumentController.getDoctype()`

allows you to get the DOCTYPE of the current XML file opened in the **Author** mode.

There is also an API method available that would allow you to set the DOCTYPE back to the XML:

`ro.sync.ecss.extensions.api.AuthorDocumentController.setDoctype(AuthorDocumentType)`

Here is an example of how this solution would work:

```
AuthorDocumentType
dt = new AuthorDocumentType("article", "testSystemID", "testPublicID",
            "<!DOCTYPE article PUBLIC \"testPublicID\" \"testSystemID\">");
docController.setDoctype(dt);
```

Basically, you could take the entire content from the existing DOCTYPE,

`ro.sync.ecss.extensions.api.AuthorDocumentType.getContent()`

modify it to your needs, and create another `AuthorDocumentType` object with the new content and with the same public, system IDs.

For example, you could use this API is you want to add unparsed entities in the XML `DOCTYPE`.

Control XML Serialization in the Oxygen XML Author Component

Question

How can I force the Oxygen XML Author Component to save the XML with zero indent size and not to break the line inside *block elements*?

Answer

Usually, in a standalone version of Oxygen XML Editor plugin, the **Editor** > **Format** and **Editor** > **Format** > **XML** preferences pages allow you to control the way the XML is saved on the disk after you edit it in the **Author** mode.

In the editor application (Standalone or Eclipse-based), you can either bundle a default set of options or use the `PluginWorkspace.setGlobalObjectProperty(String, Object)` API:

```
//For not breaking the line
//Long line
pluginWorkspace.setObjectProperty("editor.line.width", new Integer(100000));
//Do not break before inline elements
pluginWorkspace.setObjectProperty("editor.format.indent.inline.elements", false)
;

//For forcing zero indent
//Force indent settings to be controlled by us
pluginWorkspace.setObjectProperty("editor.detect.indent.on.open", false);
//Zero indent size
pluginWorkspace.setObjectProperty("editor.indent.size.v9.2", 0);
```

In the Oxygen XML Author Component, you can either bundle a fixed set of options, or use our Java API to set properties that overwrite the default options:

```
    //For not breaking the line
    //Long line
    AuthorComponentFactory.getInstance().setObjectProperty
("editor.line.width", new Integer(100000));
    //Do not break before inline elements
    AuthorComponentFactory.getInstance().setObjectProperty
("editor.format.indent.inline.elements", false);

    //For forcing zero indent
    //Force indent settings to be controlled by us
    AuthorComponentFactory.getInstance().setObjectProperty
("editor.detect.indent.on.open", false);
    //Zero indent size
    AuthorComponentFactory.getInstance().setObjectProperty
("editor.indent.size.v9.2", 0);
```

Customize the Default Icons for Toolbars/Menus

Question

How can we change the default icons used for the application built-in actions?

Answer

If you look inside the main *JAR* library *[OXYGEN_INSTALL_DIR]*`\lib\oxygen.jar` or *[OXYGEN_INSTALL_DIR]*`\lib\author.jar`, it contains an `images` folder that contains all the images that we use for our buttons, menus, and toolbars.

To overwrite them with your own creations, follow these steps:

1. In the *[OXYGEN_INSTALL_DIR]*`\lib` directory create a folder called `endorsed`.
2. In the `endorsed` folder create another folder called `images`.

3. Add your own images in the `images` folder.

You can use this mechanism to overwrite any kind of resource located in the main *Oxygen JAR library*. The folder structure in the endorsed directory and in the main *Oxygen JAR* must be identical.

Customize the Outline View in Text Mode?

Question

How do I customize the **Outline** view in **Text** mode?

Answer

Suppose that you have the following XML document:

```
<doc startnumber="15">
    <sec counter="no">
        <info/>
        <title>Introduction</title>
      </sec>
    <sec>
        <title>Section title</title>
      <para>Content</para>
        <sec>
            <title>Section title</title>
                <para>Content</para>
        </sec>
    </sec>
    <sec>
            <title>Section title</title>
        <para>Content</para>
      </sec>
</doc>
```

and you want to display the XML content in a simplified Outline view like this:

```
doc "15"
sec Introduction
sec 15 Section title
sec 15.1 Section title
sec 16 Section title
```

Usually an Outline should have the following characteristics:

1. Double clicking in the Outline the corresponding XML content would get selected.
2. When the cursor moves in the opened XML document the Outline would select the proper entry.
3. When modifications occur in the document, the Outline would refresh.

A simple implementation using a Workspace Access plugin type could be something like this:

```
/**
 * Simple Outline for Text mode based on executing XPaths over the text content.
 */
 public class CustomWorkspaceAccessPluginExtension implements
WorkspaceAccessPluginExtension {
  /**
   * The custom outline list.
   */
  private JList customOutlineList;

  /**
   * Maps outline nodes to ranges in document
   */
  private WSXMLTextNodeRange[] currentOutlineRanges;

  /**
   * The current text page
   */
  private WSXMLTextEditorPage currentTextPage;

  /**
   * Disable CaretListener when we select from the CaretListener.
   */
  private boolean enableCaretListener = true;

  /**
   * @see WorkspaceAccessPluginExtension#applicationStarted
(ro.sync.exml.workspace.api.standalone.StandalonePluginWorkspace)
   */
  @Override
  public void applicationStarted
(final StandalonePluginWorkspace pluginWorkspaceAccess) {
```

```
    pluginWorkspaceAccess.addViewComponentCustomizer
(new ViewComponentCustomizer() {
      /**
       * @see ViewComponentCustomizer#customizeView
(ro.sync.exml.workspace.api.standalone.ViewInfo)
       */
      @Override
      public void customizeView(ViewInfo viewInfo) {
        if(
            //The view ID defined in the "plugin.xml"
            "SampleWorkspaceAccessID".equals(viewInfo.getViewID())) {
          customOutlineList = new JList();
          //Render the content in the Outline.
          customOutlineList.setCellRenderer(new DefaultListCellRenderer() {
       /**
        * @see javax.swing.DefaultListCellRenderer#getListCellRendererComponent
(javax.swing.JList, java.lang.Object, int, boolean, boolean)
        */
      @Override
      public Component getListCellRendererComponent
(JList<?> list, Object value, int index,
          boolean isSelected, boolean cellHasFocus) {
        JLabel label = (JLabel) super.getListCellRendererComponent
(list, value, index, isSelected, cellHasFocus);
        String val = null;
        if(value instanceof Element) {
          Element element = ((Element)value);
          val = element.getNodeName();
          if(!"".equals(element.getAttribute("startnumber"))) {
            val += " " + "'" + element.getAttribute("startnumber") + "'";
          }
          NodeList titles = element.getElementsByTagName("title");
          if(titles.getLength() > 0) {
            val += " \"" + titles.item(0).getTextContent() + "\"";
          }
        }
        label.setText(val);
        return label;
      }
    });
    //When we click a node, select it in the text page.
    customOutlineList.addMouseListener(new MouseAdapter() {
     @Override
     public void mouseClicked(MouseEvent e) {
       if(SwingUtilities.isLeftMouseButton(e) && e.getClickCount() == 2) {
          int sel = customOutlineList.getSelectedIndex();
          enableCaretListener = false;
         try {
          currentTextPage.select(currentTextPage.getOffsetOfLineStart
(currentOutlineRanges[sel].getStartLine()) +
currentOutlineRanges[sel].getStartColumn() - 1,
            currentTextPage.getOffsetOfLineStart
(currentOutlineRanges[sel].getEndLine()) +
currentOutlineRanges[sel].getEndColumn());
          } catch (BadLocationException e1) {
           e1.printStackTrace();
         }
          enableCaretListener = true;
        }
       }
    });
     viewInfo.setComponent(new JScrollPane(customOutlineList));
     viewInfo.setTitle("Custom Outline");
  }
 }
});

pluginWorkspaceAccess.addEditorChangeListener(new WSEditorChangeListener() {
  /**
  * @see WSEditorChangeListener#editorOpened(java.net.URL)
  */
  @Override
  public void editorOpened(URL editorLocation) {
   //An editor was opened
   WSEditor editorAccess = pluginWorkspaceAccess.getEditorAccess
(editorLocation, StandalonePluginWorkspace.MAIN_EDITING_AREA);
        if(editorAccess != null) {
          WSEditorPage currentPage = editorAccess.getCurrentPage();
          if(currentPage instanceof WSXMLTextEditorPage) {
            //User editing in Text mode an opened XML document.
            final WSXMLTextEditorPage xmlTP = (WSXMLTextEditorPage) currentPage;
            //Reconfigure outline on each change.
            xmlTP.getDocument().addDocumentListener(new DocumentListener() {
              @Override
              public void removeUpdate(DocumentEvent e) {
                reconfigureOutline(xmlTP);
              }
              @Override
              public void insertUpdate(DocumentEvent e) {
                reconfigureOutline(xmlTP);
              }
              @Override
              public void changedUpdate(DocumentEvent e) {
                reconfigureOutline(xmlTP);
              }
```

```
            });
            JTextArea textComponent = (JTextArea) xmlTP.getTextComponent();
            textComponent.addCaretListener(new CaretListener() {
              @Override
              public void caretUpdate(CaretEvent e) {
              if(currentOutlineRanges != null && currentTextPage != null &&
enableCaretListener) {
                  enableCaretListener = false;
                  //Find the node to select in the outline.
                  try {
                    int line = xmlTP.getLineOfOffset(e.getDot());
                    for (int i = currentOutlineRanges.length - 1; i >= 0; i--) {
              if(line > currentOutlineRanges[i].getStartLine() &&
line < currentOutlineRanges[i].getEndLine()) {
                        customOutlineList.setSelectedIndex(i);
                        break;
                      }
                    }
                  } catch (BadLocationException e1) {
                    e1.printStackTrace();
                  }
                  enableCaretListener = true;
                }
              }
            });
          }
        }
      }
      /**
       * @see WSEditorChangeListener#editorActivated(java.net.URL)
       */
      @Override
      public void editorActivated(URL editorLocation) {
        //An editor was selected, reconfigure the common outline
        WSEditor editorAccess = pluginWorkspaceAccess.getEditorAccess
(editorLocation, StandalonePluginWorkspace.MAIN_EDITING_AREA);
        if(editorAccess != null) {
          WSEditorPage currentPage = editorAccess.getCurrentPage();
          if(currentPage instanceof WSXMLTextEditorPage) {
            //User editing in Text mode an opened XML document.
            WSXMLTextEditorPage xmlTP = (WSXMLTextEditorPage) currentPage;
            reconfigureOutline(xmlTP);
          }
        }
      }
    }, StandalonePluginWorkspace.MAIN_EDITING_AREA);
  }

  /**
   * Reconfigure the outline
   *
   * @param xmlTP The XML Text page.
   */
  protected void reconfigureOutline(final WSXMLTextEditorPage xmlTP) {
    try {
      //These are DOM nodes.
      Object[] evaluateXPath = xmlTP.evaluateXPath("//doc | //sec");
      //These are the ranges each node takes in the document.
      currentOutlineRanges = xmlTP.findElementsByXPath("//doc | //sec");
      currentTextPage = xmlTP;
      DefaultListModel listModel = new DefaultListModel();
      if(evaluateXPath != null) {
        for (int i = 0; i < evaluateXPath.length; i++) {
          listModel.addElement(evaluateXPath[i]);
        }
      }
      customOutlineList.setModel(listModel);
    } catch(XPathException ex) {
      ex.printStackTrace();
    }
  }

  /**
   * @see WorkspaceAccessPluginExtension#applicationClosing()
   */
  @Override
  public boolean applicationClosing() {
    return true;
  }
}
```

Difference Between a Framework (Document Type) and a Plugin Extension

Question

What is the difference between a *Framework* and a *Plugin* Extension?

Answer

There are two possible ways to customize the application:

1. Implement a *plugin*.

   A *plugin* serves a general purpose and influences any type of XML file that you open in Oxygen XML Editor plugin.

   For the Oxygen XML Editor plugin Plugins API, Javadoc, samples, and documentation, go to https://www.oxygenxml.com/oxygen_sdk.html#Developer_Plugins
2. Create or modify the document type that is associated to your specific XML vocabulary.

   This document type can be used, for instance, to provide custom actions for your type of XML files and to mount them on the toolbar, menus, and contextual menus.

   For example, if the end users are editing DITA documents, all the toolbar actions that are specific for DITA are provided by the DITA *framework*. If you look in the **Document Type Association** preferences page there is a *DITA* document type. If you edit that document type you will see that it has an **Author** tab in the **Document Type Configuration** dialog box. The subtabs in this tab can be used to define custom DITA actions and add them to the toolbars, main menus, or contextual menus.

   For information about developing your own document types (*frameworks*), see the Advanced Framework Customization on page 1230 section.

   If you look on disk in the *[OXYGEN_INSTALL_DIR]*`\frameworks\dita` folder, there is a file called `dita.framework`. That file gets updated when you edit a document type from the **Document Type Association** preferences page. Then you can share that updated file with all users.

   The same folder contains some *JAR* libraries. These libraries contain custom Java operations that are called when the user presses certain toolbar actions.

   We have an *Oxygen SDK* that contains the Java sources from all the DITA Java customizations:

   https://www.oxygenxml.com/oxygen_sdk.html#XML_Editor_Authoring_SDK

Related Information:

Add a Custom Operation to an Existing Framework on page 1256

Disable Context-Sensitive Menu Items for Custom Author Actions

Question

Is there a way to disable menu items for custom **Author** mode actions depending on the cursor context?

Answer

By default, Oxygen XML Editor plugin does not toggle the enabled/disabled states for actions based on whether or not the activation XPath expressions for that certain **Author** mode action are fulfilled. This is done because the actions can be many and evaluating XPath expression on each cursor move can lead to performance problems. However, if you have your own *ro.sync.ecss.extensions.api.ExtensionsBundle* implementation you can overwrite the method:

`ro.sync.ecss.extensions.api.ExtensionsBundle.createAuthorExtensionStateListener()`

and when the extension state listener gets activated, you can use the API like this:

```
    /**
     * @see ro.sync.ecss.extensions.api.AuthorExtensionStateListener#activated
(ro.sync.ecss.extensions.api.AuthorAccess)
     */
    public void activated(final AuthorAccess authorAccess) {

      //Add a caret listener to enable/disable extension actions:
authorAccess.getEditorAccess().addAuthorCaretListener(new AuthorCaretListener()
{
    @Override
    public void caretMoved(AuthorCaretEvent caretEvent) {
      try {
        Map<String, Object> authorExtensionActions =
```

```
authorAccess.getEditorAccess().getActionsProvider().getAuthorExtensionActions();
        //Get the action used to insert a paragraph. It's ID is "paragraph"
        AbstractAction insertParagraph = (
AbstractAction) authorExtensionActions.get("paragraph");
        //Evaluate an XPath expression in context of the current node
     Object[] evaluateXPath = authorAccess.getDocumentController().evaluateXPath
(".[ancestor-or-self::p]", false, false, false, false);
        if(evaluateXPath != null && evaluateXPath.length > 0 &&
evaluateXPath[0] != null) {
          //We are inside a paragraph, disable the action.
          insertParagraph.setEnabled(false);
        } else {
          //Enable the action
          insertParagraph.setEnabled(true);
        }
      } catch (AuthorOperationException e) {
        e.printStackTrace();
      }
    }
  });
```

When the extension is deactivated, you should remove the *CaretListener* to avoid adding multiple listeners that perform the same functionality.

Dynamically Add Form Controls Using a Styles Filter

Question

How do I add form controls using an API?

Answer

Usually, a form control is added from the CSS using one of the built-in form controls. However, in some cases you do not have all the information you need to properly initialize the form control at CSS level. In these cases you can add the form controls by using the API, more specifically *ro.sync.ecss.extensions.api.StylesFilter*.

For instance, if you want a combo box form control and the values to populate the combo are specified inside a file (or they come from a database). Here is how to add the form control from the API:

```
public class SDFStylesFilter implements StylesFilter {

 public Styles filter(Styles styles, AuthorNode authorNode) {
  if(authorNode.getType() == AuthorNode.NODE_TYPE_PSEUDO_ELEMENT
      && "before".equals(authorNode.getName())) {
    authorNode = authorNode.getParent();
   if ("country".equals(authorNode.getName())) {
    // This is the BEFORE pseudo element of the "country" element.
    // Read the supported countries from the configuration file.
    Map<String, Object> formControlArgs = new HashMap<String, Object>();
    formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_EDIT, "#text");
    formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_TYPE,
          InplaceEditorArgumentKeys.TYPE_COMBOBOX);
    // This will be a comma separated enumeration: France, Spain, Great Britain
    String countries = readCountriesFromFile();
    formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_VALUES, countries);
    formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_EDITABLE, "false");

    // We also add a label in form of the form control.
    Map<String, Object> labelProps = new HashMap<String, Object>();
    labelProps.put("text", "Country: ");
    labelProps.put("styles", "* {width: 100px; color: gray;}");
    StaticContent[] mixedContent = new StaticContent[]
           {new LabelContent(labelProps),new EditorContent(formControlArgs)};
    styles.setProperty(Styles.KEY_MIXED_CONTENT, mixedContent);
      }
    }

    // The added form control is the only way the element can be edited.
    if ("country".equals(authorNode.getName())) {
      styles.setProperty(Styles.KEY_VISIBITY, "-oxy-collapse-text");
    }

    return styles;
  }
}
```

If the execution of the `formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_VALUES, countries);` line consumes too much execution time (for example, if it connects to a database or if it needs

to extract data from a very large file), you can choose to delay it until the values are actually needed by the form control. This approach is called *lazy evaluation* and can be implemented as follows:

```
formControlArgs.put(InplaceEditorArgumentKeys.PROPERTY_VALUES,
          new LazyValue<List<CIValue>>() {
  public java.util.List<CIValue> get() {
    // We avoid reading the possible values until they are actually requested.
    // This will be a List with CIValues created over countries:
           France, Spain, Great Britain
    return readCountriesFromFile();
  }
});
```

The lazy evaluation approach can be used for the following form controls properties:

- `InplaceEditorArgumentKeys.PROPERTY_VALUES`
- `InplaceEditorArgumentKeys.PROPERTY_LABELS`
- `InplaceEditorArgumentKeys.PROPERTY_TOOLTIPS`

The full source code for this example is available inside the Oxygen SDK.

Dynamically Modify the Content Inserted by the Author

Question

Is there a way to insert typographic quotation marks instead of double quotes?

Answer

By using the API you can set a document filter to change the text that is inserted in the document in **Author** mode. You can use this method to change the insertion of double quotes with the typographic quotes.

Here is some sample code:

```
    authorAccess.getDocumentController().setDocumentFilter
(new AuthorDocumentFilter() {
    /**
     * @see ro.sync.ecss.extensions.api.AuthorDocumentFilter#insertText
(ro.sync.ecss.extensions.api.AuthorDocumentFilterBypass, int, java.lang.String)
     */
    @Override
    public void insertText(AuthorDocumentFilterBypass filterBypass,
int offset, String toInsert) {
      if(toInsert.length() == 1 && "\"".equals(toInsert)) {
        //User typed a quote but he actually needs a smart quote.
        //So we either have to add \u201E (start smart quote)
        //Or we add \u201C (end smart quote)
        //Depending on whether there's already a start smart quote inserted
in the current paragraph.

      try {
        AuthorNode currentNode =
authorAccess.getDocumentController().getNodeAtOffset(offset);
        int startofTextInCurrentNode = currentNode.getStartOffset();
        if(offset > startofTextInCurrentNode) {
          Segment seg = new Segment();
        authorAccess.getDocumentController().getChars(startofTextInCurrentNode,
offset - startofTextInCurrentNode, seg);
          String previosTextInNode = seg.toString();
          boolean insertStartQuote = true;
          for (int i = previosTextInNode.length() - 1; i >= 0; i--) {
            char ch = previosTextInNode.charAt(i);
            if('\u201C' == ch) {
              //Found end of smart quote, so yes, we should insert a start one
              break;
            } else if('\u201E' == ch) {
              //Found start quote, so we should insert an end one.
              insertStartQuote = false;
              break;
            }
          }

          if(insertStartQuote) {
            toInsert = "\u201E";
          } else {
            toInsert = "\u201C";
          }
        }
      } catch (BadLocationException e) {
        e.printStackTrace();
      }
    }
```

```
    System.err.println("INSERT TEXT |" + toInsert + "|");
    super.insertText(filterBypass, offset, toInsert);
  }
});
```

You can find the online Javadoc for `AuthorDocumentFilter` API here: https://www.oxygenxml.com/InstData/Editor/SDK/javadoc/ro/sync/ecss/extensions/api/AuthorDocumentFilter.html

An alternative to using a document filtering is the use of a *ro.sync.ecss.extensions.api.AuthorSchemaAwareEditingHandlerAdapter*, which has clear callbacks indicating the source from where the API is called (Paste, Drag and Drop, Typing).

Dynamically Open File in Oxygen XML Editor plugin Distributed via JavaWebStart

Question

How can we dynamically open a file in an Oxygen XML Editor plugin distributed via JWS?

Answer

The JWS packager Ant build file that is included with Oxygen XML Editor plugin signs by default the JNLP file (this means that a copy of it is included in the main *JAR* library) in this step:

```
<copy file="${outputDir}/${packageName}/${productName}.jnlp"
          tofile="${home}/JNLP-INF/APPLICATION.JNLP"/>
```

Signing the JNLP file is required by newer Java versions and means that it is impossible to automatically generate a JNLP file containing some dynamic arguments. The solution is to use the signed JNLP template feature of Java 7, bundle inside the *JAR* library a signed `APPLICATION_TEMPLATE.JNLP` instead of an `APPLICATION.JNLP` with a wildcard command line argument:

```
<application-desc main-class="ro.sync.jws.JwsDeployer">
   <argument>*</argument>
</application-desc>
```

Then you can replace the wildcard in the external placed JNLP to the actual, dynamic command line arguments value.

A different, more complicated approach would be to have the JNLP file signed and always referenced as a URL argument a location like this:

```
http://path/to/server/redirectEditedURL.php
```

When the URL gets clicked on the client side you would also call a PHP script on the server side that would update the redirect location for `redirectEditedURL.php` to point to the clicked XML resource. Then the opened Oxygen XML Editor plugin would try to connect to the redirect PHP and be redirected to open the XML.

Extend the Java Functionality of an Existing Framework (Document Type)

Question

How can I change the way a DocBook 4 `xref` displays in **Author** mode based on what element is at the `linkend`?

Answer

Follow these steps:

1. Create a Maven Java project and add a dependency on the Oxygen XML Editor plugin classes:

   ```
   <dependency>
       <groupId>com.oxygenxml</groupId>
       <artifactId>oxygen-sdk</artifactId>
       <version>${oxygen.version}</version>
   </dependency>
   ```

   where `${oxygen.version}` is the version of Oxygen XML Editor plugin.

Alternatively, if the project does not use Maven, all the transitive dependencies of the above Maven artifact need to be added to the classpath of the project.

2. Also add the *[OXYGEN_INSTALL_DIR]*`\frameworks\docbook\docbook.jar` to the class path of the project.
3. Create a class that extends *ro.sync.ecss.extensions.docbook.DocBook4ExtensionsBundle* and overwrites the method: *ro.sync.ecss.extensions.api.ExtensionsBundle#createLinkTextResolver()*
4. For your custom resolver implementation you can start from the Java sources of the *ro.sync.ecss.extensions.docbook.link.DocbookLinkTextResolver* (the Java code for the entire DocBook customization is present in a subfolder in the Oxygen SDK).
5. Pack your extension classes in a *JAR* file. Copy the *JAR* to: *[OXYGEN_INSTALL_DIR]*`\frameworks\docbook\custom.jar`.
6. Start Oxygen XML Editor plugin.
7. Open the **Preferences** dialog box and go to **Document Type Association**. Edit the DocBook 4 document type. In the **Classpath** list add the path to the new *JAR*. In the extensions list select your custom extension instead of the regular DocBook one.
8. You can rename the document type and the `docbook` *framework* folder to something else (such as `custom_docbook`) and share it with others.

Impose Custom Options for Authors

Question

How to enable *Track Changes* at startup?

Answer

There are two ways to enable *Track Changes* for every document that you open:

1. You could customize the default options that are used by your authors and set the **Track Changes - Initial State** option to **Always On**.
2. Use an API to toggle the *Track Changes* state after a document is opened in **Author** mode:

```
// Check the current state of Track Changes
boolean trackChangesOn = authorAccess.getReviewController().isTrackingChanges();
if (!trackChangesOn) {
  // Set Track Changes state to On
  authorAccess.getReviewController().toggleTrackChanges();
}
```

Insert an Element with all the Required Content

Question

I am inserting a DITA `image` XML element using the API that points to a certain resource and has required content. Can the required content be automatically inserted by the application?

Answer

The API `ro.sync.ecss.extensions.api.AuthorSchemaManager` can propose valid elements that can be inserted at the specific offset. Using the method `AuthorSchemaManager.createAuthorDocumentFragment(CIElement)`, you can convert the proposed elements to *document fragments* (which have all the required content filled in) that can then be inserted in the document.

```
    AuthorSchemaManager schemaManager =
this.authorAccess.getDocumentController().getAuthorSchemaManager();

    WhatElementsCanGoHereContext context =
schemaManager.createWhatElementsCanGoHereContext
(this.authorAccess.getEditorAccess().getCaretOffset());

    List<CIElement> possibleElementsAtCaretPosition =
schemaManager.whatElementsCanGoHere(context);
    loop: for (int i = 0; i < possibleElementsAtCaretPosition.size(); i++) {
```

```
      CIElement possibleElement = possibleElementsAtCaretPosition.get(i);
      List<CIAttribute> attrs = possibleElement.getAttributes();
      if(attrs != null) {
        for (int j = 0; j < attrs.size(); j++) {
          CIAttribute ciAttribute = attrs.get(j);
          if (ciAttribute.getName().equals("class")) {
            if (ciAttribute.getDefaultValue() != null
                 && ciAttribute.getDefaultValue().contains("  topic/image ")) {
              //Found a CIElement for image
   //Create a fragment that contains all required child elements already built.
              AuthorDocumentFragment frag =
schemaManager.createAuthorDocumentFragment(possibleElement);
              //Now set the @href to it.
              //Ask the user and obtain a value for the @href
              //Then:

          String href = "test.png";
          List<AuthorNode> nodes = frag.getContentNodes();
          if(!nodes.isEmpty()) {
            AuthorElement imageEl = (AuthorElement) nodes.get(0);
            imageEl.setAttribute("href", new AttrValue(href));
          }
          //And insert the fragment.
          this.authorAccess.getDocumentController().insertFragment
(this.authorAccess.getEditorAccess().getCaretOffset(), frag);
          break loop;
        }
      }
    }
  }
}
```

Related Information:

AuthorDocumentFragment Class

Modify the XML Content on Open

Question

I have a bunch of DITA documents that have a fixed path the image `src` attributes. These paths are not valid and I am trying to move away from this practice by converting it in to relative paths. When an XML document is opened, can I trigger the Java API to change the fixed path to a relative path?

Answer

The Plugins SDK contains a sample plugin type called **WorkspaceAccess**. Such a plugin is notified when the application starts and it can do what you want in a couple of ways:

1. Add a listener that notifies you when the user opens an XML document. Then if the XML document is opened in the **Author** visual editing mode you can use our *Author API* to change attributes:

```
    pluginWorkspaceAccess.addEditorChangeListener(new  WSEditorChangeListener() {
       /**
        * @see WSEditorChangeListener#editorOpened(java.net.URL)
        */
       @Override
       public void editorOpened(URL editorLocation) {
         WSEditor openedEditor = pluginWorkspaceAccess.getCurrentEditorAccess
(StandalonePluginWorkspace.MAIN_EDITING_AREA);
         if(openedEditor.getCurrentPage() instanceof WSAuthorEditorPage) {
         WSAuthorEditorPage authPage = (WSAuthorEditorPage)
openedEditor.getCurrentPage();
         AuthorDocumentController docController =
authPage.getDocumentController();
         try {
          //All changes will be undone by pressing Undo once.
          docController.beginCompoundEdit();
          fixupImageRefs(docController,
           docController.getAuthorDocumentNode());
         } finally {
            docController.endCompoundEdit();
           }
         }
       }

       private void fixupImageRefs
(AuthorDocumentController docController, AuthorNode authorNode) {
           if(authorNode instanceof AuthorParentNode) {
             //Recurse
             List<AuthorNode> contentNodes =
((AuthorParentNode)authorNode).getContentNodes();
             if(contentNodes != null) {
                for (int i = 0; i < contentNodes.size(); i++) {
                  fixupImageRefs(docController, contentNodes.get(i));
```

```
                }
              }
            }
            if(authorNode.getType() == AuthorNode.NODE_TYPE_ELEMENT) {
              AuthorElement elem = (AuthorElement) authorNode;
              if("image".equals(elem.getLocalName())) {
                 if(elem.getAttribute("href") != null) {
                   String originalHref = elem.getAttribute("href").getValue();
    URL currentLocation = docController.getAuthorDocumentNode().getXMLBaseURL();
                   //TODO here you compute the new href.
                   String newHref = null;
                  docController.setAttribute("href", new AttrValue(newHref), elem);
                }
              }
            }
          }
        },
    StandalonePluginWorkspace.MAIN_EDITING_AREA);
```

2. An API to open XML documents in the application:

```
ro.sync.exml.workspace.api.Workspace.open(URL)
```

So you can create up a plugin that automatically opens one by one XML documents from a certain folder in the application, makes modifications to them, saves the content by calling:

```
ro.sync.exml.workspace.api.editor.WSEditorBase.save()
```

and then closes the editor:

```
ro.sync.exml.workspace.api.Workspace.close(URL)
```

Modify the XML Content on Save

Question

Is it possible to get Oxygen XML Editor plugin to update the revised date on a DITA document when it's saved?

Answer

The Plugins SDK contains a sample plugin type called **WorkspaceAccess**.Such a plugin is notified when the application starts.

You can add a listener that notifies you before the user saves an XML document. Then if the XML document is opened in the **Author** visual editing mode you can use our *Author API* to change attributes before the save takes place:

```
      @Override
      public void applicationStarted
(final StandalonePluginWorkspace pluginWorkspaceAccess) {
       pluginWorkspaceAccess.addEditorChangeListener
(new WSEditorChangeListener(){
         //An editor was opened
        @Override
        public void editorOpened(URL editorLocation) {
          final WSEditor editorAccess = pluginWorkspaceAccess.getEditorAccess
(editorLocation, PluginWorkspace.MAIN_EDITING_AREA);
          if(editorAccess != null){
            editorAccess.addEditorListener
(new ro.sync.exml.workspace.api.listeners.WSEditorListener(){
              //Editor is about to be saved
              @Override
              public boolean editorAboutToBeSavedVeto(int operationType) {
                if(EditorPageConstants.PAGE_AUTHOR.equals
(editorAccess.getCurrentPageID())){
                  WSAuthorEditorPage authorPage =
(WSAuthorEditorPage) editorAccess.getCurrentPage();
                  AuthorDocumentController controller =
authorPage.getDocumentController();
                  try {
                    //Find the revised element
                    AuthorNode[] nodes = controller.findNodesByXPath
("//revised", true, true, true);
                    if(nodes != null && nodes.length > 0){
                      AuthorElement revised = (AuthorElement) nodes[0];
                      //Set the modified attribute to it...
                      controller.setAttribute("modified",
new AttrValue(new Date().toString()), revised);
                    }
                  } catch (AuthorOperationException e) {
                    e.printStackTrace();
```

```
                }
              }
              //And let the save continue..
              return true;
            }
          });
        }
      }
    }, PluginWorkspace.MAIN_EDITING_AREA);
  }
```

Multiple Rendering Modes for the Same Document in Author Mode

Question

How can we add multiple buttons, each showing a different visualization mode of the same document in **Author** mode?

Answer

In the toolbar of the **Author** mode there is a **Styles** drop-down menu that contains *alternate CSS styles* for the same document. To add an *alternate* CSS stylesheet, open the **Preferences** dialog box , go to **Document Type Association**, select the document type associated with your documents and press **Edit**. In the **Document Type** configuration dialog box that appears, go to the **Author** tab, and in the **CSS** subtab add references to *alternate* CSS stylesheets.

For example, one of the alternate CSS stylesheets that we offer for the DITA document type is located here:

```
[OXYGEN_INSTALL_DIR]/frameworks/dita/css_classed/hideColspec.css
```

If you open it, you will see that it imports the *main CSS* and then adds selectors of its own.

Obtain a DOM Element from *AuthorNode* or *AuthorElement*

Question

Can a DOM Element be obtained from an `AuthorNode` or an `AuthorElement`?

Answer

No, a DOM Element cannot be obtained from an `AuthorNode` or an `AuthorElement`. The `AuthorNode` structure is also hierarchical but the difference is that all the text content is kept in a single text buffer instead of having individual text nodes.

We have an image in the Javadoc documentation that explains this situation: https://www.oxygenxml.com/InstData/Editor/SDK/javadoc/ro/sync/ecss/extensions/api/node/AuthorDocumentFragment.html

Obtain the Currently Selected Element Using the Author API

Question

In **Author** mode, if an element is fully selected, I want to perform an action on it. If not, I want to perform an action on the node that is located at the cursor position. Is this possible via the API?

Answer

When an element is fully selected by the user the selection start and end offsets are actually outside of the node's offset bounds. So using *AuthorDocumentController.getNodeAtOffset* will actually return the parent of the selected node. We have some special API that makes it easier for you to determine this situation: *WSAuthorEditorPageBase.getFullySelectedNode()*.

```
AuthorDocumentController controller = authorPageAccess.getDocumentController();
AuthorAccess authorAccess = authorPageAccess.getAuthorAccess();
int caretOffset = authorAccess.getEditorAccess().getCaretOffset();

    AuthorElement nodeAtCaret =
(AuthorElement) authorAccess.getEditorAccess().getFullySelectedNode();
```

```
    if (nodeAtCaret == null) {
     //We have no fully selected node. We can look at the cursor offset.
     nodeAtCaret = (AuthorElement)
authorAccess.getDocumentController().getNodeAtOffset(caretOffset);
    //Or we could look at the selection start and end, see which node is
the parent of each offset and get the closest common ancestor.
}
```

Run XSLT or XQuery Transformations

Question

Can I run XSL 2.0 / 3.0 transformation with Saxon EE using the *Oxygen SDK*?

Answer

The API class *ro.sync.exml.workspace.api.util.XMLUtilAccess* allows you to create an XSLT Transformer that implements the JAXP interface *javax.xml.transform.Transformer*. Then this type of transformer can be used to transform XML. Here's just an example of transforming when you have an *AuthorAccess* API available:

```
     InputSource is = new org.xml.sax.InputSource
(URLUtil.correct(new File("test/personal.xsl")).toString());
     xslSrc = new SAXSource(is);
     javax.xml.transform.Transformer transformer =
authorAccess.getXMLUtilAccess().createXSLTTransformer
(xslSrc, null, AuthorXMLUtilAccess.TRANSFORMER_SAXON_ENTERPRISE_EDITION);
     transformer.transform(new StreamSource(new File("test/personal.xml")),
new StreamResult(new File("test/personal.html")));
```

If you want to create the transformer from the *plugin* side, you can use this method instead: *ro.sync.exml.workspace.api.PluginWorkspace.getXMLUtilAccess()*.

Save a New Document with a Predefined File Name Pattern

Question

Is it possible to get Oxygen XML Editor plugin to automatically generate a file name comprising a UUID plus file extension using the SDK?

Answer

This could be done implementing a *plugin* for Oxygen XML Editor plugin using the Plugins SDK.

There is a type of *plugin* called *Workspace Access* that can be used to add a listener to be notified before an opened editor is saved. The implemented *plugin* would intercept the save events when a newly created document is untitled and display an alternative chooser dialog box, then save the topic with the proper name.

The Java code would look like this:

```
  private static class CustomEdListener extends WSEditorListener{
    private final WSEditor editor;
    private final StandalonePluginWorkspace
        pluginWorkspaceAccess;
    private boolean saving = false;
    public CustomEdListener
(StandalonePluginWorkspace pluginWorkspaceAccess, WSEditor editor) {
            this.pluginWorkspaceAccess = pluginWorkspaceAccess;
            this.editor = editor;
    }
    @Override
    public boolean editorAboutToBeSavedVeto(int operationType) {
      if(! saving &&
        editor.getEditorLocation().toString().contains("Untitled")) {
        File chosenDir = pluginWorkspaceAccess.chooseDirectory();
        if(chosenDir != null) {
          final File chosenFile =
new File(chosenDir, UUID.randomUUID().toString() + ".dita");
        SwingUtilities.invokeLater(new Runnable() {
            @Override
              public void run() {
              try {
                saving = true;
                editor.saveAs(new URL(chosenFile.toURI().toASCIIString()));
              } catch (MalformedURLException e) {
                e.printStackTrace();
              } finally {
```

```
                saving = false;
              }
            }
          });
        }

        //Reject the original save request.
        return false;
      }
      return true;
    }
  }

    @Override
    public void applicationStarted
(final StandalonePluginWorkspace pluginWorkspaceAccess) {
    pluginWorkspaceAccess.addEditorChangeListener(new WSEditorChangeListener() {
      @Override
      public void editorOpened(URL editorLocation) {
        final WSEditor editor = pluginWorkspaceAccess.getEditorAccess
(editorLocation, PluginWorkspace.MAIN_EDITING_AREA);
      if(editor !=
null && editor.getEditorLocation().toString().contains("Untitled")) {

        //Untitled editor
 editor.addEditorListener(new CustomEdListener(pluginWorkspaceAccess, editor));
        }
      }
     },
  PluginWorkspace.MAIN_EDITING_AREA);
.............................................
```

Split Paragraph on Enter (Instead of Showing Content Completion List)

Question

Is it possible to split the paragraph on **Enter** instead of showing the content completion list?

Answer

Yes, it is possible by creating your own custom operation.

To obtain this behavior, follow this procedure:

1. Create a custom **Author** mode operation that handles the split. You can use the `AuthorDocumentController.split` API to achieve this.
2. Create a JAR library that contains its compiled version.
3. Open the **Preferences** dialog box , go to **Document Types Association**, and select your *framework*.
4. Click **Edit** and in the **Document Type** configuration dialog box, go to the **Classpath** tab and add a reference to the JAR library for your custom operation.
5. Go to the **Author** tab, then go to the **Actions** subtab.
6. Click the **New** button and use the **Action** dialog box to create your own paragraph split action.
7. Make sure you assign **Enter** as the **Shortcut Key** and specify your custom operation in the **Operations** section.

Result: Now, when you press **Enter**, your Java operation will be invoked to split the paragraph instead of opening the *Content Completion Assistant*.

Tip: The *Content Completion Assistant* can still be invoked by using the **Ctrl+Space** keyboard shortcut.

Use Custom Rendering Styles for Entity References, Comments, or PIs

Problem

Is there a way to display entity references in the **Author** mode without the distinct gray background and tag markers?

Solution

There is a built-in CSS stylesheet in the Oxygen XML Editor plugin libraries that is used when styling content in the **Author** mode, no matter what CSS you use. This CSS has the following content:

```
@namespace oxy url('http://www.oxygenxml.com/extensions/author');
```

```
@namespace xi "http://www.w3.org/2001/XInclude";
@namespace xlink "http://www.w3.org/1999/xlink";
@namespace svg "http://www.w3.org/2000/svg";
@namespace mml "http://www.w3.org/1998/Math/MathML";

oxy|document {
    display:block !important;
}

oxy|cdata {
    display:morph !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|processing-instruction {
    display:block !important;
    color: rgb(139, 38, 201) !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|comment {
    display:morph !important;
    color: rgb(0, 100, 0) !important;
    background-color:rgb(255, 255, 210) !important;
    white-space:pre-wrap !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|reference:before,
oxy|entity[href]:before{
  link: attr(href) !important;
  text-decoration: underline !important;
  color: navy !important;

  margin: 2px !important;
  padding: 0px !important;
}

oxy|reference:before {
  display: morph !important;
  content: url(../images/editContent.gif) !important;
}

oxy|entity[href]:before{
  display: morph !important;
  content: url(../images/editContent.gif) !important;
}

oxy|reference,
oxy|entity {
    editable:false !important;
    background-color: rgb(240, 240, 240) !important;
    margin:0px !important;
    padding: 0px !important;
}

oxy|reference {
    display:morph !important;
}

oxy|entity {
    display:morph !important;
}

oxy|entity[href] {
  border: 1px solid rgb(175, 175, 175) !important;
  padding: 0.2em !important;
}

xi|include {
    display:block !important;
    margin-bottom: 0.5em !important;
    padding: 2px !important;
}
xi|include:before,
xi|include:after{
    display:inline !important;
    background-color:inherit !important;
    color:#444444 !important;
    font-weight:bold !important;
}

xi|include:before {
    content:url(../images/link.gif) attr(href)  !important;
    link: attr(href) !important;
}
xi|include[xpointer]:before {
```

```
    content:url(../images/link.gif) attr(href) " " attr(xpointer) !important;
    link: oxy_concat(attr(href), "#", attr(xpointer)) !important;
}

xi|fallback {
    display:morph !important;
    margin: 2px !important;
    border: 1px solid #CB0039 !important;
}

xi|fallback:before {
    display:morph !important;
    content:"XInclude fallback: " !important;
    color:#CB0039 !important;
}

oxy|doctype {
    display:block !important;
    background-color: transparent !important;
    color:blue !important;
    border-width:0px !important;
    margin:0px !important;
    padding: 2px !important;
}

oxy|error {
    display:morph !important;
    editable:false !important;
    white-space:pre !important;
    color: rgb(178, 0, 0) !important;
    font-weight:bold !important;
}

*[xlink|href]:before {
    content:url(../images/link.gif);
    link: attr(xlink|href) !important;
}


/*No direct display of the MathML and SVG images.*/
svg|svg{
 display:inline !important;
    white-space: trim-when-ws-only;
}
svg|svg svg|*{
    display:none !important;
    white-space:normal;
}

mml|math{
 display:inline !important;
    white-space: trim-when-ws-only;
}
mml|math mml|*{
    display:none !important;
    white-space: normal;
}
```

In the CSS used for rendering the XML in **Author** mode, do the following:

1. Import the special **Author** mode namespace.
2. Use a special selector to customize the `entity` node.

Example:

```
@namespace oxy url('http://www.oxygenxml.com/extensions/author');
oxy|entity {
   background-color: inherit !important;
   margin:0px !important;
   padding: 0px !important;
    -oxy-display-tags:none;
}
```

You can overwrite styles in the predefined CSS to customize style comments, processing instructions, and *CData* sections. You can also customize the way `xi:include` elements are rendered.

Use a Custom View with the Oxygen XML Editor plugin Distribution

Question

Is it possible to create a custom view in Eclipse that can insert certain XML fragments in the documents opened with the Oxygen XML Editor plugin?

Answer

Here you can find more information about the Eclipse part of the *Oxygen SDK*:

https://www.oxygenxml.com/oxygen_sdk.html#oXygen_Eclipse_plugin

Use the provided Oxygen XML Editor plugin sample project as a starting point.
From any custom view/component you can have singleton access to the using the `ro.sync.exml.workspace.api.PluginWorkspaceProvider.getPluginWorkspace()` API.

The Java code for inserting a certain XML fragment in the currently open editor (either in the **Text** or **Author** editing modes) would look like this:

```
    WSEditor currentEditorAccess = PluginWorkspaceProvider.getPluginWorkspace().
getCurrentEditorAccess(PluginWorkspace.MAIN_EDITING_AREA);
    if(currentEditorAccess.getCurrentPage() instanceof WSXMLTextEditorPage) {
      //Editor opened in Text page
      WSXMLTextEditorPage tp =
(WSXMLTextEditorPage) currentEditorAccess.getCurrentPage();

      //You can access an API to insert text in the XML content
//      tp.getDocument().insertString(tp.getCaretOffset(), "<testTag/>", null);
      //This is the internal StyledText implementation
//      tp.getTextComponent()
      //You can use this XPath API to find the range of an XML element.
//      tp.findElementsByXPath(xpathExpression)
 } else if(currentEditorAccess.getCurrentPage() instanceof WSAuthorEditorPage) {
      //Editor opened in Author page
//      try {
        WSAuthorEditorPage authPage = (WSAuthorEditorPage)
currentEditorAccess.getCurrentPage();

        //Then you can do stuff like this to insert XML at cursor position
//        authPage.getDocumentController().insertXMLFragment("<testTag/>",
authPage.getCaretOffset());
//      } catch (AuthorOperationException e) {
//        // TODO Auto-generated catch block
//        e.printStackTrace();
//      }
    }
```

Extension Points for Oxygen XML Editor plugin

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The Oxygen XML Editor plugin includes a number of *extension* points, which can be implemented by other Eclipse *plugins* that depend on it. All of them are listed in the `plugin.xml` file, along with samples of usage code. The following is a list with short descriptions for some of the most useful extension points:

Extension point: *ditaKeyDefinitionManager*

It can be used to provide an external keys manager, responsible of providing DITA keys that are then used for editing and resolving referenced content. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/ditaKeyDefinitionManager.exsd`.

Extension point: *actionBarContributorCustomizer*

A very useful extension point that can add or remove actions from various menus, contextual menus, and toolbars that are contributed by the Oxygen XML Editor plugin. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/actionBarContributorCustomizer.exsd`.

Extension point: *customEditorInputCreator*

Use this extension point to create your custom editor input for a certain resource that will be opened by the Oxygen XML Editor plugin when clicking links. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/customEditorInputCreator.exsd`.

Extension point: *editorAdapterContributor*

When an adapter is requested to the opened XML editor you can provide your custom adapter from your external *plugin*. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/editorAdapterContributor.exsd`.

Extension point: *extensionsBundleContributor*

Use this extension point to provide your own *ExtensionsBundle* implementation for a certain opened XML resource. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/extensionsBundleContributor.exsd`.

Extension point: *stylesFilterContributor*

Use this extension point to provide your own *StylesFilter* implementation for special visual rendering when an XML resource is opened in the **Author** editing mode. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/stylesFilterContributor.exsd`.

Extension point: *XMLRefactoringContributor*

Contributes a folder that contains the additional XML Refactoring operation descriptor files and XQuery scripts that can be used by the batch XML refactoring actions. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/xmlRefactoringContributor.exsd`.

Extension point: *workspaceAccessPlugin*

Use this extension point to be notified when Oxygen XML Editor plugin has started. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/exsd-schema/workspaceAccessExtension.exsd`.

Extension point: *AuthorStylesheet*

Use this extension point to provide a stylesheet layer that will be used when rendering any XML document in **Author** mode. Its EXSD schema can be found in: `OXYGEN_PLUGIN_DIR/exsd-schema/authorStylesheetContributor.exsd`.

Tools

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Topics:

- Refactoring XML Documents
- Generating Sample XML Files
- Converting Schema to Another Schema Language
- Converting Database to XML Schema
- JSON to XML Converter
- XML to JSON Converter
- Compiling an XSL Stylesheet for Saxon
- Generate Documentation
- Canonicalizing Files
- Signing Files
- Verifying Signature
- WSDL SOAP Analyzer
- XML Schema Regular Expressions Builder

Oxygen XML Editor plugin includes a variety of helpful tools to help you accomplish XML-related tasks. This section presents many of those tools. These tools are available in the **Tools** menu and some of them can be launched through keyboard shortcuts or command-line scripts.

Refactoring XML Documents

In the life cycle of XML documents there are instances when the XML structure needs to be changed to accommodate various needs. For example, when an associated schema is updated, an attribute may have been removed, or a new element added to the structure.

These types of situations cannot be resolved with a traditional *Find/Replace* tool, even if the tool accepts regular expressions. The problem becomes even more complicated if an XML document is computed or referenced from multiple modules, since multiple resources need to be changed.

To assist you with these types of refactoring tasks, Oxygen XML Editor plugin includes a specialized **XML Refactoring** tool that helps you manage the structure of your XML documents.

XML Refactoring Tool

The **XML Refactoring** tool is presented in the form of an easy to use wizard that is designed to reduce the time and effort required to perform various structure management tasks. For example, you can insert, delete, or rename an attribute in all instances of a particular element that is found in all documents within your project.

To access the tool, select the **XML Refactoring** action from one of the following locations:

- The **XML Tools** menu.
- The **Refactoring** submenu from the contextual menu in the **Navigator** view.
- The **Refactoring** submenu from the contextual menu in the **DITA Maps Manager** view.

Note: The predefined refactoring operations are also available from the **Refactoring** submenu in the contextual menu of **Author** or **Text** mode. This is useful because by selecting the operations from the contextual menu, Oxygen XML Editor plugin considers the editing context to skip directly to the wizard page of the appropriate operation and to help you by preconfiguring some of the parameter values. For your convenience, the last 5

operations that were finished or previewed also appear in the **Refactoring** submenu of the contextual menu in the **DITA Maps Manager**.

XML Refactoring Wizard

The XML Refactoring tool includes the following wizard pages:

Refactoring operations

The first wizard page presents the available operations, grouped by category. To search for an operation, you can use the filter text box at the top of the page.

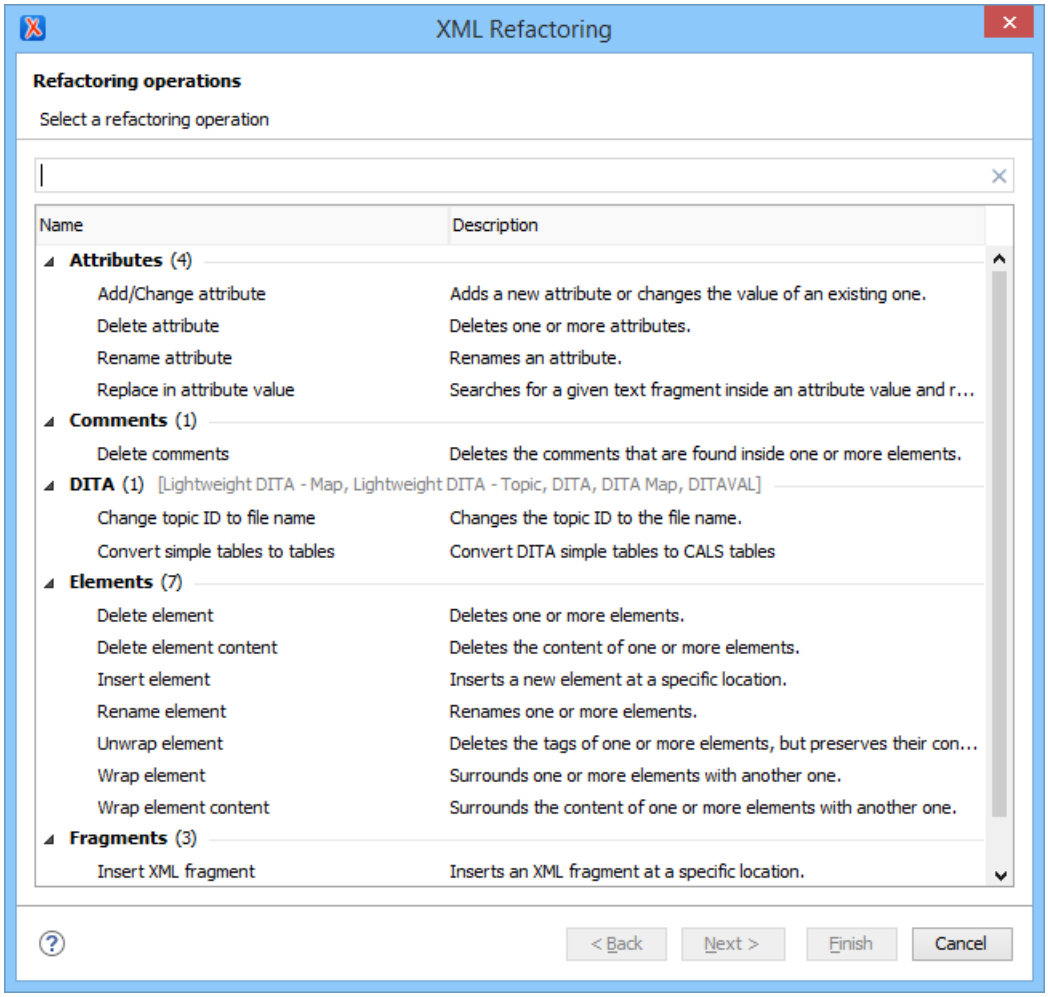


Figure 673: XML Refactoring Wizard

Configure Operation Parameters

The next wizard page allows you to specify the parameters for the refactoring operation. The parameters are specific to the type of refactoring operation that is being performed. For example, to delete an attribute you need to specify the parent element and the qualified name of the attribute to be removed.

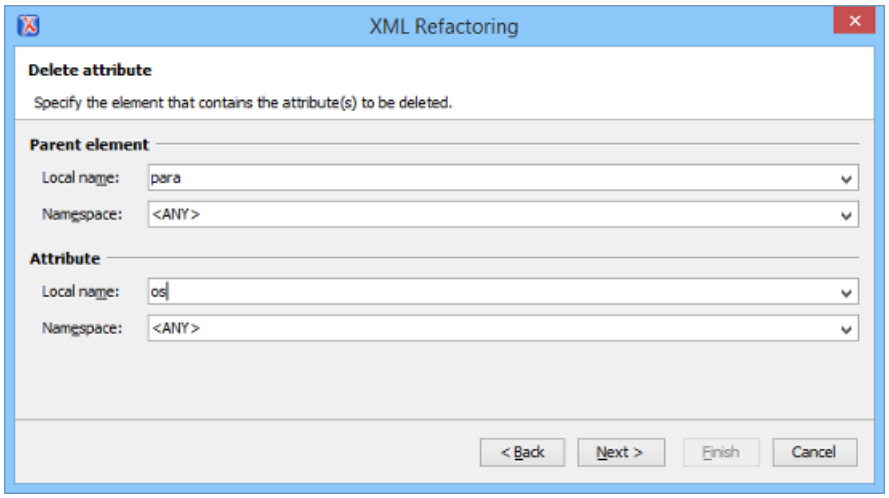


Figure 674: XML Refactoring 2nd Wizard Page (Delete Attribute Operation)

Scope and Filters

The last wizard page allows you to select the set of files that represent the input of the operation.

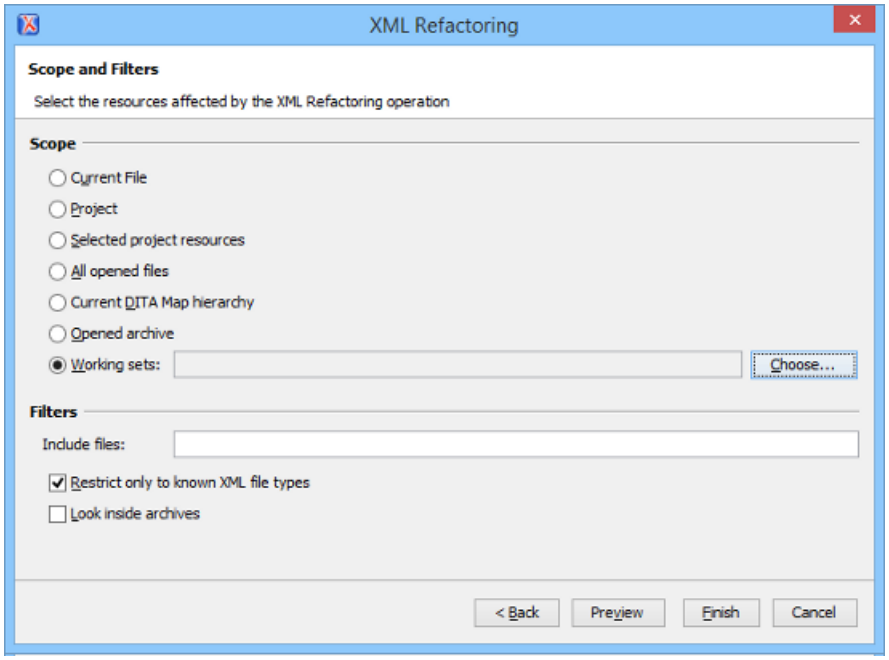


Figure 675: XML Refactoring - Scope and Filters Wizard Page

Scope section

In the **Scope** section, you can select from predefined resource sets (such as the current file, your whole project, the current *DITA map* hierarchy for DITA projects, etc.) or you can define your own set of resources by creating a *working set*.

Filters

The **Filters** section includes the following options:

- **Include files** - Allows you to filter the selected resources by using a file pattern. For example, to restrict the operation to only analyze build files you could use `build*.xml` for the file pattern.
- **Restrict only to known XML file types** - When selected, only resources with a known XML file type will be affected by the operation.

Preview

You can use the **Preview** button to open a comparison panel where you can review all the changes that will be made by the refactoring operation before applying the changes.

Finish

After clicking the **Finish** button, the operation will be processed and Oxygen XML Editor plugin provides no automatic means for reverting the operations. Any **Undo** action will only revert changes on the current document.

Trouble: If an operation fails, a notification will be displayed in the **Results** panel with some information about the error. For example, if the operation was invoked on a read-only resource, the error will indicate that a read-only file cannot be converted.

Tip: If an operation takes longer than expected you can use the **Stop** button in the progress bar to cancel the operation.

Predefined Refactoring Operations

The XML Refactoring tool includes a variety of predefined operations that can be used for common refactoring tasks. They are grouped by category in the **Refactoring operations** wizard page. You can also access the operations from the **Refactoring** submenu in the contextual menu of **Author** or **Text** mode. The operations are also grouped by category in this submenu. When selecting the operations from the contextual menu, Oxygen XML Editor plugin considers the editing context to get the names and namespaces of the current element or attribute, and uses this information to preconfigure some of the parameter values for the selected refactoring operation.

Tip: Each operation includes a link in the lower part of the wizard that opens the **XML / XSLT-FO-XQuery / XPath** preferences page where you can configure XPath options and declare namespace prefixes.

The following predefined operations are available:

Refactoring Operations for *Attributes*

Add/Change attribute

Use this operation to change the value of an attribute or insert a new one. This operation allows you to specify the following parameters:

- **Parent element** section
  - **Element** - The parent element of the attribute to be changed, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** section
  - **Local name** - The local name of the affected attribute.
  - **Namespace** - The namespace of the affected attribute.
  - **Value** - The value for the affected attribute.
- **Options** section
  - You can choose between one of the following options for the **Operation mode**:
    - **Add the attribute in the parent elements where it is missing**
    - **Change the value in the parent elements where the atrribute already exists**
    - **Both**

Convert attribute to element

Use this operation to convert a specified attribute to an element. This operation allows you to specify the following parameters:

- **Parent element** section
  - **Element** - The parent element of the attribute to be converted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** section
  - **Local name** - The local name of the affected attribute.

    - **Namespace** - The namespace of the affected attribute.
- **New element** section
    - **Local name** - The local name of the new element.
    - **Namespace** - The namespace of the new element.

Delete attribute

Use this operation to remove one or more attributes. This operation requires you to specify the following parameters:

- **Element** - The parent element of the attribute to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** - The name of the attribute to be deleted.

Rename attribute

Use this operation to rename an attribute. This operation requires you to specify the following parameters:

- **Element** - The parent element of the attribute to be renamed, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
- **Attribute** - The name of the attribute to be renamed.
- **New local name** - The new local name of the attribute.

Replace in attribute value

Use this operation to search for a text fragment inside an attribute value and change the fragment to a new value. This operation allows you to specify the following parameters:

- **Target attribute** section
    - **Element** - The parent element of the attribute to be modified, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.
    - **Attribute** - The name of the attribute to be modified.
- **Find / Replace** section
    - **Find** - The text fragments to find. You can use Perl-like regular expressions.
    - **Replace with** - The text fragment to replace the target with. This parameter can bind regular expression capturing groups ($1 , $2, etc.) from the find pattern.

Refactoring Operations for *Comments*

Delete comments

Use this operation to delete comments from one or more elements. This operation requires you specify the following parameter:

- **Element** - The target element (or elements) for which comments will be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Note: Comments that are outside the root element will not be deleted because the *serializer* preserves the content before and after the root.

Refactoring Operations for *DITA*

Change topic ID to file name

Use this operation to change the ID of a topic to be the same as its file name.

Convert CALS tables to simple tables

Use this operation to convert DITA CALS tables to simple tables.

Convert conrefs to conkeyrefs

Use this operation to convert `conref` attributes to `conkeyref` attributes. For more information and instructions for using this operation, see Converting Conrefs to Conkeyrefs on page 1544.

Convert simple tables to CALS tables

Use this operation to convert DITA simple tables to CALS tables.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic). For more information, see Converting DITA Topics to Another Type on page 1507.

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting). For more information, see Converting DITA Topics to Another Type on page 1507.

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

All of these DITA refactoring actions allow you to choose a scope for the operation and some filters:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, **Current DITA map hierarchy**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

Refactoring Operations for *Elements*

Delete element

Use this operation to delete elements. This operation requires you to specify the following parameter:

- **Element** - The target element to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Delete element content

Use this operation to delete the content of elements. This operation requires you to specify the following parameter:

- **Element** - The target element whose content is to be deleted, in the form of a local name from any namespace, a local name with a namespace prefix, or an XPath expression.

Insert element

Use this operation to insert new elements. This operation allows you to specify the following parameters:

- **Element** section
  - **Local name** - The local name of the element to be inserted.
  - **Namespace** - The namespace of the element to be inserted.
- **Location** section

- **XPath**- An XPath expression that identifies an existing element to which the new element is relative, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Position** - The position where the new element will be inserted, in relation to the specified existing element. The possible selections in the drop-down menu are: **After**, **Before**, **First child**, or **Last child**.

Rename element

Use this operation to rename elements. This operation requires you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be renamed, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **New local name** - The new local name of the element.

Unwrap element

Use this operation to remove the surrounding tags of elements, while keeping the content unchanged. This operation requires you to specify the following parameter:

- **Target elements (XPath)** - The target elements whose surrounding tags will be removed, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.

Wrap element

Use this operation to surround elements with element tags. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be surrounded with tags, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Wrapper element** section
  - **Local name** - The local name of the *Wrapper element*.
  - **Namespace** - The namespace of the *Wrapper element*.

Wrap element content

Use this operation to surround the content of elements with element tags. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements whose content will be surrounded with tags, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **Wrapper element** section
  - **Local name** - The local name of the *Wrapper element* that will surround the content of the target.
  - **Namespace** - The namespace of the *Wrapper element* that will surround the content of the target.

Refactoring Operations for *Fragments*

Insert XML fragment

Use this operation to insert an XML fragment. This operation allows you to specify the following:

- **XML Fragment** - The XML fragment to be inserted.
- **Location** section
  - **XPath** - An XPath expression that identifies an existing element to which the inserted fragment is relative, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
  - **Position** - The position where the fragment will be inserted, in relation to the specified existing element. The possible selections in the drop-down menu are: **After**, **Before**, **First child**, or **Last child**.

Replace element content with XML fragment

Use this operation to replace the content of elements with an XML fragment. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements whose content will be replaced, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.

- **XML Fragment** - The XML fragment with which to replace the content of the target element.

Replace element with XML fragment

Use this operation to replace elements with an XML fragment. This operation allows you to specify the following parameters:

- **Target elements (XPath)** - The target elements to be replaced, in the form of a local name from any namespace, a local name with a namespace prefix, or other XPath expressions.
- **XML Fragment** - The XML fragment with which to replace the target element.

Refactoring Operations for *JATSKit*

Add BITS DOCTYPE - NLM/NCBI Book Interchange 2.0

Use this operation to add an NLM 'BITS' 2.0 DOCTYPE declaration.

Add Blue DOCTYPE - NISO JATS Publishing 1.1

Use this operation to add a JATS 'Blue' 1.1 DOCTYPE declaration.

Normalize IDs

Use this operation to normalize assigned IDs and assigned IDs to elements that are missing them.

All of these JATSKit refactoring actions allow you to choose a scope for the operation and some filters:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

Additional Notes

Note: There are some operations that allow `<ANY>` for the **local name** and **namespace** parameters. This value can be used to select an element or attribute regardless of its local name or namespace. Also, the `<NO_NAMESPACE>` value can be used to select nodes that do not belong to a namespace.

Note: Some operations have parameters that accept XPath expressions to match elements or attributes. In these XPath expressions you can only use the prefixes declared in the **Options** > **Preferences** > **XML** > **XSLT-FO-XQUERY** > **XPath** page. This preferences page can be easily opened by clicking the link in the note (**Each prefix used in an XPath expression must be declared in the Default prefix-namespace mappings section**) at the bottom of the **Configure Operation Parameters** wizard page.

Custom Refactoring Operations

While Oxygen XML Editor plugin includes a variety of predefined XML refactoring operations to help you accomplish particular tasks, you can also create custom operations according to your specific needs. For example, you could create a custom refactoring operation to convert an attribute to an element and insert the element as the first child of the parent element.

An XML Refactoring operation is defined as a pair of resources:

- An *XQuery Update script* or *XSLT stylesheet* that Oxygen XML Editor plugin will run to refactor the XML files.
- An *XML Operation Descriptor* file that contains information about the operation (such as the name, description, and parameters).

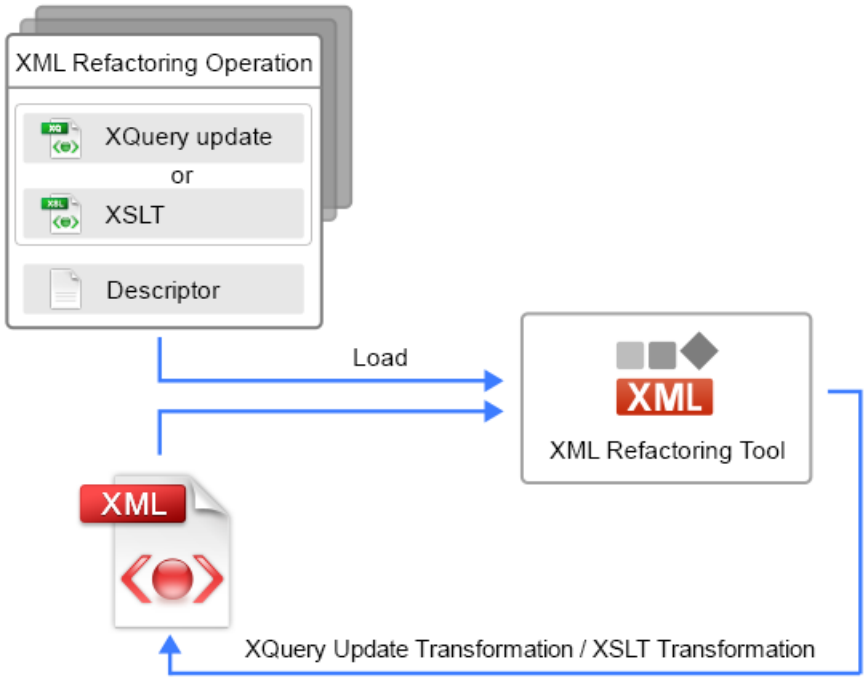


Figure 676: Diagram of an XML Refactoring Operation

All the defined custom operations are loaded by the **XML Refactoring Tool** and presented in the **Refactoring Operations** wizard page, along with the predefined built-in operations.

After the user chooses an operation and specifies its parameters, Oxygen XML Editor plugin processes an XQuery Update or XSLT transformation over the input file. This transformation is executed in a **safe mode**, which implies the following:

- When loading the document:
  - The **XInclude** mechanism is disabled. This means that the resources included by using XInclude will not be visible in the transformation.
  - The DTD entities will be processed without being expanded.
  - The associated DTD will be not loaded, so the default attributes declared in the DTD will not be visible in the transformation.
- When saving the updated XML document:
  - The DOCTYPE will be preserved.

    Note: This can be changed using Saxon extension functions in XSLT.
  - The DTD entities will be preserved as they are in the original document when the document is saved.
  - The attribute values will be kept in their original form without being normalized.
  - The spaces between attributes are preserved. Basically, the spaces are lost by a regular XML serialization since they are not considered important.

The result of this transformation overrides the initial input file.

Note: To achieve some of the previous goals, the XML Refactoring mechanism adds several attributes that are interpreted internally. The attributes belong to the `http://www.oxygenxml.com/ns/xmlRefactoring/additional_attributes` namespace. These attributes should not be taken into account when processing the input XML document since they are discarded when the transformed document is serialized.

Restriction: *Comments* or *processing instructions* that are in any node before or after the root element cannot be modified by an XML Refactoring operation. In other words, XML Refactoring operations can only be applied on the root element and the nodes inside it. However, as a work around to this limitation, you can use Saxon extension functions and the XSLT stylesheet method to implement the new custom XML refactoring operation.

Creating a Custom Refactoring Operation

To create a custom refactoring operation, follow these steps:

1. Create an XQuery Update script or XSLT stylesheet file.
2. Create an **XML Refactoring Operation Descriptor** file contains the path to the XQuery Update script or XSLT stylesheet.
3. Store both files in one of the locations that Oxygen XML Editor plugin scans when loading the custom operations.

   Result: Once you run the **XML Refactoring** tool again, the custom operation appears in the **Refactoring Operations** wizard page.

Related Information:

Storing and Sharing Refactoring Operations on page 614

Custom Refactoring Script

The first step in creating a custom refactoring operation is to create an XQuery Update script or XSLT stylesheet that is needed to process the refactoring operations. The easiest way to create this script file is to use the **New** document wizard to create a new **XQuery** or **XSLT** file and you can use our XQuery method example or XSLT method example to help you with the content.

There are cases when it is necessary to add parameters in the XQuery script or XSLT stylesheet. For instance, if you want to rename an element, you may want to declare an external parameter associated with the name of the element to be renamed. To allow you to specify the value for these parameters, they need to be declared in the *refactoring operation descriptor file* that is associated with this operation.

Note: The XQuery Update processing is disabled by default in Oxygen XML Editor plugin. Thus, if you want to create or edit an XQuery Update script you have to enable this mechanism by creating an XQuery transformation scenario and choose **Saxon EE** as the transformation engine. Also, you need to make sure the **Enable XQuery update** option is selected in the Saxon processor advanced options.

Note: If you are using an XSLT file, XPath expressions that are passed as parameters will automatically be rewritten to conform with the mapping of the namespace prefixes declared in the **XML /XSLT-FO-XQuery / XPath** preferences page.

The next step in creating a custom refactoring operation is to create an **XML Refactoring Operation Descriptor** file contains the path to the XQuery Update script or XSLT stylesheet.

Related Information:

XQuery Update Script for Creating a Custom Operation on page 608
XSLT Stylesheet for Creating a Custom Operation on page 610

Custom Refactoring Operation Descriptor File

The second step in creating a custom refactoring operation is to create an operation descriptor file. The easiest way to do this is to use the **New** document wizard and choose the **XML Refactoring Operation Descriptor** template.

Introduction to the Descriptor File

This file contains information (such as `name`, `description`, and `id`) that is necessarily when loading an XML Refactoring operation . It also contains the path to the XQuery Update script or XSLT stylesheet that is associated with the particular operation through the `script` element.

You can specify a `category` for your custom operations to logically group certain operations. The `category` element is optional and if it is not included in the descriptor file, the default name of the category for the custom operations is *Other operations*.

The descriptor file is edited and validated against the following schema: `frameworks/xml_refactoring/operation_descriptor.xsd`.

Declaring Parameters in the Descriptor File

If the XQuery Update script or XSLT stylesheet includes parameters, they should be declared in the **parameters** section of the descriptor file. All the parameters specified in this section of the descriptor file will be displayed in the **XML Refactoring** tool within the **Configure Operation Parameters** wizard page for that particular operation.

The value of the first `description` element in the **parameters** section will be displayed at the top of the **Configure Operation Parameters** wizard page.

To declare a parameter, specify the following information:

- **`label`** - This value is displayed in the user interface for the parameter.
- **`name`** - The parameter name used in the XQuery Update script or XSLT stylesheet and it should be the same as the one declared in the script.
- **`type`** - Defines the type of the parameter and how it will be rendered. There are several types available:
  - `TEXT` - Generic type used to specify a simple text fragment.
  - `XPATH` - Type of parameter whose value is an XPATH expression. For this type of parameter, Oxygen XML Editor plugin will use a text input with corresponding content completion and syntax highlighting.

    Note: The value of this parameter is transferred as plain text to the XQuery Update or XSLT transformation without being evaluated. You should evaluate the XPath expression inside the XQuery Update script or XSLT stylesheet. For example, you could use the `saxon:evaluate` Saxon extension function.

    Note: A relative XPath expression is converted to an absolute XPath expression by adding `//` before it (`//XPathExp`). This conversion is done before transferring the XPath expression to the XML refactoring engine.

    Note: When writing XPath expressions, you can only use prefixes declared in the **Options** > **Preferences** > **XML** > **XSLT-FO-XQUERY** > **XPath** options page.
  - `NAMESPACE` - Used for editing namespace values.
  - `REG_EXP_FIND` - Used when you want to match a certain text by using Perl-like regular expressions.
  - `REG_EXP_REPLACE` - Used along with `REG_EXP_FIND` to specify the replacement string.
  - `XML_FRAGMENT` - This type is used when you want to specify an XML fragment. For this type, Oxygen XML Editor plugin will display a text area specialized for inserting XML documents.
  - `NC_NAME` - The parameter for `NC_NAME` values. It is useful when you want to specify the local part of a *QName* for an element or attribute.
  - `BOOLEAN` - Used to edit boolean parameters.
  - `TEXT_CHOICE` - It is useful for parameters whose value should be from a list of possible values. Oxygen XML Editor plugin renders each possible value as a radio button option.
- **`description`** - The description of the parameter. It is used by the application to display a tooltip when you hover over the parameter.
- **`possibleValues`** - Contains the list with possible values for the parameter and you can specify the default value, as in the following example:

```
<possibleValues onlyPossibleValuesAllowed="true">
    <value name="before">Before</value>
    <value name="after"default="true">After</value>
    <value name="firstChild">First child</value>
    <value name="lastChild">Last child</value>
</possibleValues>
```

Specialized Parameters to Match Elements or Attributes

If you want to match elements or attributes, you can use some specialized parameters, in which case Oxygen XML Editor plugin will propose all declared elements or attributes based on the schema associated with the currently edited file. The following specialized parameters are supported:

`elementLocation`

This parameter is used to match elements. For this type of parameter, the application displays a text field where you can enter the element name or an XPath expression. The text from the `label` attribute is displayed in the application as the label of the text field. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. If the value of the `useCurrentContext`

attribute is set to **true**, the element name from the cursor position is used as proposed values for this parameter.

Example of an `elementLocation`:

```
<elementLocation name="elem_loc" useCurrentContext="false">
                <element label="Element location">
                    <description>Element location description.</description>
                </element>
</ ElementLocation>
```

`attributeLocation`

This parameter is used to match attributes. For this type of parameter, the application displays two text fields where you can enter the parent element name and the attribute name (both text fields accept XPath expressions for a finer match). The text from the `label` attributes is displayed in the application as the label of the associated text fields. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. The value of this parameter is an XPath expression that is computed by using the values of the expression from the `element` and `attribute` text fields. For example, if `section` is entered for the element and a `title` is entered for the attribute, the XPath expression would be computed as `//section/@title`. If the value of the `useCurrentContext` attribute is set to `true`, the element and attribute name from the cursor position is used as proposed values for the operation parameters.

Example of an `attributeLocation`:

```
<attributeLocation name="attr_xpath" useCurrentContext="true">
                <element label="Element path">
                    <description>Element path description.</description>
                </element>
                <attribute label="Attribute" >
                    <description>Attribute path description.</description>
                </attribute>
</ AttributeLocation>
```

`elementParameter`

This parameter is used to specify elements by local name and namespace. For this type of parameter, the application displays two combo boxes with elements and namespaces collected from the associated schema of the currently edited file. The text from the `label` attribute is displayed in the application as label of the associated combo. The `name` attribute is used to specify the name of the parameter from the XQuery Update script or XSLT stylesheet. If you specify the `allowsAny` attribute, the application will propose *<ANY>* as a possible value for the **Name** and **Namespace** combo boxes. You can also use the `useCurrentContext` attribute and if its value is set to `true`, the element name and namespace from the cursor position is used as proposed values for the operation parameters.

Example of an `elementParameter`:

```
<elementParameter id="elemID" useCurrentContext="true">
    <localName label="Name" name="element_localName" allowsAny="true">
        <description>Local name of the parent element.</description>
    </localName>
    <namespace label="Namespace" name="element_namespace" allowsAny="true">
        <description>Local name of the parent element</description>
    </namespace>
</elementParameter>
```

`attributeParameter`

This parameter is used to specify attributes by local name and namespace. For this type of parameter, the application displays two combo boxes with attributes and their namespaces collected from the associated schema of the currently edited file. The text from the `label` attribute is displayed in the application as the label of the associated combo box. You can also use the `useCurrentContext` attribute and if its value is set to `true`, the attribute name and namespace from the cursor position is used as proposed values for the operation parameters.

Note: An `attributeParameter` is dependant upon an `elementParameter`. The list of attributes and namespaces are computed based on the selection in the `elementParameter` combo boxes.

Example of an `attributeParameter`:

```
<attributeParameter dependsOn="elemID" useCurrentContext="true">
```

```
    <localName label="Name" name="attribute_localName">
        <description>The name of the attribute to be converted.</description>
    </localName>
    <namespace label="Namespace" name="attribute_namespace" allowsAny="true">
        <description>Namespace of the attribute to be converted.</description>
    </namespace>
</attributeParameter>
```

Note: All predefined operations are loaded from the *[OXYGEN_INSTALL_DIR]*`/refactoring` folder.

Related Information:

Example of an Operation Descriptor File with an XSLT Stylesheet on page 612
Example of an Operation Descriptor File with an XQuery Update script on page 609

XSLT Stylesheet for Creating a Custom Operation

To demonstrate creating a custom operation, consider that we have a task where we need to convert an attribute into an element and insert it inside another element. A specific example would be if you have a project with a variety of `image` elements where a deprecated `alt` attribute was used for the description and you want to convert all instances of that attribute into an element with the same name and insert it as the first child of the `image` element.

Thus, our task is to convert this attribute into an element with the same name and insert it as the first child of the image element.

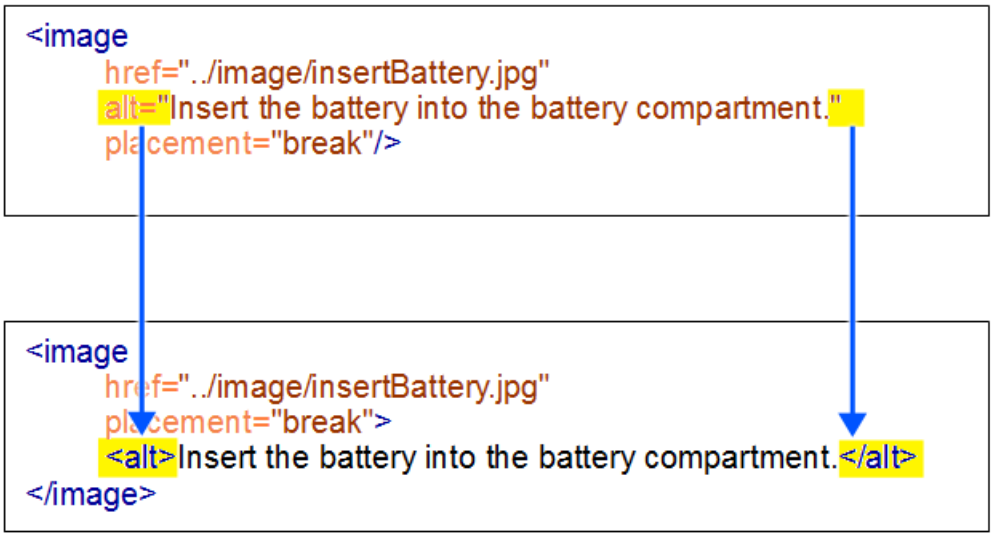


Figure 677: Example: Custom XML Refactoring Operation

We can use an XSLT stylesheet to implement the new custom XML refactoring operation. The second requirement is an XML Refactoring operation descriptor file that contains the path to the XSLT stylesheet.

Example of an XSLT Script for Creating a Custom Operation to *Convert an Attribute to an Element*

The XSLT stylesheet does the following:

- Iterates over all elements from the document that have the specified local name and namespace.
- Finds the attribute that will be converted to an element.
- Adds the new element as the first child of the parent element.

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
  xmlns:xs="http://www.w3.org/2001/XMLSchema"
  exclude-result-prefixes="xs"
  xmlns:xr="http://www.oxygenxml.com/ns/xmlRefactoring"
  version="2.0">

  <xsl:import
href="http://www.oxygenxml.com/ns/xmlRefactoring/resources/commons.xsl"/>
```

```
    <xsl:param name="element_localName" as="xs:string" required="yes"/>
    <xsl:param name="element_namespace" as="xs:string" required="yes"/>
    <xsl:param name="attribute_localName" as="xs:string" required="yes"/>
    <xsl:param name="attribute_namespace" as="xs:string" required="yes"/>
    <xsl:param name="new_element_localName" as="xs:string" required="yes"/>
    <xsl:param name="new_element_namespace" as="xs:string" required="yes"/>

    <xsl:template match="node() | @*">
        <xsl:copy>
            <xsl:apply-templates select="node() | @*"/>
        </xsl:copy>
    </xsl:template>
    <xsl:template match="//*[xr:check-local-name($element_localName, ., true())
       and
          xr:check-namespace-uri($element_namespace, .)]">

        <xsl:variable name="attributeToConvert"
           select="@*[xr:check-local-name($attribute_localName, ., true())
       and
          xr:check-namespace-uri($attribute_namespace, .)]"/>

        <xsl:choose>
            <xsl:when test="empty($attributeToConvert)">
                <xsl:copy>
                    <xsl:apply-templates select="node() | @*"/>
                </xsl:copy>
            </xsl:when>
        <xsl:otherwise>
            <xsl:copy>
                <xsl:for-each select="@*[empty(. intersect $attributeToConvert)]">
                     <xsl:copy-of select="."/>
                </xsl:for-each>
                  <!-- The new element namespace -->
                  <xsl:variable name="nsURI" as="xs:string">
                      <xsl:choose>
             <xsl:when test="$new_element_namespace eq $xr:NO-NAMESPACE">
                           <xsl:value-of select="''"/>
                       </xsl:when>
                       <xsl:otherwise>
                           <xsl:value-of select="$new_element_namespace"/>
                       </xsl:otherwise>
                      </xsl:choose>
                  </xsl:variable>
            <xsl:element name="{$new_element_localName}" namespace="{$nsURI}">
                      <xsl:value-of select="$attributeToConvert"/>
                  </xsl:element>
                <xsl:apply-templates select="node()"/>
           </xsl:copy>
         </xsl:otherwise>
       </xsl:choose>
    </xsl:template>
  </xsl:stylesheet>
```

Note: The XSLT stylesheet imports a module library that contains utility functions and variables. The location of this module is resolved via an *XML Catalog* set in the XML Refactoring *framework*.

Example of an Operation Descriptor File That References the XSLT Stylesheet for Creating a Custom Operation to *Convert an Attribute to an Element*

After you have developed the XSLT stylesheet, you have to create an XML Refactoring operation descriptor. This descriptor is used by the application to load the operation details such as name, description, or parameters.

```
<?xml version="1.0" encoding="UTF-8"?>

<refactoringOperationDescriptor
 xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
 xmlns="http://www.oxygenxml.com/ns/xmlRefactoring"
 id="convert-attribute-to-element"
 name="Convert attribute to element">
 <description>Converts the specified attribute to an element.
          The new element will be inserted as first child of the attribute's
          parent element.</description>
 <!-- For the XSLT stylesheet option uncomment the following line and comment
          the line referring the XQuery Update script -->
 <!-- <script type="XSLT" href="convert-attribute-to-element.xsl"/> -->
 <script type="XQUERY_UPDATE" href="convert-attribute-to-element.xq"/>
  <parameters>
   <description>Specify the attribute to be converted to element.</description>
    <section label="Parent element">
     <elementParameter id="elemID">
      <localName label="Name" name="element_localName" allowsAny="true">
       <description>Local name of the parent element.</description>
        </localName>
       <namespace label="Namespace" name="element_namespace" allowsAny="true">
         <description>Local name of the parent element</description>
       </namespace>
     </elementParameter>
    </section>
    <section label="Attribute">
```

```
      <attributeParameter dependsOn="elemID">
       <localName label="Name" name="attribute_localName">
        <description>Name of the attribute to be converted.</description>
       </localName>
      <namespace label="Namespace" name="attribute_namespace" allowsAny="true">
        <description>Namespace of the attribute to be converted.</description>
      </namespace>
      </attributeParameter>
     </section>
     <section label="New element">
         <elementParameter>
            <localName label="Name" name="new_element_localName">
                <description>The name of the new element.</description>
            </localName>
            <namespace label="Namespace" name="new_element_namespace">
                <description>The namespace of the new element.</description>
            </namespace>
         </elementParameter>
     </section>
   </parameters>
</refactoringOperationDescriptor>
```

Note: If you are using an XSLT file, the line with the `script` element would look like this:

```
<script type="XSLT" href="convert-attribute-to-element.xsl"/>
```

Results

After you have created these files, copy them into a folder scanned by Oxygen XML Editor plugin when it loads the custom operation. When the XML Refactoring tool is started again, you will see the created operation.

Since various parameters can be specified, this custom operation can also be used for other similar tasks. The following image shows the parameters that can be specified in our example of the custom operation to convert an attribute to an element:

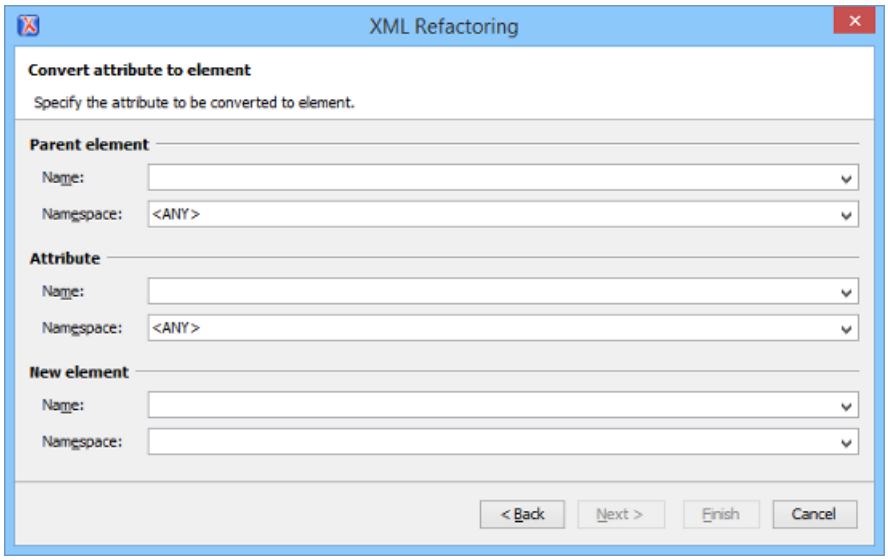


Figure 678: Example: XML Refactoring Wizard for a Custom Operation

Using Saxon Extension Functions to Allow Custom Refactoring Operations to Read and Modify Content Outside the Root Node

One advantage to using an XSLT stylesheet is that there is limitation when using an XQuery Update script in that refactoring operations can only be performed on *comments* or *processing instructions* that are inside the root element. Thus, using the XQuery method, *comments* or *processing instructions* that are in any node before or after the root element cannot be modified by an XML Refactoring operation.

The XSLT stylesheet method offers a work around to this limitation through the use of some Saxon extension functions.

To illustrate the use of these functions, consider the following sample XML file:

```
<?xml version="1.0" encoding="UTF-8"?>
<!-- comment before root -->
```

```
<?pi before root ?>
<root>
    <child></child>
</root>
<!-- comment after root -->
<?pi after root ?>
```

The following Saxon extension functions can be used to read and modify content outside the root node:

Note: They belong to the `http://www.oxygenxml.com/ns/xmlRefactoring/functions` namespace.

- **get-content-after-root()** - Returns the content after root as `xs:string`.

  For the XML above, the call of this function will return the following string value:

  ```
  <!-- comment after root -->
  <?pi after root ?>
  ```

- **set-content-after-root(xs:string)** - Updates the content that will be serialized in the refactored document after the root node.

  The function call `set-content-after-root('<!-- Inserted comment -->')` will result in replacing the nodes after the root element with the comment passed as string argument. The XML document will be modified as follows:

  ```
  <?xml version="1.0" encoding="UTF-8"?>
  <!-- comment before root -->
  <?pi before root ?>
  <root>
      <child></child>
  </root><!-- Inserted comment -->
  ```

- **get-content-before-root()** - Returns the content before root as `xs:string`.

  For the XML above, the call of this function will return the following string value:

  ```
  <?xml version="1.0" encoding="UTF-8"?>
  <!-- comment before root -->
  <?pi before root ?>
  ```

- **set-content-before-root(xs:string)** - Updates the content that will be serialized in the refactored document after the root node.

  The function call `set-content-before-root('<!-- Inserted comment -->')` will result in replacing the nodes before the root element with the comment passed as string argument. The XML document will be modified as follows:

  ```
  <!-- Inserted comment --><root>
      <child></child>
  </root>
  <!-- comment after root -->
  <?pi after root ?>
  ```

XSLT Example:

To process content after the root node, the XSLT would look like this:

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet xmlns:xsl="http://www.w3.org/1999/XSL/Transform"
    xmlns:xs="http://www.w3.org/2001/XMLSchema" exclude-result-prefixes="xs"
    xmlns:xrf="http://www.oxygenxml.com/ns/xmlRefactoring/functions" version="3.0">
    <xsl:template match="/">
        <!-- The comment content that will be inserted after the root element -->
        <xsl:variable name="commentAsText">&lt;!-- COMMENT ADDED FROM XR OPERATION-->
        </xsl:variable>
        <!-- Retrieve the content after the root element as is -->
        <xsl:variable name="after-root-content" as="xs:string"
                      select="xrf:get-content-after-root()"/>

        <xsl:variable name="processedContent"
                      select="concat($after-root-content, $commentAsText)"/>

        <!-- Update the content after the root element -->
        <xsl:value-of select="xrf:set-content-after-root($processedContent)"/>

        <xsl:apply-templates/>
    </xsl:template>

    <xsl:template match="node() | @*">
        <xsl:copy>
```

```
            <xsl:apply-templates select="node() | @*"/>
        </xsl:copy>
    </xsl:template>
</xsl:stylesheet>
```

Note: The above XSLT retrieves the nodes after the root element as string, appends a new comment, and then sets back the updated content into the XML document.

Storing and Sharing Refactoring Operations

Oxygen XML Editor plugin scans the following locations when looking for XML Refactoring operations to provide flexibility:

- A `refactoring` folder, created inside a directory that is associated to a *framework* you are customizing. To associate the parent directory to the *framework*, you need to add it in the **Classpath** tab of the **Document type** configuration dialog box.
- A folder that you specify in the **Load additional refactoring operations from** text box in the **XML Refactoring** preferences page.
- The `refactoring` folder from the Oxygen XML Editor plugin installation directory (*[OXYGEN_INSTALL_DIR]*`/refactoring/`).

Sharing Custom Refactoring Operations

The purpose of Oxygen XML Editor plugin scanning multiple locations for the XML Refactoring operations is to provide more flexibility for developers who want to share the refactoring operations with the other team members. Depending on your particular use case, you can attach the custom refactoring operations to other resources, such as *framework* or projects.

After storing custom operations, you can share them with other users by sharing the resources.

Localizing XML Refactoring Operations

Oxygen XML Editor plugin includes localization support for the XML refactoring operations.

The translation keys for the built-in refactoring operations are located in *[OXYGEN_INSTALL_DIR]*`/refactoring/i18n/translation.xml`.

The localization support is also available for custom refactoring operations. The following information can be translated:

- The operation `name`, `description`, and `category`.
- The `description` of the `parameters` element.
- The `label`, `description`, and `possibleValues` for each `parameter`.

Translated refactoring information uses the following form:

```
${i18n(translation_key)}
```

Oxygen XML Editor plugin scans the following locations to find the `translation.xml` files that are used to load the translation keys:

- A `refactoring/i18n` folder, created inside a directory that is associated to a customized *framework*.
- A `i18n` folder, created inside a directory that is associated to a customized *framework*.
- An `i18n` folder inside any specified folder. In this case, you need to open the **Preferences** dialog box , go to **XML** > **XML Refactoring**, and specify the folder in the **Load additional refactoring operations from** text box.
- The `refactoring/i18n` folder from the Oxygen XML Editor plugin installation directory (*[OXYGEN_INSTALL_DIR]*`/refactoring/i18n`).

Example: Refactoring Operation Descriptor File with *i18n* Support

```
<?xml version="1.0" encoding="UTF-8"?>

<refactoringOperationDescriptor
    xmlns="http://www.oxygenxml.com/ns/xmlRefactoring" id="remove_text_content"
           name="${i18n(Remove_text_content)}">
    <description>${i18n(Remove_text_content_description)}</description>
    <script type="XQUERY_UPDATE" href="remove_text_content.xq"/>
    <parameters>
```

```
        <description>${i18n(parameters_description)}</description>
        <parameter label="${i18n(Element_name)}" name="element_localName"
                   type="NC_NAME">
            <description>${i18n(Element_name_descriptor)}</description>
            <possibleValues>
                <value default="true" name="value1">${i18n(value_1)}</value>
                <value name="value2">${i18n(value_2)}</value>
            </possibleValues>
        </parameter>
    </parameters>
</refactoringOperationDescriptor>
```

Generating Sample XML Files

Oxygen XML Editor plugin offers support to generate sample XML files both from XML schema 1.0 and XML schema 1.1, depending on the XML schema version set in **XML Schema** preferences page.

To generate sample XML files from an XML Schema, use the **Generate Sample XML Files** action from the **XML Tools** menu. This action is also available in the contextual menu of the schema Design mode. The action opens the **Generate Sample XML Files** dialog box that allows you to configure a variety of options for generating the files.

The **Generate Sample XML Files** dialog box contains three tabs with various configurable options. Default values for these options can be set in the **Sample XML Files Generator** preferences page.

Schema Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The first set of options are found in the **Schema** tab.

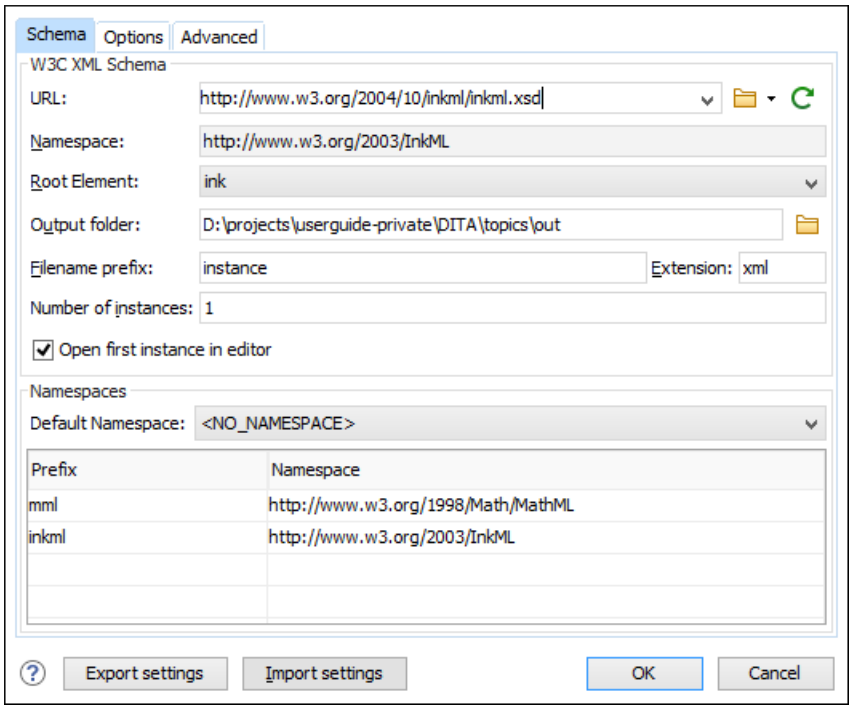


Figure 679: Generate Sample XML Files Dialog Box (Schema Tab)

This tab includes the following options:

URL

Specifies the URL of the Schema location. You can specify the path by using the text field, the history drop-down menu, or the browsing tools in the **Browse** drop-down list.

Namespace

Displays the namespace of the selected schema.

Root Element

After the schema is selected, this drop-down menu is populated with all root candidates gathered from the schema. Choose the root of the output XML documents.

Output folder

Path to the folder where the generated XML instances will be saved.

Filename prefix and Extension

You can specify the prefix and extension for the file name that will be generated. Generated file names have the following format: `prefixN.extension`, where N represents an incremental number from 0 up to the specified **Number of instances**.

Number of instances

The number of XML files to be generated.

Open first instance in editor

When selected, the first generated XML file is opened in the editor.

Namespaces section

You can specify the **Default Namespace**, as well as the prefixes for the namespaces.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

You can click **OK** at any point to generate the sample XML files.

Options Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The **Options** tab allows you to set specific options for namespaces and elements.

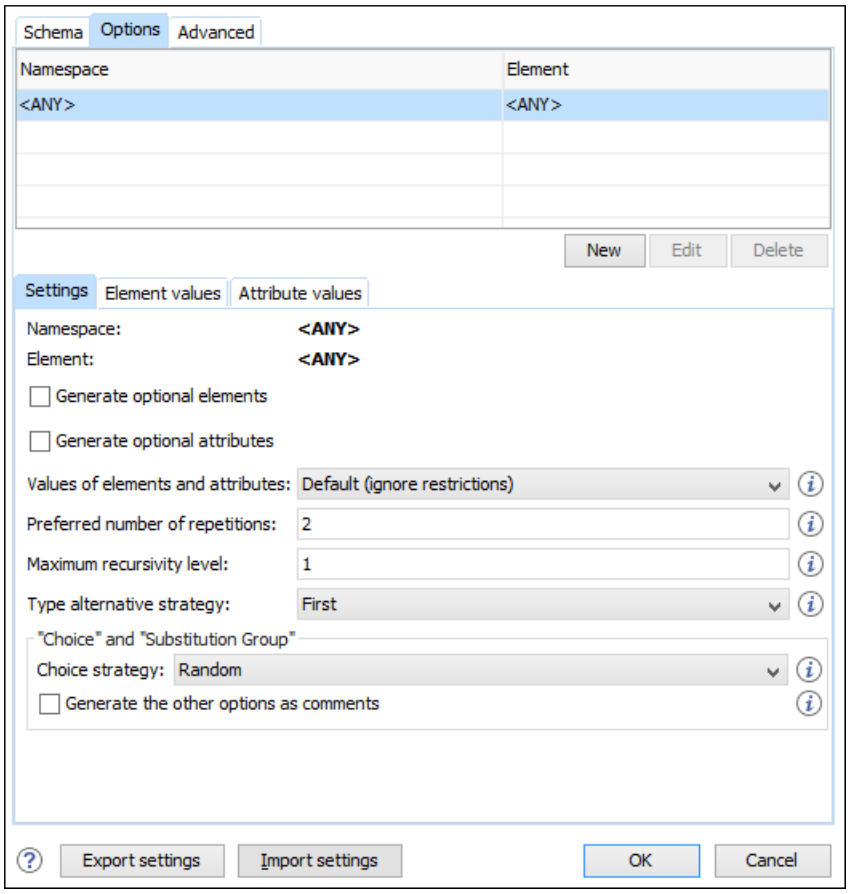


Figure 680: Generate Sample XML Files Dialog Box (Options Tab)

This tab includes the following options:

Namespace / Element table

Allows you to set a namespace for each element name that appears in an XML document instance. The following prefix-to-namespace associations are available:

- All elements from all namespaces (<ANY> - <ANY>). This is the default setting.
- All elements from a specific namespace.
- A specific element from a specific namespace.

Settings subtab

Namespace

Displays the namespace specified in the table at the top of the dialog box.

Element

Displays the element specified in the table at the top of the dialog box.

Generate optional elements

When selected, all elements are generated, including the optional ones (having the `minOccurs` attribute set to 0 in the schema).

Generate optional attributes

When selected, all attributes are generated, including the optional ones (having the `use` attribute set to `optional` in the schema).

Values of elements and attributes

Controls the content of generated attribute and element values. The following choices are available:

- **None** - No content is inserted.
- **Default** - Inserts a default value depending of data type descriptor of the particular element or attribute. The default value can be either the data type name or an incremental name of the attribute or element

(according to the global option from the **Sample XML Files Generator** preferences page). Note that type restrictions are ignored when this option is selected. For example, if an element is of a type that restricts an **xs:string** with the **xs:maxLength** facet to allow strings with a maximum length of 3, the XML instance generator tool may generate string element values longer than 3 characters.

- **Random** - Inserts a random value depending of data type descriptor of the particular element or attribute.

  Important: If all of the following are true, the **Generate Sample XML Files** tool outputs invalid values:

  - At least one of the restrictions is a `regexp`.
  - The value generated after applying the regexp does not match the restrictions imposed by one of the facets.

Preferred number of repetitions

Allows you to set the preferred number of repeating elements related to `minOccurs` and `maxOccurs` facets defined in the XML Schema.

- If the value set here is between `minOccurs` and `maxOccurs`, then that value is used.
- If the value set here is less than `minOccurs`, then the `minOccurs` value is used.
- If the value set here is greater than `maxOccurs`, then `maxOccurs` is used.

Maximum recursion level

If a recursion is found, this option controls the maximum allowed depth of the same element.

Type alternative strategy

Used for the `xs:alternative` element from XML Schema 1.1. The possible strategies are:

- **First** - The first valid alternative type is always used.
- **Random** - A random alternative type is used.

Choice strategy

Used for `xs:choice` or `substitutionGroup` elements. The possible strategies are:

- **First** - The first branch of `xs:choice` or the head element of `substitutionGroup` is always used.
- **Random** - A random branch of `xs:choice` or a substitute element or the head element of a `substitutionGroup` is used.

Generate the other options as comments

If selected, generates the other possible choices or substitutions (for `xs:choice` and `substitutionGroup`). These alternatives are generated inside comments groups so you can uncomment and use them later. Use this option with care (for example, on a restricted namespace and element) as it may generate large result files.

Element values subtab

Allows you to add values that are used to generate the content of elements. If there are multiple values, then the values are used in a random order.

Attribute values subtab

Allows you to add values that are used to generate the content of attributes. If there are multiple values, then the values are used in a random order.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

You can click **OK** at any point to generate the sample XML files.

Advanced Tab (Generate Sample XML Files Tool)

The **Generate Sample XML Files** tool includes a dialog box that allows you to configure a variety of options for generating the XML files. The **Advanced** tab allows you to set some options in regards to output values and performance.

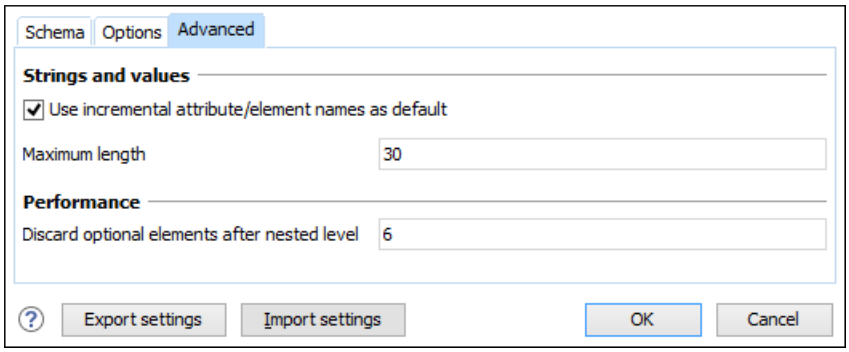


Figure 681: Generate Sample XML Files Dialog Box (Advanced Tab)

This tab includes the following options:

Use incremental attribute / element names as default

If selected, the value of an element or attribute starts with the name of that element or attribute. For example, for an a element the generated values are: a1, a2, a3, and so on. If not selected, the value is the name of the type of that element / attribute (for example: `string`, `decimal`, etc.)

Maximum length

The maximum length of string values generated for elements and attributes.

Discard optional elements after nested level

The optional elements that exceed the specified nested level are discarded. This option is useful for limiting deeply nested element definitions that can quickly result in very large XML documents.

Export settings

Use this button to save the current settings for future use.

Import settings

Use this button to load previously exported settings.

Converting Schema to Another Schema Language

The **Generate/Convert Schema** tool allows you to convert a DTD or Relax NG (full or compact syntax) schema or a set of XML files to an equivalent XML Schema, DTD or Relax NG (full or compact syntax) schema. Where perfect equivalence is not possible due to limitations of the target language, Oxygen XML Editor plugin generates an approximation of the source schema. Oxygen XML Editor plugin uses *Trang multiple format converter* to perform the actual schema conversions.

To use this tool, select the **Generate/Convert Schema (Ctrl + Shift + BackSlash (Command + Shift + BackSlash on OS X))** action from the **XML Tools** menu. This action opens the **Generate/Convert Schema** dialog box that allows you to configure various options for conversion.

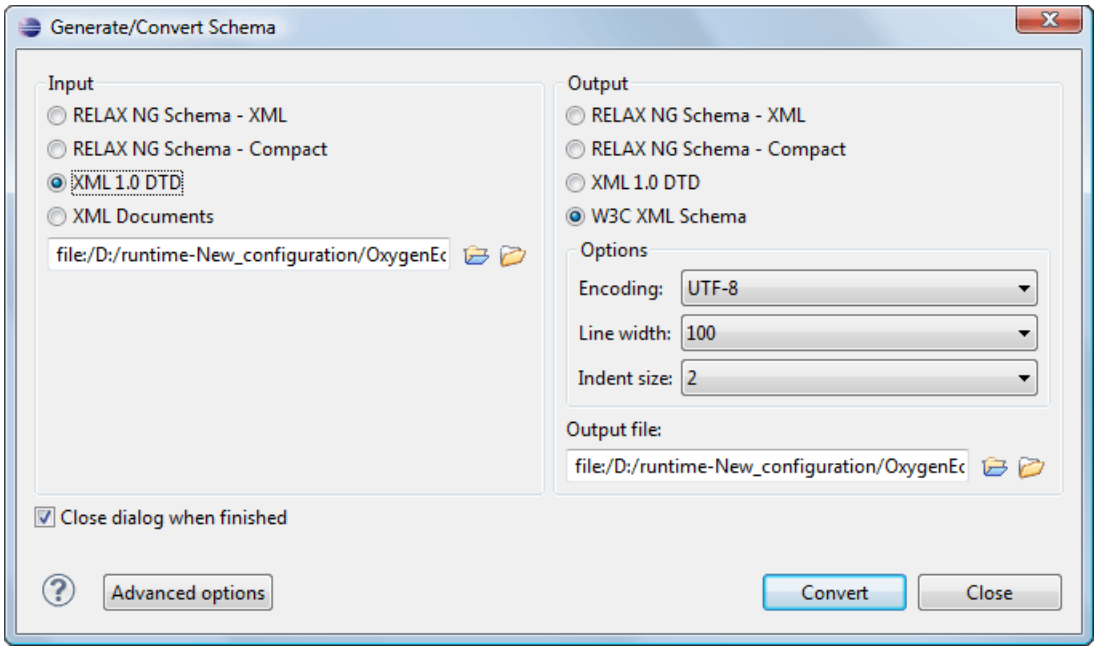


Figure 682: Generate/Convert Schema Dialog Box

The **Generate/Convert Schema** dialog box includes the following options:

Input section

Allows you to select the language of the source schema. If the conversion is based on a set of XML files, rather than just a single XML file, select the **XML Documents** option and use the file selector to add the XML files involved in the conversion.

Output section

Allows you to select the language of the target schema.

Options

You can choose the **Encoding**, the maximum **Line width**, and the **Indent size** (in number of spaces) for one level of indentation.

Output file

Specifies the path for the output file that will be generated.

Close dialog when finished

If you deselect this option, the dialog box will remain opened after the conversion so that you can easily continue to convert more files.

Advanced options

If you select **XML 1.0 DTD** for the input, you can click this button to access more advance options to further fine-tune the conversion. The following advanced options are available:

XML 1.0 DTD Input section

These options apply to the source DTD:

- **xmlns** - Specifies the default namespace, that is the namespace used for unqualified element names.
- **attlist-define** - Specifies how to construct the name of the definition representing an attribute list declaration from the name of the element. The specified value must contain exactly one percent character. This percent character is replaced by the name of element (after colon replacement) and the result is used as the name of the definition.
- **colon-replacement** - Replaces colons in element names with the specified chars when constructing the names of definitions used to represent the element declarations and attribute list declarations in the DTD.
- **any-name** - Specifies the name of the definition generated for the content of elements declared in the DTD as having a content model of ANY.

- **element-define** - Specifies how to construct the name of the definition representing an element declaration from the name of the element. The specified value must contain exactly one percent character. This percent character is replaced by the name of element (after colon replacement) and the result is used as the name of the definition.
- **annotation-prefix** - Default values are represented using an annotation attribute `prefix:defaultValue` where prefix is the specified value and is bound to `http://relaxng.org/ns/compatibility/annotations/1.0` as defined by the RELAX NG DTD Compatibility Committee Specification. By default, the conversion engine will use a for prefix unless that conflicts with a prefix used in the DTD.
- **inline-attlist** - Instructs the application not to generate definitions for attribute list declarations, but instead move attributes declared in attribute list declarations into the definitions generated for element declarations. This is the default behavior when the output language is XSD.
- **strict-any** - Preserves the exact semantics of *ANY* content models by using an explicit choice of references to all declared elements. By default, the conversion engine uses a wildcard that allows any element
- **generate-start** - Specifies whether or not the conversion engine should generate a start element. DTD's do not indicate what elements are allowed as document elements. The conversion engine assumes that all elements that are defined but never referenced are allowed as document elements.
- **xmlns mappings** table - Each row specifies the prefix used for a namespace in the input schema.

W3C XML Schema Output section

This section is available if you select **W3C XML Schema** for the output.

- **disable-abstract-elements** - Disables the use of abstract elements and substitution groups in the generated XML Schema. This can also be controlled using an annotation attribute.
- **any-process-contents** - One of the values: strict, lax, skip. Specifies the value for the `processContents` attribute of any elements. The default is skip (corresponding to RELAX NG semantics) unless the input format is DTD, in which case the default is strict (corresponding to DTD semantics).
- **any-attribute-process-contents** - Specifies the value for the `processContents` attribute of `anyAttribute` elements. The default is skip (corresponding to RELAX NG semantics).

Converting Database to XML Schema

Oxygen XML Editor plugin includes a tool that allows you to create an XML Schema from the structure of a database.

To convert a database structure to an XML Schema, use the following procedure:

1. Select the **Convert DB Structure to XML Schema** action from the **Tools** menu.

   Result: The **Convert DB Structure to XML Schema** dialog box is opened and your current database connections are displayed in the **Connections** section.
2. If the database source is not listed, click the **Configure Database Sources** button to open the **Data Sources** preferences page where you can configure data sources and connections.
3. In the **Format for generated schema** section, select one of the following formats:
   - **Flat schema** - A flat structure that resembles a tree-like view of the database without references to elements.
   - **Hierarchical schema** - Display the table dependencies visually, in a type of tree view where dependent tables are shown as indented child elements in the content model. Select this option if you want to configure the database columns of the tables to be converted.
4. Click **Connect**.

   Result: The database structure is listed in the **Select database tables** section according to the format you chose.
5. Select the database tables that you want to be included in the XML Schema.
6. If you selected **Hierarchical schema** for the format, you can configure the database columns.
   a. Select the database column you want to configure.

b. In the **Criterion** section you can choose to convert the selected database column as an **Element**, **Attribute**, or to be **Skipped** in the resulting XML Schema.
c. You can also change the name of the selected database column by changing it in the **Name** text field.

7. Click **Generate XML Schema**.

Result: The database structure is converted to an XML Schema and it is opened for viewing and editing.

JSON to XML Converter

Oxygen XML Editor plugin includes a useful and simple tool for converting JSON files to XML. It can be found in the **XML Tools** menu.

To convert a JSON document to XML, follow these steps:

1. Select the **JSON to XML** action from the **XML Tools** menu.
   The **JSON to XML** dialog box is displayed:

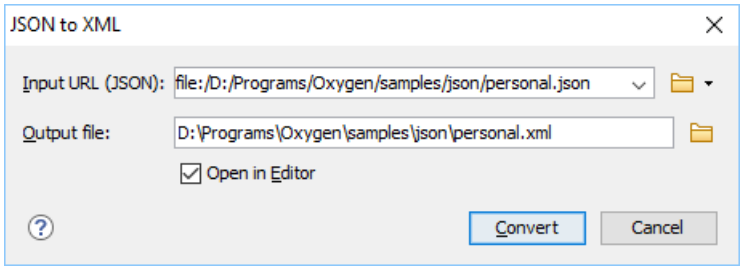


Figure 683: JSON to XML Dialog Box

2. Choose or enter the **Input URL** of the JSON document.
3. Choose the path of the **Output file** that will contain the resulting XML document.
4. Select the **Open in Editor** option to open the resulting XML document in the main editing pane.
5. Click the **Convert** button.

The original JSON document is now converted to an XML document.

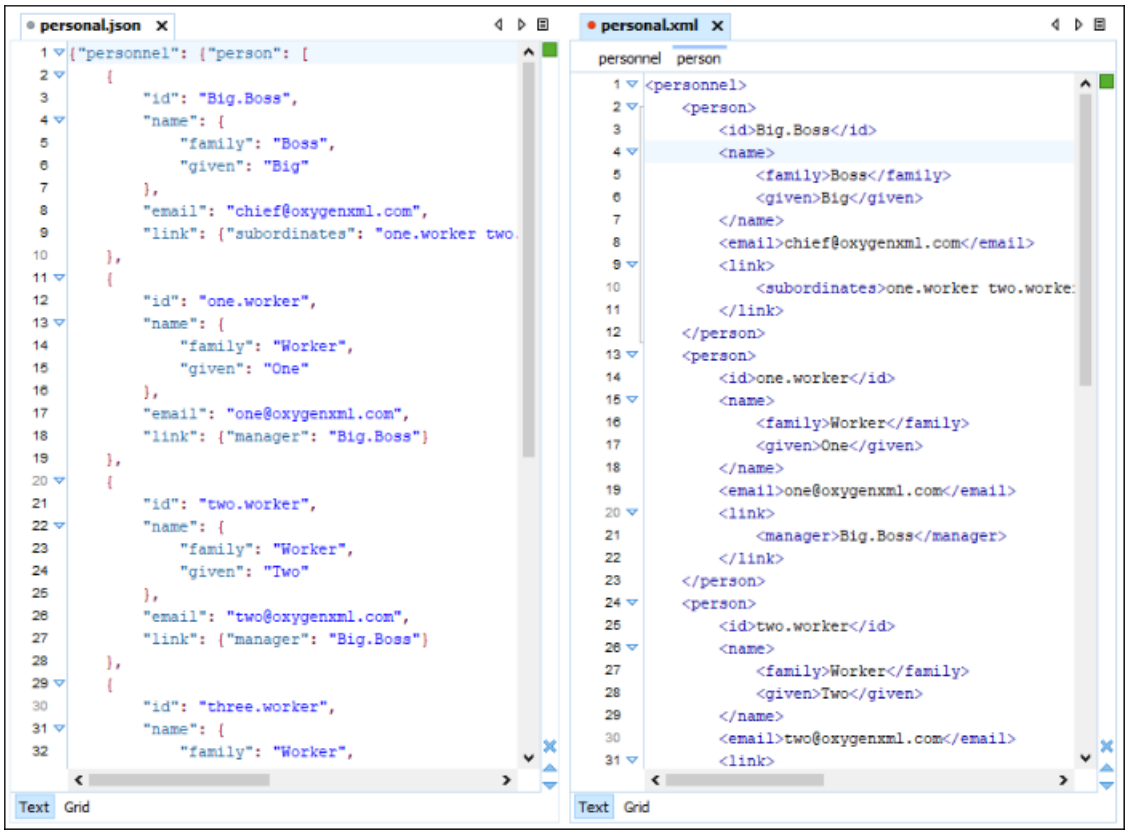


Figure 684: Example: XML to JSON Operation Result

XML to JSON Converter

Oxygen XML Editor plugin includes a useful and simple tool for converting XML files to JSON. It can be found in the **XML Tools** menu.

To convert an XML document to JSON, follow these steps:

1. Select the **XML to JSON** action from the **XML Tools** menu.

   The **XML to JSON** dialog box is displayed:

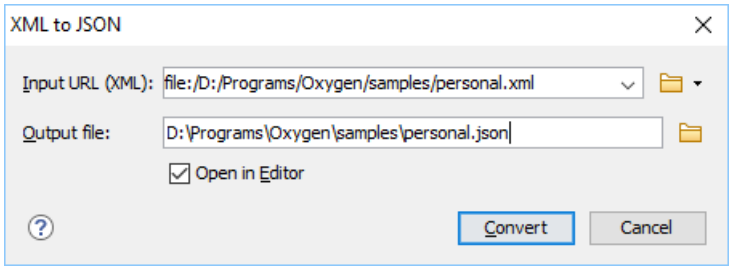


   Figure 685: XML to JSON Dialog Box

2. Choose or enter the **Input URL** of the XML document.
3. Choose the path of the **Output file** that will contain the resulting JSON document.
4. Select the **Open in Editor** option to open the resulting JSON document in the main editing pane.
5. Click the **Convert** button.

The original XML document is now converted to a JSON document.

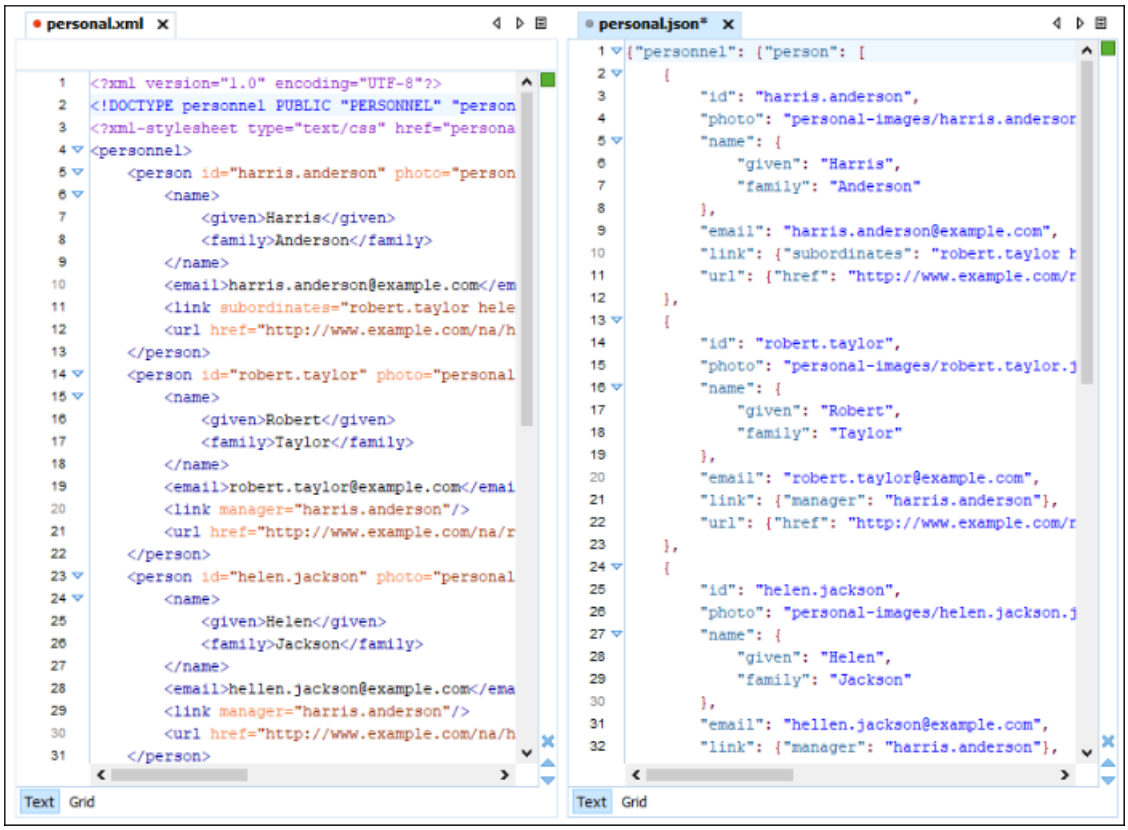


Figure 686: Example: XML to JSON Operation Result

Compiling an XSL Stylesheet for Saxon

As of Saxon 9.7, it is possible to export a compiled form of a stylesheet as an XML file (called a *stylesheet export file* or SEF). Oxygen XML Editor plugin includes a simple tool called **Compile XSL Stylesheet for Saxon** (found in the **XML Tools** menu) that does this for you.

Use-Cases for a Stylesheet Export File (SEF)

- **Use Saxon-JS to run transformations in a browser** - A *stylesheet export file* (SEF) is needed if you want to use the Saxon-JS product to run transformations in a browser, as in the following example:

```
<script type="text/javascript" src="SaxonJS/SaxonJS.min.js"></script>
<script>
    window.onload = function() {
      SaxonJS.transform({
         stylesheetLocation: "books.sef",
         sourceLocation: "books.xml"
         });
    }
</script>
```

- **Use SEF to run transformations in Oxygen XML Editor plugin** - You can also use a *stylesheet export file* (SEF) in Oxygen XML Editor plugin to apply an XSLT transformation over an XML file. This requires **Saxon-EE** or **Saxon-PE** versions of the Saxon product and you must select one of those two versions for the **Target** when you configure the SEF file. When configuring the XSLT transformation, you will specify the SEF file in the **XSL URL** field.

Compiling an SEF File

The **Compile XSL Stylesheet for Saxon** tool can be found in the **XML Tools** menu and it compiles a specified stylesheet as an XML file (*stylesheet export file* with a file extension of `.sef`).

Selecting this tool opens the **Compile XSL Stylesheet for Saxon** dialog box that allows you to configure some options for conversion.

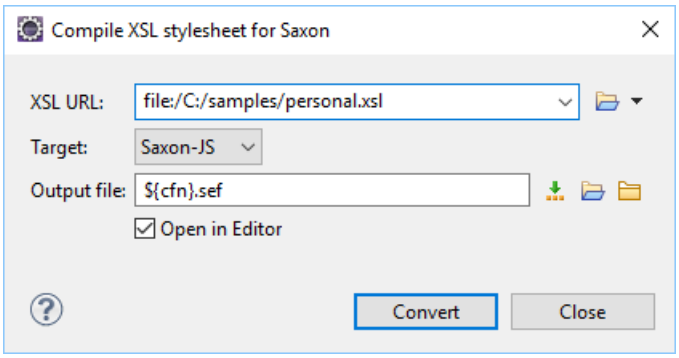


Figure 687: Compile XSL Stylesheet for Saxon Dialog Box

This dialog box includes the following options:

XSL URL

Allows you to select URL of the source XSL stylesheet. You can specify the URL by using the text field, the history drop-down, or the browsing tools in the **Browse** drop-down list.

Target

Allows you to select the type of Saxon product that the export file will be used with. You can choose **Saxon-JS**, **Saxon-EE**, **Saxon-PE**, or **Saxon-HE**.

Output file

You can specify the path where the output file will be saved by entering it in the text field, using the **Insert Editor Variables** button, or using the browsing tool buttons ( ).

Open in Editor

Select this option to open the resulting *stylesheet export file* in the main Oxygen XML Editor plugin editing pane.

Convert

Use this button to generate the *stylesheet export file* according the options selected in this dialog box.

Generate Documentation

Oxygen XML Editor plugin includes a tool for generating documentation for XSLT, XML Schema, XQuery, and WSDL documents.

Generating Documentation for an XML Schema

Oxygen XML Editor plugin can generate detailed documentation for the components of an XML Schema in HTML, PDF, DocBook, or other custom formats. You can select the components and the level of detail. The components are hyperlinked in both HTML and DocBook documents.

Note: You can generate documentation for both XML Schema version 1.0 and 1.1.

To generate documentation for an XML Schema document, select **XML Schema Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate XML Schema Documentation** action from the contextual menu of the **Navigator** view.

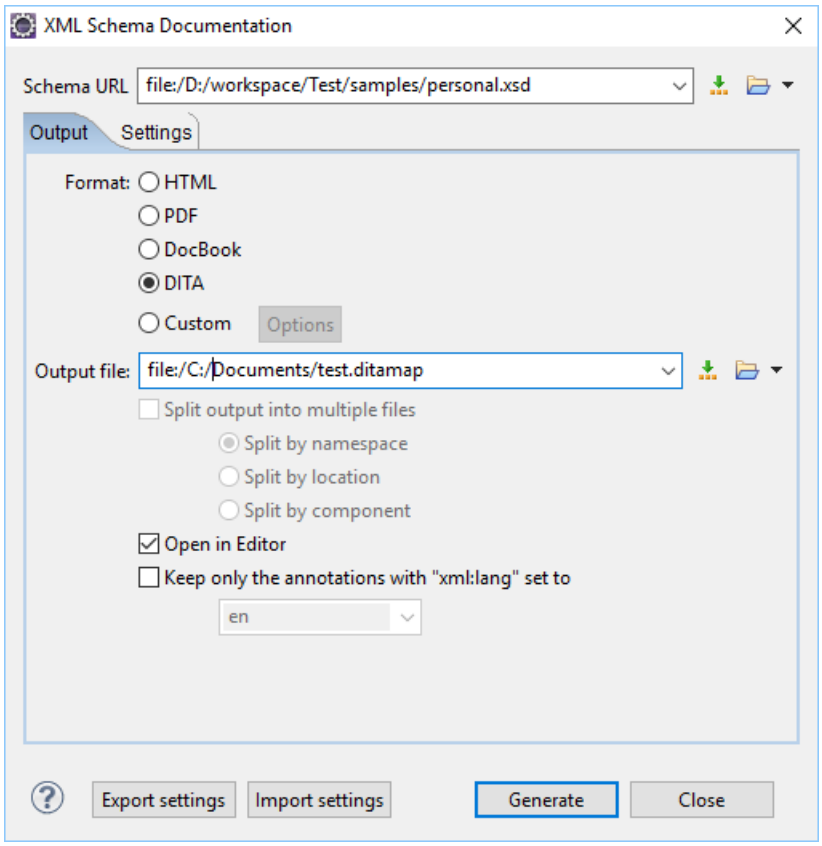


Figure 688: XML Schema Documentation Dialog Box

The **Schema URL** field of the dialog box must contain the full path to the XML Schema (XSD) file for which you want to generate documentation. The schema may be a local or a remote file. You can specify the path to the schema by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:
  - **HTML** - The documentation is generated in HTML output format.
  - **PDF** - The documentation is generated in PDF output format.
  - **DocBook** - The documentation is generated in DocBook output format.
  - **DITA** - The documentation is generated in DITA output format.
  - **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.
- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type. For DITA and DocBook documents, this option appears as **Open in Editor** and the result will be opened in Oxygen XML Editor plugin (in the current editor).

Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.

- **Keep only the annotations with xml:lang set to** - The generated output will contain only the annotations with the `xml:lang` attribute set to the selected language. If you choose a primary language code (for example, **en** for English), this includes all its possible variations (**en-us**, **en-uk**, etc.).

Settings Tab

When you generate documentation for an XML schema you can choose what components to include in the output and the details to be included in the documentation.

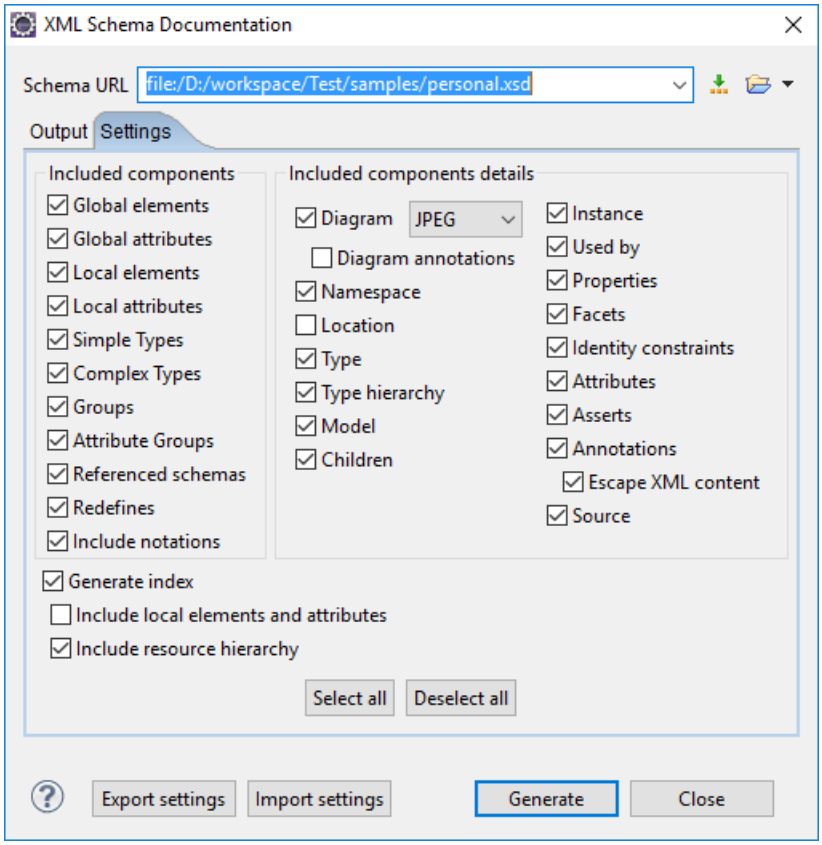


Figure 689: Settings Tab of the XML Schema Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following components: **Global elements**, **Global attributes**, **Local elements**, **Local attributes**, **Simple Types**, **Complex Types**, **Groups**, **Attribute Groups**, **Redefines**, **Referenced schemas**, **Include notations**.

You can choose whether or not to include the following other details:

- **Diagram** - Displays the diagram for each component. You can choose the image format (JPEG, PNG, SVG) to use for the diagram section. The generated diagrams are dependent on the options from the Schema Design Properties page.
  - **Diagram annotations** - This option controls whether or not the annotations of the components presented in the diagram sections are included.
- **Namespace** - Displays the namespace for each component.
- **Location** - Displays the schema location for each component.
- **Type** - Displays the component type if it is not an anonymous one.
- **Type hierarchy** - Displays the types hierarchy.
- **Model** - Displays the model (sequence, choice, all) presented in BNF form. The separator characters that are used depend upon the information item used:
  - `xs:all` - Its children will be separated by space characters.

    - `xs:sequence` - Its children will be separated by comma characters.
    - `xs:choice` - Its children will be separated by / characters.
- **Children** - Displays the list of component's children.
- **Instance** - Displays an XML instance generated based on each schema element.
- **Used by** - Displays the list of all the components that reference the current one. The list is sorted by component type and name.
- **Properties** - Displays some of the component's properties.
- **Facets** - Displays the facets for each simple type
- **Identity constraints** - Displays the identity constraints for each element. For each constraint there are presented the name, type (unique, key, keyref), reference attribute, selector and field(s).
- **Attributes** - Displays the attributes for the component. For each attribute there are presented the name, type, fixed or default value, usage and annotation.
- **Asserts** - Displays the **assert** elements defined in a complex type. The test, XPath default namespace, and annotation are presented for each assert.
- **Annotations** - Displays the annotations for the component. If you choose **Escape XML Content**, the XML tags are present in the annotations.
- **Source** - Displays the text schema source for each component.
- **Generate index** - Displays an index with the components included in the documentation.
    - **Include local elements and attributes** - If selected, local elements and attributes are included in the documentation index.
    - **Include resource hierarchy** - Specifies whether or not the resource hierarchy for an XML Schema documentation is generated. It is deselected by default.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the XML Schema documentation.

Related Information:

Customizing PDF or DocBook Output of Generated XML Schema Documentation on page 712

Generating Documentation for an XSLT Stylesheet

You can use Oxygen XML Editor plugin to generate detailed documentation in HTML format for the elements (top-level elements whose names are in the XSLT namespace) of an XSLT stylesheet. You can select what XSLT elements to include in the generated documentation and also the level of details to present for each of them. The elements are hyperlinked. To generate documentation in a custom output format, you can edit the XSLT stylesheet used to generate the documentation, or create your own stylesheet.

To open the **XSLT Stylesheet Documentation** dialog box, select **XSLT Stylesheet Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate Stylesheet Documentation** action from the contextual menu of the **Navigator** view.

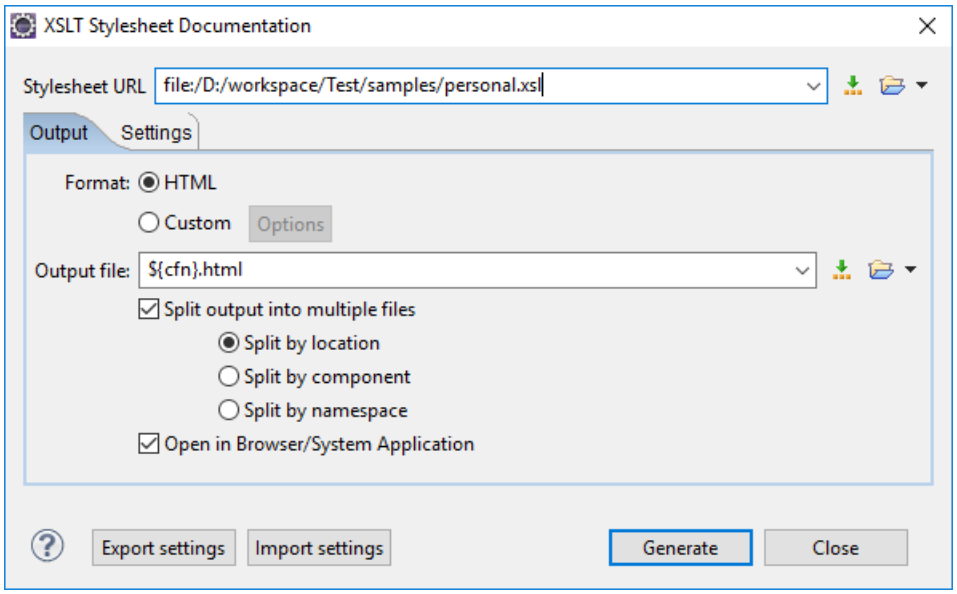


Figure 690: XSLT Stylesheet Documentation Dialog Box

The **XSL URL** field of the dialog box must contain the full path to the XSL Stylesheet file you want to generate documentation for. The stylesheet may be a local or a remote file. You can specify the path to the stylesheet by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:
  - **HTML** - The documentation is generated in HTML output format.
  - **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.
- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. For large XSLT stylesheets, choosing another split criterion may generate smaller output files, providing faster documentation browsing. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.

Settings Tab

When you generate documentation for an XSLT stylesheet you can choose what XSLT elements to include in the output (templates, functions, global parameters, global variables, attribute sets, character maps, keys, decimal formats, output formats, XSLT elements from referenced stylesheets) and the details to include in the documentation.

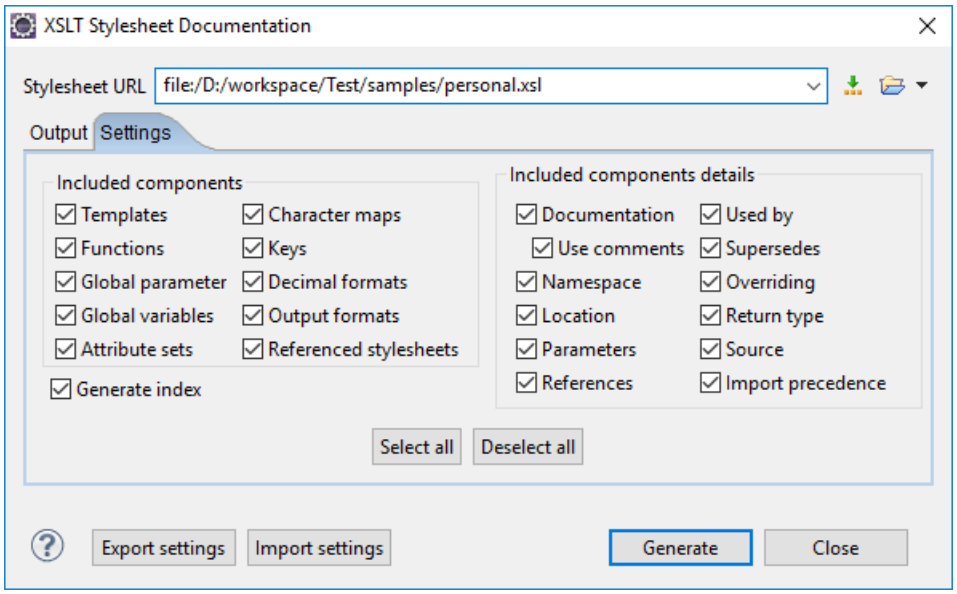


Figure 691: Settings Tab of the XSLT Stylesheet Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following components: **Templates**, **Functions**, **Global parameters**, **Global variables**, **Attribute sets**, **Character maps**, **Keys**, **Decimal formats**, **Output formats**, **Referenced stylesheets**.

You can choose whether or not to include the following other details:

- **Documentation** - Shows the documentation for each XSLT element. For HTML format, the user-defined data elements that are recognized and transformed in documentation blocks of the XSLT elements they precede, are the ones from the following schemas:
  - Oxygen XML Editor plugin built-in XSLT documentation schema.
  - A subset of DocBook 5 elements. The recognized elements are: *section*, *sect1* to *sect5*, *emphasis*, *title*, *ulink*, *programlisting*, *para*, *orderedlist*, *itemizedlist*.
  - A subset of DITA elements. The recognized elements are: *concept*, *topic*, *task*, *codeblock*, *p*, *b*, *i*, *ul*, *ol*, *pre*, *sl*, *sli*, *step*, *steps*, *li*, *title*, *xref*.
  - Full XHTML 1.0 support.
  - XSLStyle documentation environment. XSLStyle uses DocBook or DITA languages inside its own user-defined data elements. The supported DocBook and DITA elements are the ones mentioned above.
  - DOXSL documentation *framework*. Supported elements are : *codefrag*, *description*, *para*, *docContent*, *documentation*, *parameter*, *function*, *docSchema*, *link*, *list*, *listitem*, *module*, *parameter*, *template*, *attribute-set*;

    Other XSLT documentation blocks that are not recognized will just be serialized inside an HTML *pre* element. You can change this behavior by using a custom format instead of the built-in HTML format and providing your own XSLT stylesheets.
- **Use comments** - Controls whether or not the comments that precede an XSLT element is treated as documentation for the element they precede. Comments that precede or succeed the *xsl:stylesheet* element, are treated as documentation for the whole stylesheet. Note that comments that precede an import or include directive are not collected as documentation for the imported/included module. Also, comments from within the body of the XSLT elements are not collected at all.
- **Namespace** - Shows the namespace for named XSLT elements.
- **Location** - Shows the stylesheet location for each XSLT element.
- **Parameters** - Shows parameters of templates and functions.
- **References** - Shows the named XSLT elements that are referenced from within an element.
- **Used by** - Shows the list of all the XSLT elements that reference the current named element.
- **Supersedes** - Shows the list of all the XSLT elements that are superseded the current element.
- **Overriding** - Shows the list of all the XSLT elements that override the current element.
- **Return type** - Shows the return type of the function.

- **Source** - Shows the text stylesheet source for each XSLT element.
- **Import precedence** - Shows the computed import precedence as declared in the XSL transformation specifications.
- **Generate index** - Creates an index with all the XSLT elements included in the documentation.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command-line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the XSLT documentation.

Related Information:

XSLT Stylesheet Component Documentation Support on page 641

Generating HTML Documentation for an XQuery Document

To generate HTML documentation for an XQuery document, use the **XQuery Documentation** dialog box. It is opened with the **XQuery Documentation** action that is available from the **XML Tools** > **Generate Documentation** menu or from the **Generate XQuery Documentation** action from the contextual menu of the **Navigator** view.

The dialog box allows you to configure a set of parameters for the process of generating the HTML documentation.

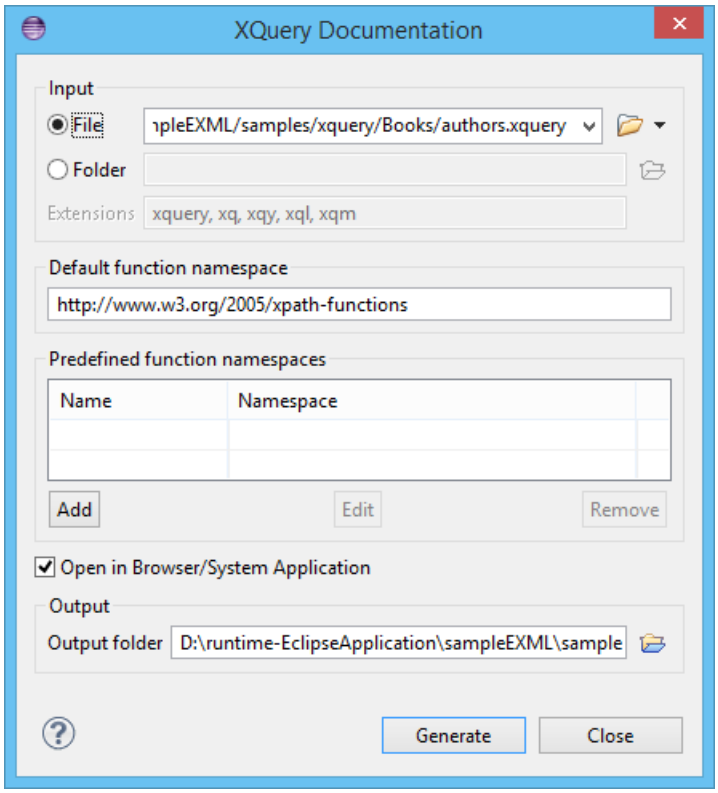


Figure 692: XQuery Documentation Dialog Box

The following options are available:

- **Input** - The full path to the XQuery file must be specified in one of the two fields in this section:
  - **URLFile** - The URL of the file in which you want to generate the documentation.
  - **Folder** - The directory that contains the files for which you want to generate the documentation. You can also specify the XQuery file extensions to be searched for in the specified directory.
- **Default function namespace** - Optional URI for the default namespace for the submitted XQuery.
- **Predefined function namespaces** - Optional, engine-dependent, predefined namespaces that the submitted XQuery refers to. They allow the conversion to generate annotation information to support the presentation

component hypertext linking (only if the predefined modules have been loaded into the local xqDoc XML repository).

- **Open in Browser/System Application** - Select this option if you want the result to be opened in the system application associated with that file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.
- **Output** - Allows you to specify where the generated documentation is saved on disk.

Generating Documentation for WSDL Documents

You can use Oxygen XML Editor plugin to generate detailed documentation for the components of a WSDL document in HTML format. You can select the WSDL components to include in your output and the level of details to present for each of them. Also, the components are hyperlinked. You can also generate the documentation in a custom output format by using a custom stylesheet.

Note: The WSDL documentation includes the XML Schema components that belong to the internal or imported XML schemas.

To generate documentation for a WSDL document, select **WSDL Documentation** from the **XML Tools** > **Generate Documentation** menu or from the **Generate WSDL Documentation** action from the contextual menu of the **Navigator** view.

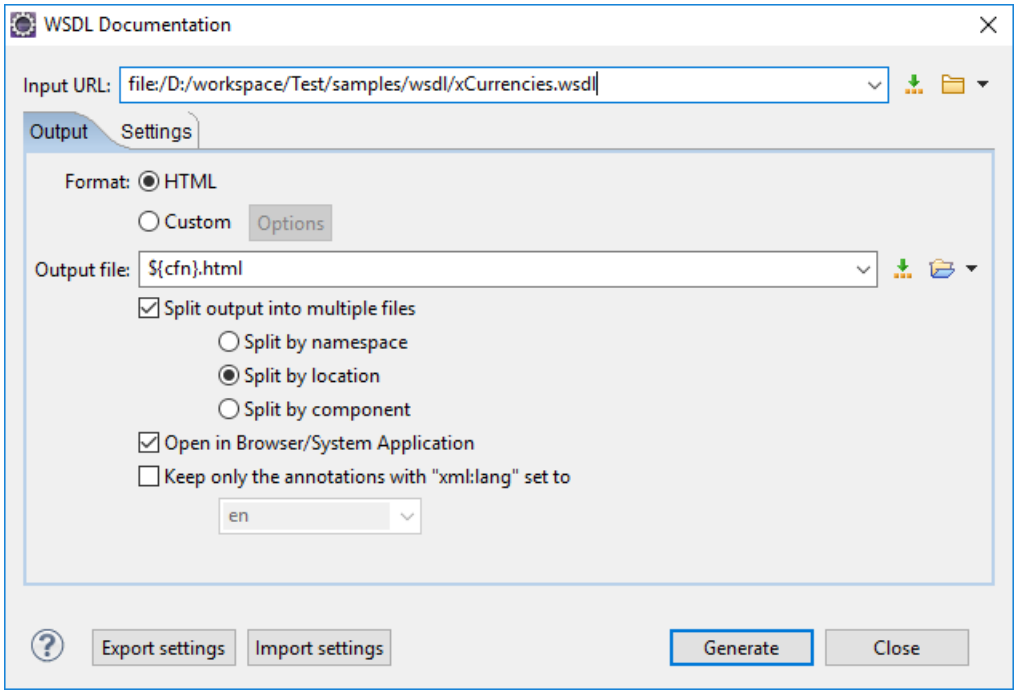


Figure 693: WSDL Documentation Dialog Box

The **Input URL** field of the dialog box must contain the full path to the WSDL document that you want to generate documentation for. The WSDL document may be a local or a remote file. You can specify the path to the WSDL file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.

Output Tab

The following options are available in the **Output** tab:

- **Format** - Allows you to choose between the following formats:
  - **HTML** - The documentation is generated in HTML output format.
  - **Custom** - The documentation is generated in a custom output format, allowing you to control the output. Click the **Options** button to open a **Custom format options** dialog box where you can specify a custom

stylesheet for creating the output. There is also an option to **Copy additional resources to the output folder** and you can select the path to the additional **Resources** that you want to copy. You can also choose to keep the intermediate XML files created during the documentation process by deselecting the **Delete intermediate XML file** option.

- **Output file** - You can specify the path of the output file by entering it in the text field, or by using the **Insert Editor Variables** button or the options in the **Browse** drop-down menu.
- **Split output into multiple files** - Instructs the application to split the output into multiple files. For large WSDL documents, choosing a different split criterion may generate smaller output files providing a faster documentation browsing. You can choose to split them by namespace, location, or component name.
- **Open in Browser/System Application** - Opens the result in the system application associated with the output file type.

  Note: To set the browser or system application that will be used, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there. This will take precedence over the default system application settings.
- **Keep only the annotations with xml:lang set to** - The generated output will contain only the annotations with the `xml:lang` attribute set to the selected language. If you choose a primary language code (for example, **en** for English), this includes all its possible variations (**en-us**, **en-uk**, etc.).

Setting Tab

When you generate documentation for a WSDL document, you can choose what components to include in the output and the details to be included in the documentation.

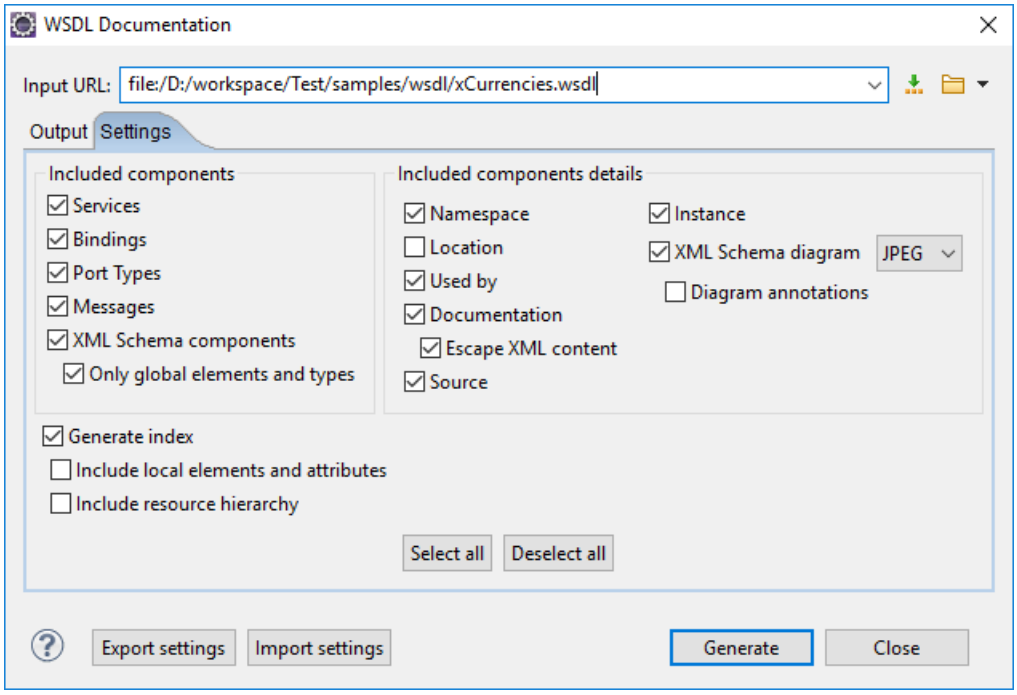


Figure 694: Settings Tab of the WSDL Documentation Dialog Box

The **Settings** tab allows you to choose whether or not to include the following:

- **Components**
  - **Services** - Specifies whether or not the generated documentation includes the WSDL services.
  - **Bindings** - Specifies whether or not the generated documentation includes the WSDL bindings.
  - **Port Types** - Specifies whether or not the generated documentation includes the WSDL port types.
  - **Messages** - Specifies whether or not the generated documentation includes the WSDL messages.
  - **XML Schema Components** - Specifies whether or not the generated documentation includes the XML Schema components.

    - **Only global elements and types** - Specifies whether or not the generated documentation includes only global elements and types.
- **Component Details**
    - **Namespace** - Presents the namespace information for WSDL or XML Schema components.
    - **Location** - Presents the location information for each WSDL or XML Schema component.
    - **Used by** - Presents the list of components that reference the current one.
    - **Documentation** - Presents the component documentation. If you choose **Escape XML Content**, the XML tags are presented in the documentation.
    - **Source** - Presents the XML fragment that defines the current component.
    - **Instance** - Generates a sample XML instance for the current component.

      Note: This option applies to the XML Schema components only.
    - **XML Schema Diagram** - Displays the diagram for each XML Schema component. You can choose the image format (JPEG, PNG, SVG) to use for the diagram section.
        - **Diagram annotations** - Specifies whether or not the annotations of the components presented in the diagram sections are included.
- **Generate index** - Displays an index with the components included in the documentation.
    - **Include local elements and attributes** - If selected, local elements and attributes are included in the documentation index.
    - **Include resource hierarchy** - Specifies whether or not the resource hierarchy for an XML Schema documentation is generated. It is deselected by default.

Export settings - Save the current settings in a settings file for further use (for example, with the exported settings file you can generate the same documentation from the command-line interface.)

Import settings - Reloads the settings from the exported file.

Generate - Use this button to generate the WSDL documentation.

Canonicalizing Files

You can select the *canonicalization* algorithm to be used for a document from the dialog box that is displayed by using the **Canonicalize** action that is available from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu.

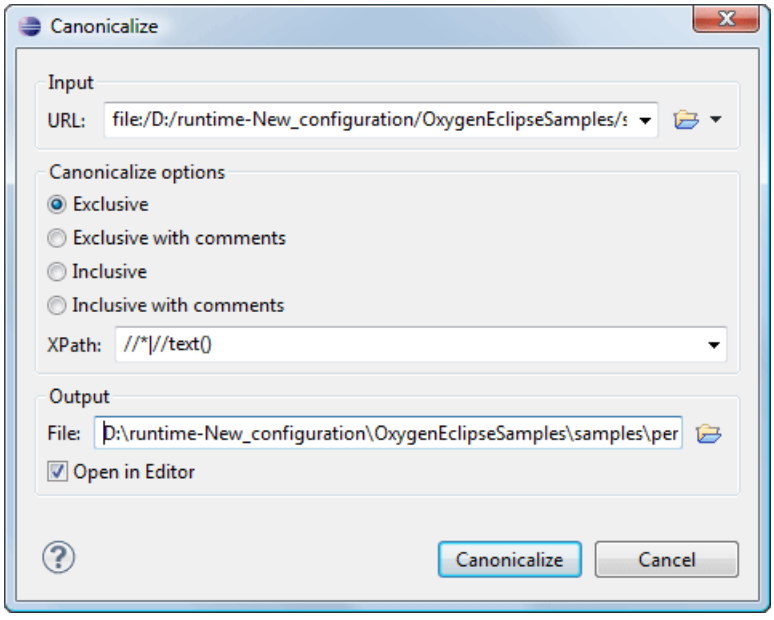


Figure 695: Canonicalization Settings Dialog Box

The **Canonicalize** dialog box allows you to set the following options:

- **Input URL** - Available if the **Canonicalize** action was selected from the **XML Tools** menu. It allows you to specify the location of the input file.
- **Exclusive** - If selected, the exclusive (uncommented) *canonicalization* method is used.

  Note: *Exclusive Canonicalization* just copies the namespaces you are actually using (the ones that are a part of the XML syntax). It does not look into attribute values or element content, so the namespace declarations required to process these are not copied. This is useful if you have a signed XML document that you want to insert into other XML documents (or you need self-signed structures that support placement within various XML contexts), as it will ensure the signature is verified correctly each time.
- **Exclusive with comments** - If selected, the exclusive with comments *canonicalization* method is used.
- **Inclusive** - If selected, the inclusive (uncommented) *canonicalization* method is used.

  Note: *Inclusive Canonicalization* copies all the declarations, even if they are defined outside of the scope of the signature, and all the declarations you might use will be unambiguously specified. Inclusive *Canonicalization* is useful when it is less likely that the signed data will be inserted in other XML document and it is the safer method from the security standpoint because it requires no knowledge of the data that are to be secured to safely sign them. A problem may occur if the signed document is moved into another XML document that has other declarations because the Inclusive *Canonicalization* will copy them and the signature will be invalid.
- **Inclusive with comments** - If selected, the inclusive with comments *canonicalization* method is used.
- **XPath** - The XPath expression provides the fragments of the XML document to be signed.
- **Output** - Available if the **Canonicalize** action was selected from the **XML Tools** menu. It allows you to specify the output file path where the signed XML document will be saved.
- **Open in editor** - If selected, the output file will be opened in the editor.

Related Information:

Digital Signatures Overview on page 615

Signing Files

You can select the type of signature to be used for documents from a signature settings dialog box. To open this dialog box, select the **Sign** action from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu.

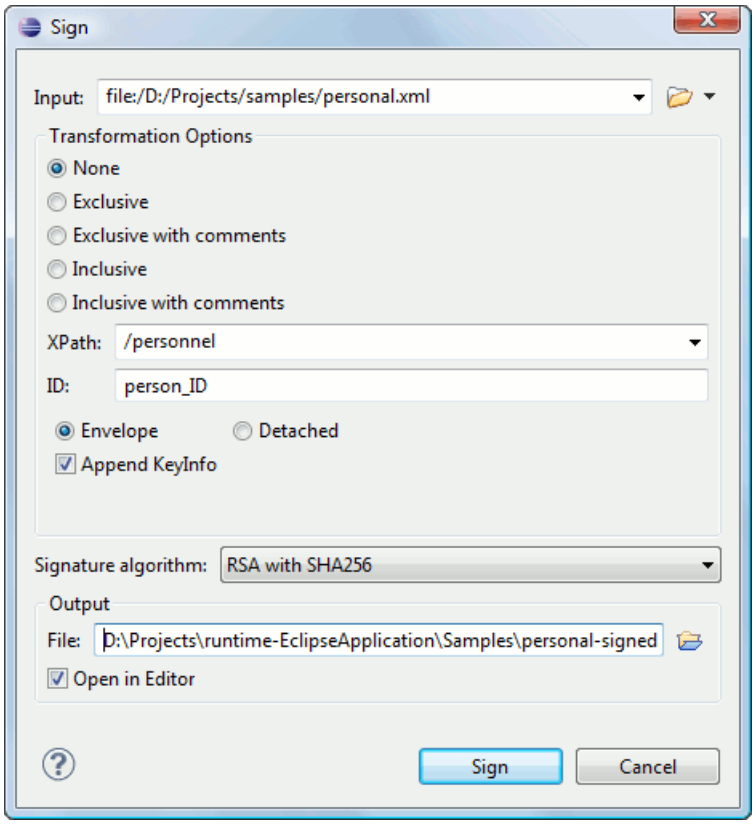


Figure 696: Signature Settings Dialog Box

The following options are available:

Note: If Oxygen XML Editor plugin could not find a valid certificate, a link is provided at the top of the dialog box that opens the XML Signing Certificates preferences page where you can configure a valid certificate.

- **Input** - Available if the **Sign** action was selected from the **XML Tools** menu. Specifies the location of the input URL.
- **Transformation Options** - See the Digital Signature Overview section for more information about these options.
  - **None** - If selected, no *canonicalization* algorithm is used.
  - **Exclusive** - If selected, the exclusive (uncommented) *canonicalization* method is used.

    Note: *Exclusive Canonicalization* just copies the namespaces you are actually using (the ones that are a part of the XML syntax). It does not look into attribute values or element content, so the namespace declarations required to process these are not copied. This is useful if you have a signed XML document that you want to insert into other XML documents (or you need self-signed structures that support placement within various XML contexts), as it will ensure the signature is verified correctly each time.
  - **Exclusive with comments** - If selected, the exclusive with comments *canonicalization* method is used.
  - **Inclusive** - If selected, the inclusive (uncommented) *canonicalization* method is used.

    Note: *Inclusive Canonicalization* copies all the declarations, even if they are defined outside of the scope of the signature, and all the declarations you might use will be unambiguously specified. Inclusive *Canonicalization* is useful when it is less likely that the signed data will be inserted in other XML document and it is the safer method from the security standpoint because it requires no knowledge of the data that are to be secured to safely sign them. A problem may occur if the signed document is moved into another XML document that has other declarations because the Inclusive *Canonicalization* will copy them and the signature will be invalid.
  - **Inclusive with comments** - If selected, the inclusive with comments *canonicalization* method is used.
- **XPath** - The XPath expression provides the fragments of the XML document to be signed.

- **ID** - Provides ID of the XML element to be signed.
- **Envelope** - If selected, the *enveloped* signature is used. See the Digital Signature Overview for more information.
- **Detached** - If selected, the *detached* signature is used. See the Digital Signature Overview for more information.
- **Append KeyInfo** - If this option is selected, the `ds:KeyInfo` element will be added in the signed document.
- **Signature algorithm** - The algorithm used for signing the document. The following options are available: **RSA with SHA1**, **RSA with SHA256**, **RSA with SHA384**, and **RSA with SHA512**.
- **Output** - Available if the **Sign** action was selected from the **XML Tools** menu. Specifies the path of the output file where the signed XML document will be saved.
- **Open in editor** - If selected, the output file will be opened in Oxygen XML Editor plugin.

Related Information:

Digital Signatures Overview on page 615
Verifying Signature on page 620
Example of How to Digitally Sign XML Files or Content on page 620

Verifying Signature

You can verify the signature of a file by selecting the **Verify Signature** action from the **Source** submenu when invoking the contextual menu in **Text** mode or from the **XML Tools** menu. The **Verify Signature** dialog box then allows you to specify the location of the file whose signature is verified.

If the signature is valid, a dialog box displays the name of the signer. Otherwise, an error shows details about the problem.

Related Information:

Digital Signatures Overview on page 615
Signing Files on page 618
Example of How to Digitally Sign XML Files or Content on page 620

WSDL SOAP Analyzer

WSDL SOAP Analyzer is a tool that helps you test if the messages defined in a Web Service Descriptor (WSDL) are accepted by a Web Services server.

After you edit and validate your Web service descriptor against a mix of the XML Schemas for WSDL and SOAP, it is easy to check if the defined SOAP messages are accepted by the remote Web Services server by using the integrated **WSDL SOAP Analyzer** tool (available from the toolbar or **WSDL** menu).

Oxygen XML Editor plugin provides two ways of testing, one for the currently edited WSDL document and another for the remote WSDL documents that are published on a web server. To open the **WSDL SOAP Analyzer** tool for the currently edited WSDL document do one of the following:

- Click the **WSDL SOAP Analyzer** toolbar button.
- Use the **WSDL SOAP Analyzer** action from the **WSDL** menu.
- Go to **Open with** > **WSDL Editor** in the contextual menu of the **Navigator** view.

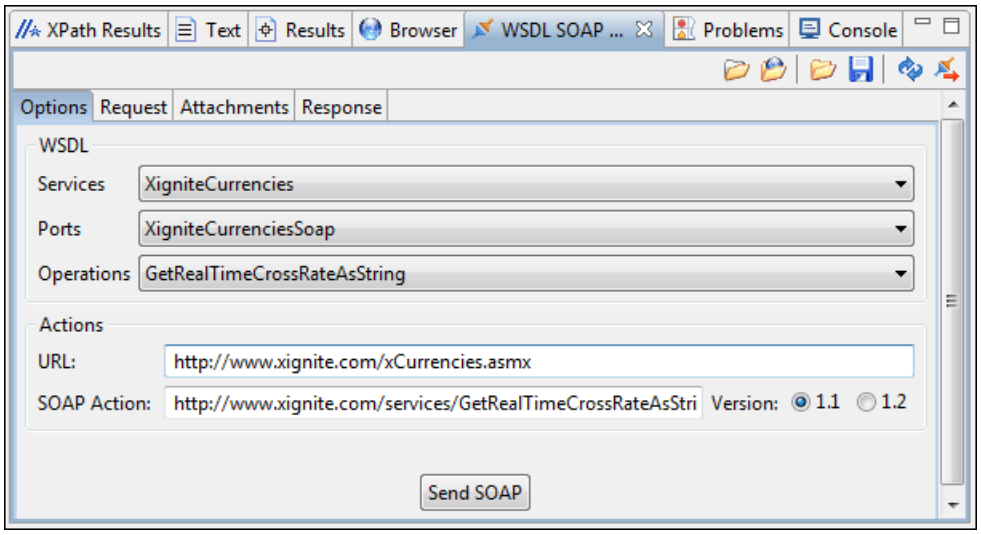


Figure 697: WSDL SOAP Analyzer View

This tool contains a SOAP analyzer and sender for Web Services Description Language file types. The analyzer fields are as follows:

- **Services** - The list of services defined by the WSDL file.
- **Ports** - The ports for the selected service.
- **Operations** - The list of available operations for the selected service.
- **Action URL** - The script that serves the operation.
- **SOAP Action** - Identifies the action performed by the script.
- **Version** - Choose between 1.1 and 1.2. The SOAP version is selected automatically depending on the selected port.
- **Request Editor** - It allows you to compose the web service request. When an action is selected, Oxygen XML Editor plugin tries to generate as much content as possible for the SOAP request. The envelope of the SOAP request has the correct namespace for the selected SOAP version, that is *http://schemas.xmlsoap.org/soap/envelope/* for SOAP 1.1 or *http://www.w3.org/2003/05/soap-envelope* for SOAP 1.2. Usually you just have to change a few values for the request to be valid. The *Content Completion Assistant* is available for this editor and is driven by the schema that defines the type of the current message. While selecting various operations, Oxygen XML Editor plugin remembers the modified request for each one. You can press the **Regenerate** button to overwrite your modifications for the current request with the initial generated content.
- **Attachments List** - You can define a list of file URLs to be attached to the request.
- **Response Area** - Initially it displays an auto generated server sample response so you can have an idea about how the response looks like. After pressing the **Send** button, it presents the message received from the server in response to the Web Service request. It may show also error messages. If the response message contains attachments, Oxygen XML Editor plugin prompts you to save them, then tries to open them with the associated system application.
- **Errors List** - There may be situations where the WSDL file is respecting the WSDL XML Schema, but it fails to be valid (for example, in the case of a message that is defined by means of an element that is not found in the types section of the WSDL). In such a case, the errors are listed here. This list is presented only when there are errors.
- **Send Button** - Executes the request. A status dialog box is displayed when Oxygen XML Editor plugin is connecting to the server.

The testing of a WSDL file is straight-forward: click the WSDL analysis button, then select the service, the port, and the operation. The editor generates the skeleton for the SOAP request. You can edit the request, eventually attach files to it and send it to the server. Watch the server response in the response area. You can find more details in the Testing Remote WSDL Files section.

Note: SOAP requests and responses are automatically validated in the **WSDL SOAP Analyzer** using the XML Schemas specified in the WSDL file.

Once defined, a request derived from a Web Service descriptor can be saved with the **Save** button to a Web Service SOAP Call (WSSC) file for later reuse. In this way, you save time in configuring the URLs and parameters.

You can open the result of a Web Service call in an editor panel using the **Open** button.

Testing Remote WSDL Files

To open and test a remote WSDL file the steps are the following:

1. Go to **Window** > **Show View** > **Other** > **Oxygen XML Editor plugin** > **WSDL SOAP Analyzer**.
2. Press the **Choose WSDL** button and enter the URL of the remote WSDL file.
   You enter the URL:
   - by typing
   - by browsing the local file system
   - by browsing a remote file system
   - by browsing a UDDI Registry
3. Press the **OK** button.
   This will open the **WSDL SOAP Analyzer** tool. In the **Saved SOAP Request** tab you can open directly a previously saved Web Service SOAP Call (WSSC) file, thus skipping the analysis phase.

UDDI Registry Browser

Pressing the button in the **WSDL File Opener** dialog box (menu **Tools** > **WSDL SOAP Analyzer**) opens the **UDDI Registry Browser** dialog box.

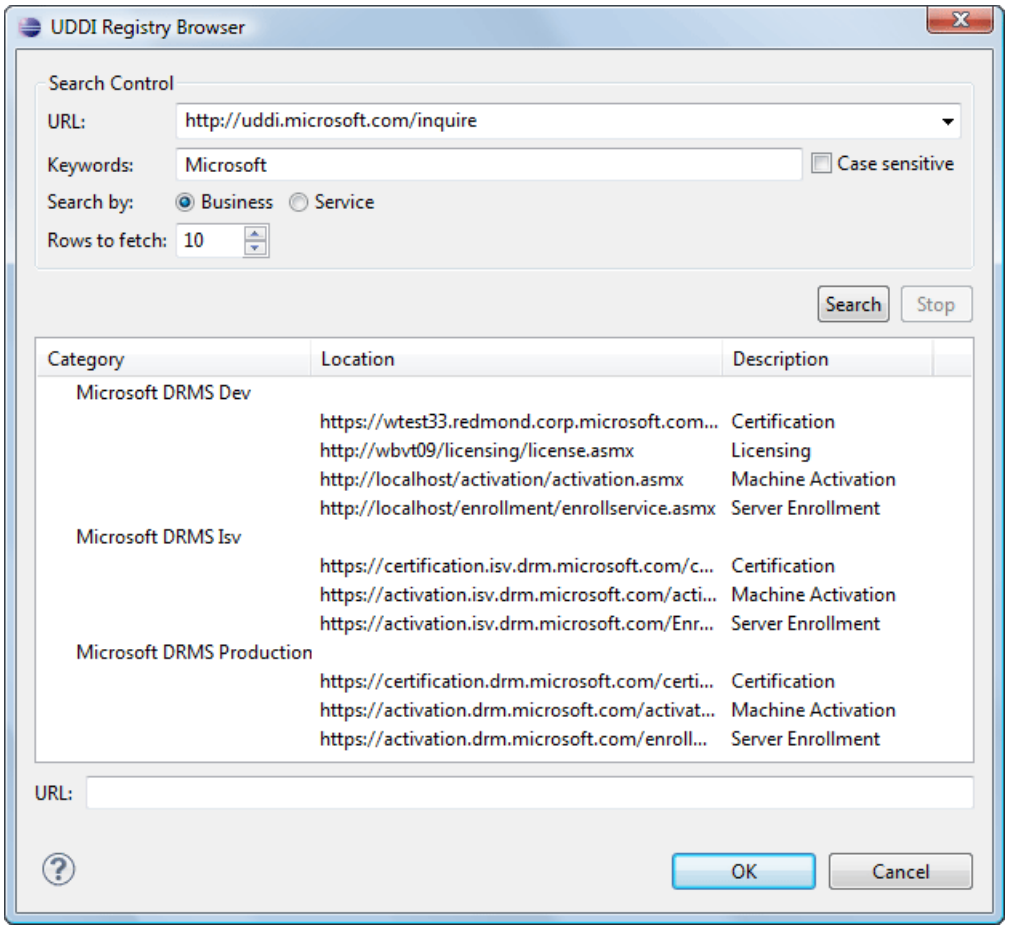


Figure 698: UDDI Registry Browser Dialog Box

The fields of the dialog box are as follows:

- **URL** - Type the URL of an UDDI registry or choose one from the default list.
- **Keywords** - Enter the string you want to be used when searching the selected UDDI registry for available Web services.
- **Rows to fetch** - The maximum number of rows to be displayed in the result list.
- **Search by** - You can choose to search either by company or by provided service.
- **Case sensitive** - When selected, the search takes into account the keyword case.
- **Search** - The WSDL files that matched the search criteria are added in the result list.

When you select a WSDL from the list and click the **OK** button, the **UDDI Registry Browser** dialog box is closed and you are returned to the **WSDL File Opener** dialog box.

XML Schema Regular Expressions Builder

The XML Schema regular expressions builder allows you to test regular expressions on a fragment of text as they are applied to an XML instance document. Start the tool by selecting **XML Schema Regular Expressions Builder** from the **XML Tools** menu.

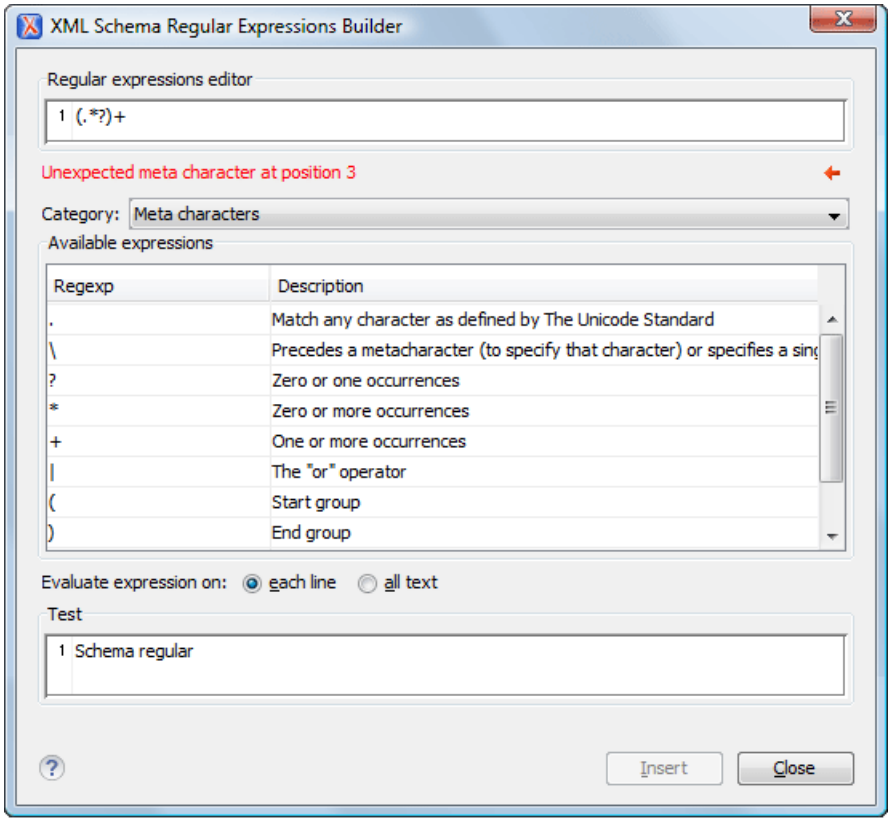


Figure 699: XML Schema Regular Expressions Builder Dialog Box

The dialog box contains the following:

Regular expressions editor

Allows you to edit the regular expression to be tested and used. Content completion is available and presents a list with all the predefined expressions. It is triggered by pressing **Ctrl + Space (Command + Space on OS X)**.

Error display area

If the edited regular expression is incorrect, an error message will be displayed here. The message contains the description and the exact location of the error. Also, clicking the quick navigation button (←) highlights the error inside the regular expression.

Category

You can choose from several categories of predefined expressions. The selected category influences the displayed expressions in the **Available expressions** table.

Available expressions

This table includes the available regular expressions and a short description for each of them. The set of expressions depends on the category selected in the previous **Category** combo box. You can add an expression in the **Regular expressions editor** by double-clicking the expression row in the table. You will notice that in the case of **Character categories** and **Block names**, the expressions are also listed in complementary format.

Evaluate expression on

You can choose between two options:

- **Evaluate expression on each line** - The edited expression will be applied on each line in the **Test** area.
- **Evaluate expression on all text** - The edited expression will be applied on the whole text.

Test

A text editor that allows you to enter a text sample for which the regular expression will be applied. All matches of the edited regular expression will be highlighted.

After editing and testing your regular expression you can insert it in the current editor. The **Insert** button will become active when an editor is opened in the background and there is an expression in the **Regular expressions editor**.

The regular expression builder cannot be used to insert regular expressions in the **Grid** mode or schema **Design** mode. Accordingly, the **Insert** button will be not available if the current document is edited in these modes.

Note: Some regular expressions may indefinitely block the Java Regular Expressions engine. If the execution of the regular expression does not end in about five seconds, the application displays a dialog box that allows you to interrupt the operation.

Common Problems

19

Topics:

- Performance Problems and Solutions
- Misc Problems and Solutions

This section provides a collection of common performance and other types of problems that might be encountered when using Oxygen XML Editor plugin, along with their possible solutions.

Performance Problems and Solutions

This section contains solutions for some common performance problems that may appear when running Oxygen XML Editor plugin.

Out of Memory on External Processes

Problem

Oxygen XML Editor plugin throws an *Out Of Memory* error when trying to generate PDF output with the built-in Apache FOP processor.

Cause

The amount of allocated memory might be insufficient.

Solutions

- Open the **Preferences** dialog box , go to **XML** > **XSLT-FO-XQuery** > **FO Processors**, and increase the value of the **Memory available to the built-in FOP** option.
- For external XSL-FO processors, XSLT processors, and external tools, the maximum value of the allocated memory is set in the command line of the tool using the **-Xmx** parameter set to the Java virtual machine.

Related Information:

FO Processors Preferences on page 111

Custom Engines Preferences on page 109

How to Enable Debugging for FO Processor Transformations on page 1127

Performance Issues with Large Documents

Problem

The performance of the application slows down considerably over time when working with large documents.

Cause

A possible cause is that the application needs more memory to run properly.

Solutions

- You can increase the maximum amount of memory available to Oxygen XML Editor plugin by setting the `-vmargs` and `-Xmx` parameters in the command used to launch the Eclipse platform.

Attention: The maximum amount of memory should not be equal to the physical amount of memory available on the machine because in that case the operating system and other applications will have no memory available.

- **Note:**

Misc Problems and Solutions

This chapter presents common problems that may appear when running the application along with solutions for these problems.

'Address Family Not Supported by Protocol Family; Connect' Error

Problem

I have experienced the following error: *"Address Family Not Supported by Protocol Family; Connect"*. How do I solve it?

Cause

This seems to be an IPv6 connectivity problem. By default, the Java runtime used by Oxygen XML Editor plugin prefers to create connections via IPv6, if the support is available. However, even though it is available in appearance, IPv6 sometimes happens to be configured incorrectly on some systems.

Solution

A quick solution for this problem is to set the `java.net.preferIPv4Stack` Java property to `true` (`java.net.preferIPv4Stack=true`), by following this procedure:

1. Create a file named `custom_commons.vmoptions` and add on a single line – `Djava.net.preferIPv4Stack=true`. Then save the file and copy it to the Oxygen XML Editor plugin installation folder (may need admin access).
2. Restart Oxygen XML Editor plugin.
3. Make sure the procedure was successful by going to **Help** > **About** > **System properties** and check that the value of the `java.net.preferIPv4Stack` property is `true`.

Alignment Issues of the Main Menu on Linux Systems Based on Gnome 3.x

Problem

On some Linux systems based on Gnome 3.x (Ubuntu 11.x, 12.x), the main menu of Oxygen XML Editor plugin has alignment issues when you navigate it using your mouse.

Cause

This is a known problem caused by Java SE 6 1.6.0_32 and earlier.

Solution

You can resolve this problem using the latest Java SE 6 JRE from Oracle. To download the latest version, go to http://www.oracle.com/technetwork/java/javase/downloads/index.html.

To bypass the JRE bundled with Oxygen XML Editor plugin, go to the installation directory of Oxygen XML Editor plugin and rename or move the `jre` folder. If Oxygen XML Editor plugin does not seem to locate the system JRE, either set the JAVA_HOME environment variable to point to the location where you have installed the JRE, or you can simply copy that folder with the JRE to the installation directory and rename it to `jre` to take the place of the bundled JRE.

Compatibility Issue Between Java and Certain Graphics Card Drivers

Problem

Under certain settings, a compatibility issues can appear between Java and some graphics card drivers, which results in the text from the editor (in **Author** or **Text** mode) being displayed garbled.

Solution

If you encounter this problem, update your graphics card driver.

Damaged File Associations on OS X

Problem

After upgrading OS X and Oxygen XML Editor plugin, it is no longer associated to the appropriate file types (such as XML, XSL, XSD). How can I re-create the file associations?

Cause

The upgrade damaged the file associations in the LaunchService Database on your OS X machine.

Solution

You can rebuild the LaunchService Database with the following procedure. This will reset all file associations and rescan the entire file system searching for applications that declare file associations and collect them in a database used by Finder.

1. Find all the Oxygen XML Editor plugin installations on your hard drive.
2. Delete them by dragging them to the Trash.
3. Clear the Trash.
4. Unpack the Oxygen XML Editor plugin installation kit on your desktop.
5. Copy the contents of the archive into the folder `/ Applications / Oxygen`.
6. Run the following command in a Terminal:

   ```
   /System/Library/Frameworks/CoreServices.framework/Versions/A/Frameworks/
   LaunchServices.framework/Versions/A/Support/lsregister -kill -r -domain local -
   domain system -domain user
   ```
7. Restart Finder with the following command:

   ```
   killall Finder
   ```
8. Create an XML or XSD file on your desktop. It should have the Oxygen XML Editor plugin icon.
9. Double-click the file.
10. Accept the confirmation.

Result: When you start Oxygen XML Editor plugin, the file associations should work correctly.

Details to Submit in a Request for Technical Support Using the Online Form

Problem

What details should I add to my request for technical support on the online form in the product website?

Solution

When completing a request for Technical Support using the online form, include as many details as possible about your problem. For problems where a simple explanation may not be enough for the Technical Support team to reproduce or address the issue (such as server connection errors, unexpected delays while editing a document, an application crash, etc.), you should generate a log file and attach it to the problem report. In the case of a crash, you should also attach the crash report file generated by your operating system.

If the text content of an XML document you want to send to the support team contains sensitive or private information, you can use the **Randomize XML text content** action to create filler content. Before using this action, you need to copy the initial XML resources and save them in a separate folder. Otherwise, you might lose your original information.

To generate an Oxygen XML Editor plugin log file, follow these steps:

1. Create a text file called `log4j.properties` in the `lib` folder of the installed *plugin* folder, with the following content:

```
log4j.rootCategory= debug, R2

log4j.appender.R2=org.apache.log4j.RollingFileAppender
log4j.appender.R2.File=${user.home}/Desktop/oxygenLog/oxygen.log
log4j.appender.R2.MaxFileSize=12000KB
log4j.appender.R2.MaxBackupIndex=20
log4j.appender.R2.layout=org.apache.log4j.PatternLayout
log4j.appender.R2.layout.ConversionPattern=%r %p [ %t ] %c - %m%n
```

2. Restart the application.
3. Reproduce the error.
4. Close the application.
5. Delete the `log4j.properties` file because it might cause performance issues if you leave it in the `lib` folder.

   Important: The logging mode may severely decrease the performance of the application. Therefore, please do not forget to delete the `log4j.properties` file when you are done with the procedure.

Result: The resulting log file is named `oxygen#.log` (for example, `oxygen.log`, `oxygen.log.1`, `oxygen.log.2`, etc.) and is located in the `Desktop\oxygenLog` folder.

DITA Map Transformation Fails (Cannot Connect to External Location)

Problem

DITA map transformation fails because it cannot connect to an external location.

Solution

The transformation is run as an external Ant process so you can continue using the application as the transformation unfolds. All output from the process appears in the **DITA Transformation** tab.

The HTTP proxy settings are used for the Ant transformation, so if the transformation fails because it cannot connect to an external location, you can check the Network Connections.

DITA Map WebHelp Transformation Fails (Duplicate Topic References Found)

Problem

DITA Map WebHelp transformation fails with a message that indicates duplicate topic references were found.

Cause

By default the WebHelp transformation uses the `force-unique` parameter set to **true** to force the transformation to create unique output files for each instance of a resource when a map contains multiple references to a single topic. However, there are cases when this feature does not work as expected and the duplicate topic references are not handled properly.

Solution

To solve this issue, you should manually set a unique `copy-to` attribute on any duplicate topic reference that was not handled automatically by DITA-OT:

```
<map>
...
  <topicref href="../topics/MyTopic.dita"/>
...
```

```
  <topicref href="../topics/MyTopic.dita" copy-to="../topics/MyTopic-2.dita"/>
</map>
```

DITA PDF Transformation Fails

Problem

The DITA to PDF transformation fails.

Cause

To generate the PDF output, Oxygen XML Editor plugin uses the DITA Open Toolkit. This process sometimes results in errors. For information about some of the most common errors, see DITA PDF Processing Common Errors on page 1449.

Solution

If your transformation fails, you can detect some of the problems that caused the errors by running the **Validate and Check for Completeness** action. Depending on the options you select when you run it, this action reports errors such as topics referenced in other topics but not in the *DITA map*, broken links, and missing external resources.

You can analyze the **Results** tab of the DITA transformation and search for messages that contain text similar to `[fop] [ERROR]`. If you encounter this type of error message, edit the transformation scenario you are using and set the **clean.temp** parameter to **no** and the **retain.topic.fo** parameter to **yes**. Run the transformation, go to the temporary directory of the transformation, open the `topic.fo` file and go to the line indicated by the error. Depending on the XSL FO context try to find the DITA topic that contains the text that generates the error.

If none of the above methods helps you, go to **Help** > **About** > **Components** > **Frameworks** and check what version of the DITA Open Toolkit you are using. Copy the whole output from the DITA OT console output and either report the problem on the DITA User List or send it to support@oxygenxml.com.

Related Information:

How to Enable Debugging for FO Processor Transformations on page 1127

DITA PDF Processing Common Errors

There are cases when the PDF processing fails when trying to publish DITA content to a PDF file. This topic lists some of the common problems and possible solutions.

Problem: Cannot Save PDF

The FO processor cannot save the PDF at the specified target. The console output contains messages like this:

```
[fop] [ERROR] Anttask - Error rendering fo file:
C:\samples\dita\temp\pdf\oxygen_dita_temp\topic.fo
<Failed to open C:\samples\dita\out\pdf\test.pdf>
Failed to open samples\dita\out\pdf\test.pdf
.............
[fop] Caused by: java.io.FileNotFoundException:
C:\Users\default\Desktop\bev\out\pdf\test.pdf
(The process cannot access the file because it is being used by another process)
```

Solution: Cannot Save PDF

Such an error message usually means that the PDF file is already opened in a PDF reader application. The solution is to close the open PDF before running the transformation.

Problem: Table Contains More Cells Than Defined in Colspec

One of the DITA tables contains more cells in a table row than the defined number of `colspec` elements. The console output contains messages like this:

```
[fop] [ERROR] Anttask - Error rendering fo file:
D:\projects\eXml\samples\dita\flowers\temp\pdf\oxygen_dita_temp\topic.fo
<net.sf.saxon.trans.XPathException: org.apache.fop.fo.ValidationException:
```

```
The column-number or number of cells in the row overflows the number of
fo:table-columns specified for the table.
(See position 179:-1)>net.sf.saxon.trans.XPathException:
org.apache.fop.fo.ValidationException: The column-number or number of cells
in the row overflows the number of fo:table-columns specified for the table.
(See position 179:-1)
[fop]  at org.apache.fop.tools.anttasks.FOPTaskStarter.renderInputHandler
(Fop.java:657)
[fop]  at net.sf.saxon.event.ContentHandlerProxy.startContent
(ContentHandlerProxy.java:375)
.............
[fop] D:\projects\samples\dita\flowers\temp\pdf\oxygen_dita_temp\topic.fo ->
D:\projects\samples\dita\flowers\out\pdf\flowers.pdf
```

Solution: Table Contains More Cells Than Defined in Colspec

To resolve this issue, correct the `colspec` attribute on the table that caused the issue. To locate the table that caused the issue:

1. Edit the transformation scenario and set the parameter `clean.temp` to `no`.
2. Run the transformation, open the `topic.fo` file in Oxygen XML Editor plugin, and look in it at the line specified in the error message (`See position 179:-1`).
3. Look around that line in the XSL-FO file to find relevant text content that you can use (for example, with the **Find/Replace in Files** action in the **DITA Maps Manager** view) to find the original DITA topic for which the table was generated.

Problem: Broken Link

There is a broken link in the generated XSL-FO file. The PDF is generated but contains a link that is not working. The console output contains messages like this:

```
[fop] 1248 WARN [ main ] org.apache.fop.apps.FOUserAgent -
Page 6: Unresolved ID reference "unique_4_Connect_42_wrongID" found.
```

Solution: Broken Link

To resolve this issue:

1. Use the **Validate and Check for Completeness** action available in the **DITA Maps Manager** view to find such problems.
2. If you publish to PDF using a *DITAVAL* filter, select the same DITAVAL file in the **DITA Map Completeness Check** dialog box.
3. If the **Validate and Check for Completeness** action does not discover any issues, edit the transformation scenario and set the `clean.temp` parameter to `no`.
4. Run the transformation, open the `topic.fo` file in Oxygen XML Editor plugin, and search for the *unresolved ID references* (for example: `unique_4_Connect_42_wrongID`).
5. Look in the XSL-FO file to find relevant text content that you can use (for example, with the **Find/Replace in Files** action in the **DITA Maps Manager** view) to find the original DITA topic for which the table was generated.

Related Information:

How to Enable Debugging for FO Processor Transformations on page 1127

DITA to CHM Transformation Fails - Cannot Open File

Problem

The DITA to CHM transformation fails with the following error: `[exec] HHC5010: Error: Cannot open "fileName.chm". Compilation stopped.`

Cause

This error occurs when the CHM output file is opened and the transformation scenario cannot rewrite its content.

Solution

To solve this issue, close the CHM help file and run the transformation scenario again.

Tip: It is a good practice to validate the *DITA map* before executing the transformation scenario. To do so, run the **Validate and Check for Completeness** action. Depending on the selected options, this action reports errors, such as topics referenced in other topics (but not in the *DITA map*), broken links, and missing external resources.

Related Information:
DITA Map to CHM (Compiled HTML Help) Transformation on page 935

DITA to CHM Transformation Fails - Compilation Failed

Problem

The DITA to CHM transformation fails with the following error: `[exec] HHC5003: Error: Compilation failed while compiling fileName`.

Cause 1

One possible cause for this error is that the processed file does not exist.

Solution 1

To solve this issue, fix the file reference before executing the transformation scenario again.

Cause 2

Another possible cause for this error is that the processed file has a name that contains space characters.

Solution 2

To solve the issue, remove any spacing from the file name and run the transformation scenario again.

Tip: It is a good practice to validate the *DITA map* before executing the transformation scenario. To do so, run the **Validate and Check for Completeness** action. Depending on the selected options, this action reports errors, such as topics referenced in other topics (but not in the *DITA map*), broken links, and missing external resources.

Related Information:
DITA Map to CHM (Compiled HTML Help) Transformation on page 935

Error After Switching Oxygen Products in Eclipse

Problem

On an Eclipse deployment, after installing and using the **Editor** product, I later decided to uninstall it and use **Author** or **Developer** instead. After installing the new product, I received an error that looked like this:

```
java.lang.Exception
      at org.eclipse.ui.internal.ViewReference.createErrorPart(ViewReference.java:112)
      at org.eclipse.ui.internal.ViewReference.createPart(ViewReference.java:98)
      at org.eclipse.ui.internal.e4.compatibility.CompatibilityPart.createPart
                                                  (CompatibilityPart.java:279)
      at org.eclipse.ui.internal.e4.compatibility.CompatibilityPart.create
                                                  (CompatibilityPart.java:317)
      at sun.reflect.NativeMethodAccessorImpl.invoke0(Native Method)
      at sun.reflect.NativeMethodAccessorImpl.invoke(NativeMethodAccessorImpl.java:62)
      at sun.reflect.DelegatingMethodAccessorImpl.invoke
                                          (DelegatingMethodAccessorImpl.java:43)
      at java.lang.reflect.Method.invoke(Method.java:498)
...
```

Solution

You need to manually delete the perspective for the product you uninstalled by following this procedure:

1. Go to **Window** > **Preferences** > **General** > **Perspectives**.

2. Select the perspective for the product you uninstalled (for example, **<oXygen/> XML**) and click **Delete**.
3. Restart Eclipse.
4. Go to **Window** > **Open Perspective** and select the perspective for the new product (for example, **<oXygen/> XML Author**).

Images Appear Stretched Out in the PDF Output

Problem

When publishing XML content (DITA, DocBook, etc.), images are sometimes scaled up in the PDF outputs but are displayed perfectly in the HTML (or WebHelp) output.

Solution

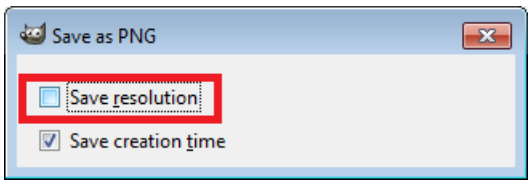
PDF output from XML content is obtained by first obtaining a intermediary XML format called XSL-FO and then applying an XSL-FO processor to it to obtain the PDF. This stretching problem is caused by the fact that all XSL-FO processors take into account the DPI (dots-per-inch) resolution when computing the size of the rendered image.

The PDF processor that comes out of the box with the application is the open-source Apache FOP processor. Here is what Apache FOP does when deciding the image size:

1. If the XSL-FO output contains width, height or a scale specified for the image `external-graphic` tag, then these dimensions are used. This means that if in the XML (DITA, DocBook, etc.) you set explicit dimensions to the image they will be used as such in the PDF output.
2. If there are no sizes (width, height or scale) specified on the image XML element, the processor looks at the image resolution information available in the image content. If the image has such a resolution saved in it, the resolution will be used and combined with the image width and height to obtain the rendered image dimensions.
3. If the image does not contain resolution information inside, Apache FOP will look at the FOP configuration file for a default resolution. The FOP configuration file for XSLT transformations that output PDF is located in the *[OXYGEN_INSTALL_DIR]*`/lib/fop.xconf`. DITA publishing uses the DITA Open Toolkit that has the Apache FOP configuration file located in [*DITA-OT-DIR*`/plugins/org.dita.pdf2/fop/conf/fop.xconf`. The configuration file contains two XML elements called `source-resolution` and `target-resolution`. The values set to those elements can be increased (usually a DPI value of 110 or 120 should render the image in PDF the same as in the HTML output).

The commercial **RenderX XEP** XSL-FO processor behaves similarly but as a fallback it uses 120 as the DPI value instead of using a configuration file.

Tip: It is best to save your images without any DPI resolution information. For example, when saving a PNG image in the open-source GIMP image editor, you do not want to save the resolution.



This allows you to control the image resolution from the configuration file for all referenced images.

Increasing the Memory for the Ant Process

Problem

The Ant build process runs out of memory.

Solution

For details about setting custom JVM arguments to the Ant build process, see JVM Arguments.

JPEG CMYK Color Space Issues

Problem

JPEG images with the CMYK color profile and have the color profiles embedded in the image aren't rendered in the **Author** mode.

Solution

If the color profile information is missing from the JPEG image but you have the ICC file available, you can copy the `profileFileName.icc` to the *`[OXYGEN_INSTALL_DIR]`*`\lib` directory.

If the color space profile is missing, JPEG images that have the CMYK color space are rendered without taking the color profile into account. The **Unsupported Image Type** message is displayed above the image.

Machine Signature Mismatch Error

Problem

During the floating license activation process, the license key becomes bound to a particular license server deployment. This means that a code that uniquely identifies your license server deployment (called *Machine Signature*) is sent to the Oxygen XML Editor plugin servers, which in turn will sign the license key. The *Machine Signature* is computed from the list of network interfaces of the machine where you deployed the floating license.

Causes

When starting the license server, if you receive an error stating that your server's Machine Signature does not match the one found in your license key, there are several possible causes:

1. You have moved your floating license key to a new machine that hosts your license server.
2. You have changed, added, or activated a new network interface in the machine that hosts your license server.

   Note: A specific example of when this could happen, is if you activate/deactivate the Bluetooth module or the WiFi module.

Solutions

- Revert back to your previous configuration.
- If this is not possible, contact our support team.

MSXML 4.0 Transformation Issues

Problem

When running a transformation scenario that uses the MSXML 4.0 transformer, I receive an error that looks like this:

```
Could not create the 'MSXML2.DOMDocument.4.0' object.
Make sure that MSXML version 4.0 is correctly installed on the machine.
```

Cause

It is likely that the latest MSXML 4.0 service pack is not installed on your computer.

Solution

To fix this issue, go to the Microsoft website and get the latest MSXML 4.0 service pack.

Navigation to a Web Page is Canceled when Viewing CHM on a Network Drive

Problem

When viewing a CHM on a network drive, I only see the TOC and an empty page that displays the message: **Navigation to the web page was canceled**.

Cause

This is actually normal behavior. The Microsoft viewer for CHM does not display the topics for a CHM opened on a network drive.

Solution

As a workaround, copy the CHM file on your local system and view it there.

Oxygen XML Editor plugin Takes Several Minutes to Start

Problem

Oxygen XML Editor plugin seems to take an abnormally long amount of time to start.

Cause

Some anti-virus software can cause Java applications, such as Oxygen XML Editor plugin, to start very slowly due to scanning compressed archives (such as the *JAR* libraries that all Java applications use).

Solution

A possible solution is to add the Oxygen XML Editor plugin folder to the list of exceptions in the anti-virus software settings.

High Resolution Scaling Issues

Problem

I encounter scaling detection issues in a high resolution display. For example, some GUI components are too small.

Cause

This sometimes happens when using multiple displays with different resolutions because the application cannot detect the correct scaling setting.

Solution

You can use the *com.oxygenxml.hidpi.scaling* custom system property to force a specific scaling setting. For example: `-Dcom.oxygenxml.hidpi.scaling=1.5` for 150% scaling.

Signature Verification Failed Error on a Resource from Documentum

Problem

When I try to open or edit a resource from Documentum, I receive the following error:

```
signature verification failed: certificate for All-MB.jar.checksum not signed by a certification authority.
```

Cause

The problem is that the certificates from the Java Runtime Environment 1.6.0_22 or later no longer validate the signatures of the UCF *JARS*.

Solution

Edit the `eclipse.ini` file from the Eclipse directory and add the following parameter to the -vmargs: `-Drequire.signed.ucf.jars=false`. For example:

```
-vmargs
-Xms40m
-Xmx256m
-Drequire.signed.ucf.jars=false
```

Syntax Highlights Not Available in Eclipse Plugin

Problem

I associated the `.ext` extension with Oxygen XML Editor plugin in Eclipse but an `.ext` file opened with the Oxygen XML Editor plugin plugin does not have syntax highlights.

Solution

Associate an extension with Oxygen XML Editor plugin in Eclipse versions 3.6-3.8, 4.2-4.7 by following these steps:

1. Associate the `.ext` extension with the Oxygen XML Editor plugin plugin:
   a. Open the **Preferences** dialog box and go to **General** > **Editors** > **File Associations**.
   b. Add `*.ext` to the list of file types.
   c. Select `*.ext` in the list by clicking it.
   d. Add Oxygen XML Editor plugin to the list of **Associated editors** and make it the default editor.
2. Associate the `.ext` extension with the **Oxygen XML** content type:
   a. Open the **Preferences** dialog box and go to **General** > **Content Types**.
   b. Add `*.ext` to the **File associations** list for the **Text** > **XML** > **Oxygen XML Editor plugin** content type.
3. Press the **OK** button in the Eclipse preferences dialog box.

Result: Now when an `*.ext` file is opened, the icon and the syntax highlights should be the same as for XML files opened with the Oxygen XML Editor plugin plugin.

TocJS Transformation Does not Generate All Files for a Tree-Like TOC

Problem

The *TocJS* transformation of a *DITA map* does not generate all the files needed to display the tree-like table of contents.

Solution

To get a complete set of output files, follow these steps:

1. Run the *XHTML* transformation on the same *DITA map*. Make sure the output gets generated in the same output folder as for the *TocJS* transformation.
2. Copy the content of the *DITA-OT-DIR*`/plugins/com.sophos.tocjs/basefiles` folder to the transformation output folder.
3. Copy the *DITA-OT-DIR*`/plugins/com.sophos.tocjs/sample/basefiles/frameset.html` file to the transformation output folder.
4. Edit `frameset.html` file.
5. Locate element `<frame name="contentwin" src="concepts/about.html">`.
6. Replace `"concepts/about.html"` with `"index.html"`.

References Outside the Main DITA Map Folder

Problem

A reference to a DITA topic, *map*, or binary resource (for example, an image) that is located outside of the folder where the main *DITA map* is located leads to problems when publishing the content using the DITA Open Toolkit.

Cause

DITA-OT often has trouble resolving references that are outside the directory where the published *DITA map* is found. By default, it does not even copy the referenced topics to the output directory.

Solution

To solve this, try one of the following solutions:

- Create another *DITA map* that is located in a folder path above all referenced folders and reference the original *DITA map* from this new map. Then transform this *DITA map* instead.
- Edit the transformation scenario and in the **Parameters** tab, change the value of the **fix.external.refs.com.oxygenxml** parameter to `true`. This parameter is used to specify whether or not the application tries to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references. The fix has no impact on your edited DITA content.

  Important: The **fix.external.refs.com.oxygenxml** parameter is only supported when the DITA OT transformation process is started from Oxygen XML Editor plugin.
- For PDF output, you can edit the transformation scenario and in the **Parameters** tab set the value of the **generate.copy.outer** parameter to 3. This parameter specifies whether to generate output files for content that is not located in or beneath the directory containing the DITA map file. By setting the value of this parameter to 3, the transformation scenario shifts the output directory so that it contains all output for the publication.

  Important: This method is recommended for transformation scenarios that use an external DITA-OT.

Windows Service Reports Incorrect Function Error When Starting (TCP Server)

Problem

My TCP floating license server reports an "Incorrect Function" error message when starting the Windows service.

Cause

This usually appears because the Windows service launcher cannot locate a Java virtual machine on your system.

Solution

Make sure that you have installed a 32-bit Java SE from Oracle (or Sun) on the system: http://www.oracle.com/technetwork/java/javase/downloads/index.html.

Windows Service Reports Process Terminated Unexpectedly Error (TCP Server)

Problem

My TCP floating license server reports a "Process Terminated Unexpectedly" error message for the Windows service.

Cause

This error message appears if the Windows service launcher quits immediately after being started. This problem usually happens because the license key has not been correctly deployed (`license.txt` file in the license folder).

Solution

Re-deploy your license key. For more information, see the Setting up a Floating License Server section.

XSLT Debugger Is Very Slow

Problem

When I run a transformation in the **XSLT Debugger** *perspective*, it is very slow.

Solution

If the transformation produces HTML or XHTML output, you can disable rendering of output in the XHTML output view during the transformation process. To view the XHTML output result do one of the following:

- Run the transformation in the **Editor** *perspective* and make sure the **Open in Browser/System Application** option is selected.
- Run the transformation in the **XSLT Debugger** *perspective*, save the text output area to a file, and use a browser application for viewing it (for example, Firefox or Internet Explorer).

DITA Authoring

20

Topics:

- Getting Started with DITA
- Working with DITA Maps
- Working with DITA Topics
- Working with Markdown Documents in DITA
- Working with Keys
- Reusing DITA Content
- Linking in DITA
- Publishing DITA Output
- DITA Profiling / Conditional Text
- DITA Open Toolkit Support
- DITA Specialization Support
- Master Files Support in DITA
- Metadata
- Migrating MS Office Documents to DITA
- DITA 1.3 Support

DITA is an XML standard, an architectural approach, and a writing methodology, developed by technical communicators for technical communicators. It provides a standardised architectural *framework* for a common structure for content that promotes the consistent creation, sharing, and re-use of content.

Some of the benefits of using DITA include the following:

- **Flexibility** - DITA is a topic-based architecture and it offers flexibility in content organization.
- **Modularity** - DITA allows for content reuse that saves time and reduces the number of modifications.
- **Structured Authoring** - DITA offers a standardized, methodological approach that helps to reduce authoring time and improve consistency.
- **Single-Source Publishing** - DITA provides the ability to change content in one place and have the change propagate everywhere.
- **Multiple Output Formats** - DITA supports multiple types of output.
- **Inheritance** - The DITA inheritance model makes it easy to specialize topics or elements within topics and you only have to define how the element is different from its immediate ancestor.
- **Process Automation** - DITA offers various ways to automate processes, such as with index or glossary production, output delivery, validation, and more.
- **Specialization** - DITA allows you to define your own information types and semantic elements/attributes to suit the needs of your particular content model.
- **Multi-Lingual** - DITA is a translation-friendly structure that supports numerous languages and text encodings.
- **Conditional Profiling** - DITA supports conditional text processing and profiling to filter content in the publishing stage.

This chapter is designed to be a guide to help content authors who use DITA. It also presents the Oxygen XML Editor plugin features that are specific to working with DITA documents and concepts.

DITA Resources

For more general information and technical details about working with DITA, refer to the following resources:

- The DITA Specifications.

- The DITA Style Guide Best Practices for Authors.
- Various sample DITA topics and maps can be found in the *[OXYGEN_INSTALL_DIR]*/samples/dita folder.

Related Information:

DITA Topics Document Type (Framework) on page 848
DITA Map Document Type (Framework) on page 858

Getting Started with DITA

The information in this topic is meant to be a very basic starting point for those who are just getting started using DITA in Oxygen XML Editor plugin. Oxygen XML Editor plugin makes it easy to create, edit, manage, and publish DITA content, but it requires at least some basic DITA knowledge. To truly get the most out of Oxygen XML Editor plugin and all of its DITA-related features, you should explore resources in the online DITA community to acquire knowledge of its concepts and uses.

Understanding DITA Topics

It is important to understand the role that a DITA topic plays in a DITA project. A DITA topic is not associated with a single published document. It is a separate entity that can potentially be included in many different books, help systems, or websites. Therefore, when you write a DITA topic you are not writing a book, a help system, or a website. You are writing an individual piece of content. This affects how you approach the writing task and how Oxygen XML Editor plugin works to support you as you write.

Most of your topics are actually related to other topics, and those relationships can affect how you write and handle things such as links and content reuse. Oxygen XML Editor plugin helps you manage those relationships. Depending on how your topics are related, you can use the tools provided in Oxygen XML Editor plugin, along with the features of DITA, in a variety of ways.

Creating a DITA Topic in Oxygen XML Editor plugin

To create a DITA topic:

1. Select **File** > **New** > **Other** > **Oxygen XML Editor plugin**, or click the **New** button on the toolbar, and select **New from Templates**.

   Step Result: The **New from Templates Wizard** is displayed:

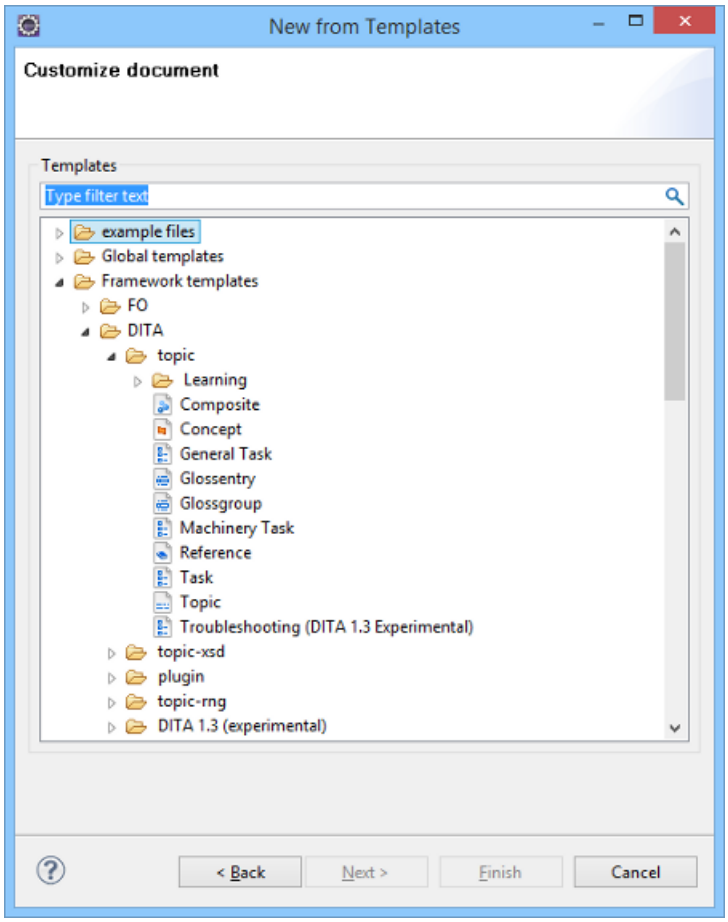


Figure 700: New DITA Document from Templates Wizard

2. Go to **Framework templates** > **DITA** > **topic** and select the type of topic that you want to create, then click **Next**.

   Note: If your organization has created DITA customizations, the appropriate template files may be in another location, and various types of topics may be provided for your use. Check with the person who manages your DITA system to see if you should be using templates from another directory.
3. Select a file path where it will be saved.
4. Click **Finish**.

   Result: Your document is opened in the editor. Eventually you will need to add a reference to it in your DITA map.

Your DITA topic is an XML document, thus all the editing features that Oxygen XML Editor plugin provides for editing XML documents also apply to DITA topics. Oxygen XML Editor plugin also provides additional specific DITA-related support for working with DITA topics, their associated *DITA maps*, and for creating DITA output.

Role of Maps

The basic method that DITA uses to express the relationship between topics is through a *DITA map*. Other relationships between topics, such as cross references, generally need to be made between topics in the same root map. DITA uses maps to determine which topics are part of any output that you create. While customized DITA solutions can use other mechanisms, generally DITA is not used as a way to publish individual topics. Output is created from a map and includes all the topics referenced by the map.

A publication is not always represented by a single map. For instance, if you are writing a book, you might use a submap to create each chapter and then organize the chapters in a main root map to create the book. This helps you to manage your content, offers the possibility of reusing submaps, and segregates content to support multiple people working on the same project.

Creating a Map in Oxygen XML Editor plugin

To create a map:

1. Select **File** > **New** > **Other** > **Oxygen XML Editor plugin**, or click the **New** button on the toolbar, and select **New from Templates**.
2. Go to **Framework templates** > **DITA Map** > **map** and select the type of map you want to create.
3. Choose whether you want to open the map in the **Editor** or in the **DITA Maps Manager**. Usually, opening it in the **DITA Maps Manager** is the best choice. The **DITA Maps Manager** presents a view of the *DITA map* that is similar to a table of contents.

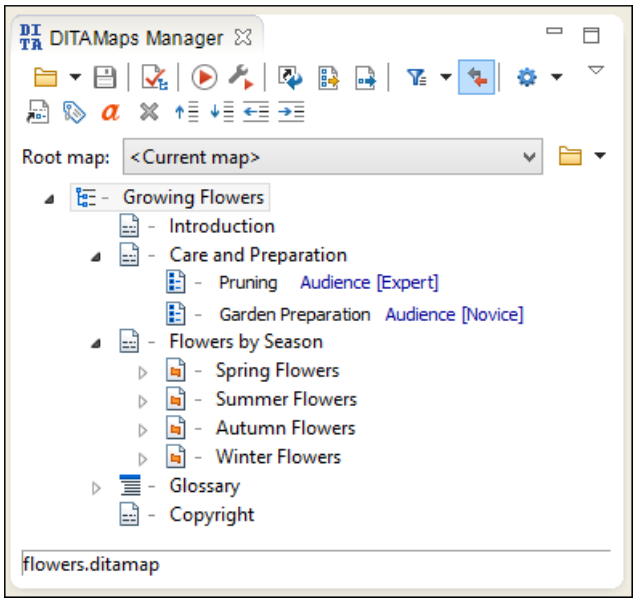


Figure 701: DITA Maps Manager View

Adding Existing Topics to a Map in Oxygen XML Editor plugin

There are several ways to add a topic reference to a map. Perhaps the easiest method is to add a reference to a topic that is already open in the editor:

1. Open the DITA topic in the main editing window.
2. Right-click the *DITA map* in the **DITA Maps Manager** view and choose **Reference to the currently edited file** from the **Append Child**, **Insert Before**, or **Insert After** submenu.

   Step Result: This opens the **Insert Reference** dialog box with all of the required fields already filled in for you.

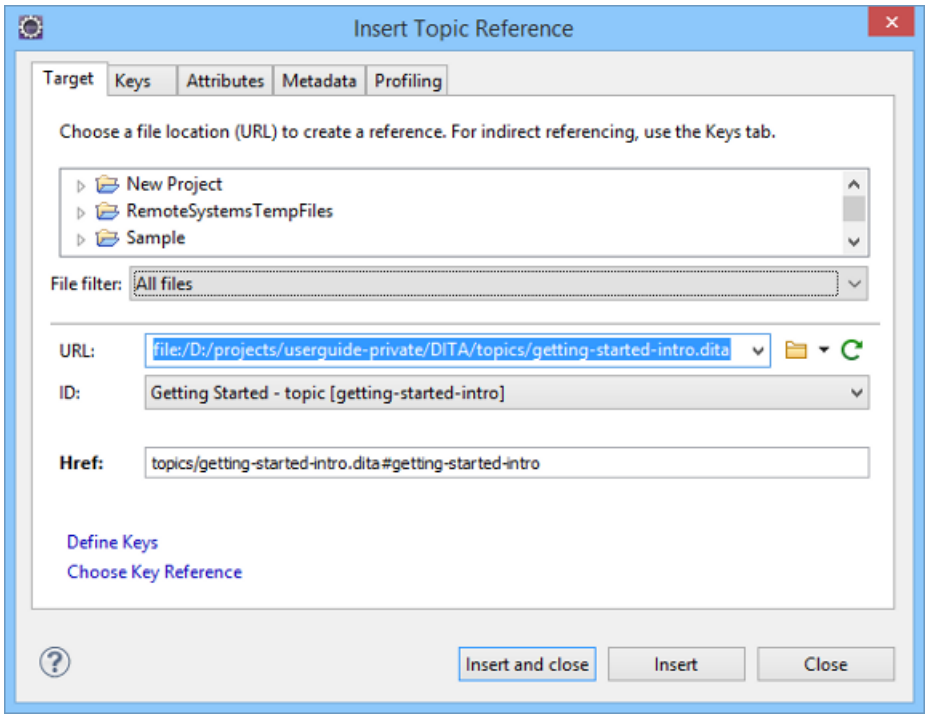


Figure 702: Insert Reference Dialog Box

3. You can fill in additional information in the various tabs in this dialog box or add it to the map later.
4. Select **Insert and close** to add a reference to your topic in the map.
5. Save the *DITA map*.

Adding New Topics to a Map in Oxygen XML Editor plugin

As you add topics to your map, you may want to create a new topic as a child or sibling of another topic. This is usually done at the map level.

To add a new topic to a map, follow these steps:

1. In the **DITA Maps Manager**, right-click the node in the current map where you want to add the new topic.
2. Select one of the following actions:
   - **Append Child** > **New** - Select this action to insert the new topic as a child of the selected node. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert Before** > **New** - Select this action to insert the new topic as a sibling to the current node, before it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert After** > **New** - Select this action to insert the new topic as a sibling to the current node, after it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Duplicate** - Select this action to create a copy of the selected topic and insert it as a sibling. This action opens a dialog box that allows you to choose the file name and location for the newly created copy of the topic. After you have selected the name and path for your new topic, click **OK**.

   Step Result: The new topic is now referenced (as a `topicref`) in the *DITA map* at the location where you inserted it and the new topic is opened in the editor.
3. Save the *DITA map*.

You can also change the order and nesting of topics in the **DITA Maps Manager** view by doing either of the following:

- Select the topic to move while holding down the **Alt** key and use the arrow keys to move it around.
- Use the mouse to drag and drop the topic to the desired location.

The way your parent and child topics are organized in any particular output depends on both the configuration of those topics in the map and the rules of the output transformation that is applied to them. Do not assume that your topics must have the same organization for all output types. The map defines the organization of the topics, not the topics themselves. It is possible to create a variety of maps, each with different organization and configuration options to produce a variety of outputs.

Adding Submaps in Oxygen XML Editor plugin

If you have a large set of information, such as a long book or extensive help system, a single map can become long and difficult to manage. To make it easier to manage, you can break up the content into smaller submaps. A submap might represent a chapter of a book, a section of a user manual, or a page on a website. To build a publication out of these smaller maps, you must add them to a map that represents the overall publication.

To add a child map to the current map:

1. Right-click the parent *DITA map* in the **DITA Maps Manager** view and choose **Append child** > **Map reference**.

   Step Result: This opens the **Insert Reference** dialog box with all of the required fields already filled in for you.
2. You can fill in additional information in the various tabs in this dialog box or add it to the map later.
3. Select **Insert and close** to add a reference to your submap in the main map.
4. Save the main *DITA map*.

Validating a Map in Oxygen XML Editor plugin

Just as it is with your individual topics, it is important to validate your maps. Oxygen XML Editor plugin provides a validation function for *DITA maps* that does more than simply validating that the XML is well formed. It also does the following:

- Validates all of the relationships defined in the maps.
- Validates all of the files that are included in the map.
- Validates all of the links that are expressed in the files.

Validating the map that describes your entire publication validates all the files that make up the publication and all of the relationships between them.

To validate a map:

1. Click the **Validate and Check for Completeness** button in the **DITA Maps Manager** view.

   Step Result: This opens the **DITA Map Completeness Check** dialog box.
2. Select any of the various options you want to check.
3. Click **Check** to run the validation process.

Publishing Your Topics in Oxygen XML Editor plugin

As noted previously, in DITA standards you usually do not publish output from an individual topic. Instead, you create published output by running a DITA transformation on a map. This collects all the topics that are referenced in the map, organizes them, and produces output in a particular format. By default, Oxygen XML Editor plugin uses the transformations provided by the **DITA Open Toolkit** for publishing to various output formats (such as PDF, WebHelp or EPUB). Your organization may have created various custom transformations or modified the built-in **DITA Open Toolkit** transformations. In either case, Oxygen XML Editor plugin manages them by using transformation scenarios.

To publish output for a map:

1. Click the **Configure Transformation Scenario(s)** button in the **DITA Maps Manager** view.

   Step Result: This opens the **Configure Transformation Scenario(s)** dialog box.

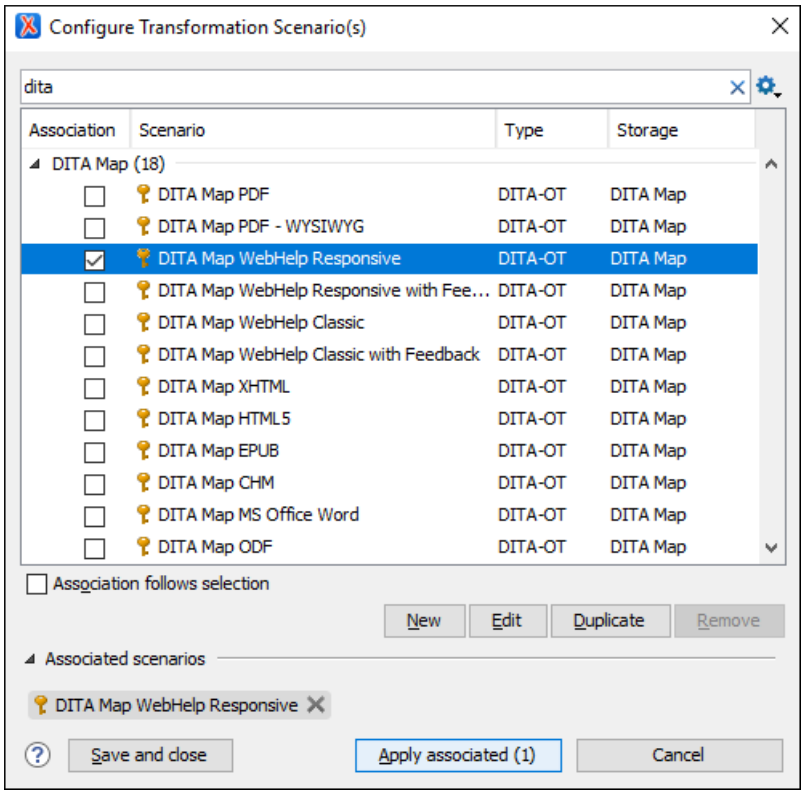


Figure 703: Configure Transformation Scenarios Dialog Box

2. Select the appropriate transformation depending on the type of output you desire.
3. To change or view the configuration or storage options for a transformation scenario, select the transformation and click **Edit**.
4. Click **Apply associated**.

   Result: Depending on the configuration of the transformation scenario, when the transformation is finished, your output may automatically be opened in the appropriate application.

Related Information:

DITA Authoring on page 1458
Editing XML Documents in Author Mode on page 441

Working with DITA Maps

In the DITA standard architecture you create documents by collecting topics into maps.

DITA Maps

A *DITA map* organizes a set of topics into a hierarchy. In most output formats, the structure of the map becomes the structure of the table of contents. Oxygen XML Editor plugin provides support for creating and managing *DITA maps* through the **DITA Maps Manager**. There are also specialized types of *DITA maps*, such as a *bookmap*, which is intended for creating the structure of a book.

Submaps

You do not have to create an entire publication using a single map. It is generally good practice to break up a large publication into several smaller submaps that are easier to manage. You can reuse submaps in multiple publications by including them in each of the main maps. The **DITA Maps Manager** provides support for easily creating and managing submaps.

Opening a DITA Map

There are several ways to open a *DITA map* and you can choose to open it in the **DITA Maps Manager** or in the XML Editor. Use any of the following methods to open a map:

- To open a submap in its own tab in the **DITA Maps Manager**, simply double-click it (or right-click it and select **Open**).
- To open a map in the XML editor from the **DITA Maps Manager**, right-click it and select **Open Map in Editor**.
- Drag a *DITA map* file from your system browser and drop it in the XML editor. This will open the map in the editor.
- To open a map in the **DITA Maps Manager**, you can right-click a map file in the **Navigator** view and select **Open in DITA Maps Manager**.

Chunking DITA Maps

By default, many output types place a single topic on each output page. In some cases you may want to output multiple topics as a single output page (also known as chunking). To support this, Oxygen XML Editor plugin provides an **Edit Properties** dialog box that allows you to easily configure the attributes of a topic to control how your table of contents and topics are rendered in the output.

Validating a Map

You should validate your maps to make sure that the individual topics are valid and that the relationships between them are working. Oxygen XML Editor plugin provides a validation function for *DITA maps* that performs a comprehensive validation of a map and its topics.

For more information about DITA editing, watch our video demonstration:

https://www.youtube.com/embed/t2cG3Xe1TXY

Related Information:

DITA Map Document Type (Framework) on page 858
DITA Map Author Mode Actions on page 859

DITA Maps Manager

Oxygen XML Editor plugin provides a view for managing and editing *DITA maps*. The **DITA Maps Manager** view presents a *DITA map* as a Table of Contents. It allows you to navigate the topics and maps, make changes, and apply transformation scenarios to obtain various output formats. By default, it is located to the left of the main editor. If the view is not displayed, it can be opened by selecting it from the **Window** > **Show View** menu.

The **DITA Maps Manager** includes a variety of useful actions to help you edit and organize the structure of your *DITA maps* and topics. The actions that are available and their functions depend on the type of nodes that are selected in the **DITA Maps Manager**. If you select multiple sibling nodes, the result of the actions will be applied to all the selected nodes. If you select multiple nodes that are not on the same hierarchical level, the actions will be applied to the parent node and the child nodes will inherit certain attributes from the parent node.

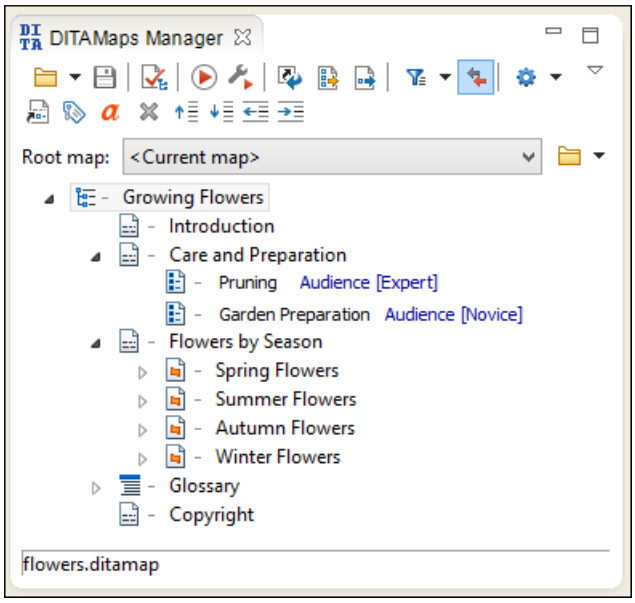


Figure 704: DITA Maps Manager View

Opening Maps in the DITA Maps Manager

The **DITA Maps Manager** view supports multiple open maps at the same time, with each one presented in its own tab. To open a *DITA map* in the **DITA Maps Manager**, use any of the following methods:

- To open a submap in its own tab, simply double-click it (or right-click it and select **Open**).
- Right-click a map file in the **Navigator** view and select **Open in DITA Maps Manager**.

If your map references other *DITA maps*, they will be shown, expanded, in the **DITA Maps Manager** view and you will be able to navigate their content. To edit the submaps and their content, you need to open each referenced map separately.

Drag and Drop in the DITA Maps Manager

You can move topics or nodes within the same map, or other maps, by dragging and dropping them into the desired position. You can arrange the nodes by dragging and dropping one or more nodes at a time. You can arrange multiple topics by dragging them while pressing the **Ctrl** or **Shift** key. Drop operations can be performed before, after, or as child of the targeted node.

Drag and drop operations include:

Copy

Select the nodes you want to copy and start dragging them. Before dropping them in the appropriate place, press and hold the **Ctrl** key. The mouse pointer changes to a ⊞ symbol to indicate that a copy operation is being performed.

Move

Select the nodes you want to move and drag and drop them in the appropriate place.

Promote (Ctrl + Alt + LeftArrow (Command + Alt + LeftArrow on OS X))/Demote (Ctrl + Alt + RightArrow (Command + Alt + RightArrow on OS X))

You can move nodes between child and parent nodes by using the **Promote** (**Ctrl + Alt + LeftArrow (Command + Alt + LeftArrow on OS X)**) and **Demote** (**Ctrl + Alt + RightArrow (Command + Alt + RightArrow on OS X)**) operations.

DITA Maps Manager Toolbar

The toolbar includes the following actions (also available in the**DITA Maps** menu) and their availability depend on the nodes that are selected:

Note: If multiple nodes are selected, the availability of the actions depends on the nodes that are selected.

Open Drop-down Menu

You can use this drop-down menu to open new *DITA maps* or to reopen recently viewed maps. The drop-down menu contains the following:

- List of recently viewed *DITA maps* that can be selected to reopen them.
- **Clear history** - Clears the history list of the recently viewed *DITA maps*.
- **Open** - Allows you to open the map in the **DITA Maps Manager** view. You can also open a map by dragging it from the file system explorer and dropping it into the **DITA Maps Manager** view.
- **Browse workspace** - Opens a file browser dialog box allowing you to select a file from the local workspace.
- **Open URL** - Displays the **Choose DITA Map** dialog box where you can specify a URL (defined by a protocol, host, resource path, and an optional port) or use the browsing tools in the **Browse for remote file** drop-down menu.

Save (Ctrl (Meta on Mac OS)+S)

Saves the current *DITA map*.

Validate and Check for Completeness

Checks the validity and integrity of the map.

Apply Transformation Scenario(s)

Applies the DITA Map transformation scenario that is associated with the current map.

Configure Transformation Scenario(s)

Opens the **Configure Transformation Scenarios(s)** dialog box where you can edit or create transformation scenarios or associate a DITA Map transformation scenario with the current map.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced documents. This action is useful when the referenced documents are modified externally. When they are modified and saved from Oxygen XML Editor plugin, the *DITA map* is updated automatically.

Open Map in Editor with Resolved Topics

Opens the *DITA map* in the main editor area with content from all topic references, expanded in-place. Content from the referenced topics is presented as read-only and you have to use the contextual menu action **Edit Reference** to open the topic for editing.

Tip: If you want to print the expanded content, you should consider changing the **Styles** drop-down to **+ Print ready**.

Open Map in Editor

For complex operations that cannot be performed in the simplified **DITA Maps Manager** view (for instance, editing a relationship table) you can open the map in the main editing area.

Note: You can also use this action to open referenced *DITA maps* in the **Editor**.

Profiling/Conditional Text Drop-down Menu

This drop-down menu contains the following actions:

- **Show Profiling Colors and Styles** - Select this option to turn on conditional styling. To configure the colors and styles open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text** > **Colors and Styles**.
- **Show Profiling Attributes** - Select this option to display the values of the profiling attributes at the end of the titles of topic references. When selected, the values of the profiling attributes are displayed in both the **DITA Maps Manager** view and in the **Author** view.
- **Show Excluded Content** - Controls if the content filtered out by a particular condition set is hidden or grayed-out in the editor area and in the **Outline** and **DITA Maps Manager** views. When this option is

selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

- **Profiling Settings** - Opens the preferences page for adding and editing the profiling conditions that you can apply in the **DITA Maps Manager** view and the **Author** mode editing pane. When a profiling condition set is applied, the keys that are defined in the *DITA map* are gathered by filtering out the excluded content.

Link with Editor

Toggles the synchronization between the file path of the current editor and the selected topic reference in the **DITA Maps Manager** view. If enabled, it results in the following types of synchronizations:

- If you select a topic tab in the main editing area and it is referenced in the map currently opened in the **DITA Maps Manager**, the reference to that topic is selected in the **DITA Maps Manager**.
- If you have a map opened in both the **DITA Maps Manager** and the main editor, selecting the map tab in the main editing area opens that map in the **DITA Maps Manager**.
- If you have a map opened in both the **DITA Maps Manager** and the main editor (**Author** mode) and , selecting one or more *topicrefs* in the **DITA Maps Manager** will also select the same *topicrefs* in the main editor.
- If you have a map opened in both the **DITA Maps Manager** and the main editor (**Author** mode) and , selecting one or more *topicrefs* in the main editor will also select the same *topicrefs* in the **DITA Maps Manager**.

Settings

Show extended toolbar

Toggles whether or not the extended toolbar will be displayed in the **DITA Maps Manager** toolbar.

Show root map toolbar

Toggles whether or not the **Root map** option will be displayed in the **DITA Maps Manager** toolbar.

Show topic titles

Toggles how topics are presented in the **DITA Maps Manager**. If selected, the title of each topic is shown. Otherwise, the file path (value of the `href` attribute) for each topic is shown.

Root map

Specifies a master *DITA map* (*root map*) that Oxygen XML Editor plugin uses to define a hierarchical structures of submaps and to establish a *key space* that defines the keys that are propagated throughout the entire map structure. For more information, see Selecting a Root Map on page 1474.

Browse Drop-down menu

You can use this drop-down menu to browse for *root maps* with the following choices:

- **Browse for local file** - Opens a local file browser dialog box, allowing you to select a local *root map*.
- **Browse workspace** - Allows you to select a *root map* from the local workspace.
- **Browse for remote file** - Displays the **Open using FTP/SFTP** dialog box that allows you to select a remotely stored *root map*.
- **Browse for archived file** - Displays the **Archive Browser** that allows you to browse the content of an archive and choose a *root map*.
- **Browse Data Source Explorer** - Opens the **Data Source Explorer** that allows you to browse the data sources defined in the Data Sources preferences page.

  Tip: You can open the **Data Sources** preferences page by using the **Configure Database Sources** shortcut from the **Open URL** dialog box.
- **Search for file** - Displays the **Find Resource** dialog box to search for a *root map*.

Insert Topic Reference

Opens the **Insert Reference** dialog box that allows you to insert references to targets such as topics, maps, topic sets, or key definitions.

Edit Properties

Opens the **Edit Properties** dialog box that allows you to configure the properties of a selected node. For more details about this dialog box, see Edit Properties Dialog Box on page 1487.

Edit Attributes

Opens a small in-place editor that allows you to edit the attributes of a selected node. You can find more details about this action in the Attributes View in Author Mode on page 202 topic.

Delete

Deletes the selected node.

Move Up

Moves the selected node up within the *DITA map* tree.

Move Down

Moves the selected node down within the *DITA map* tree.

Promote

Moves the selected node up one level to the level of its parent node.

Demote

Moves the selected node down one level to the level of its child nodes.

Contextual Menu of the DITA Maps Manager

Root Map

The following actions can be invoked from the contextual menu on the *root map* of an opened *DITA map* (many of them are also available in the**DITA Maps** menu):

Open Map in Editor

For complex operations that cannot be performed in the simplified **DITA Maps Manager** view (for instance, editing a relationship table) you can open the map in the main editing area.

Open Map in Editor with Resolved Topics

Opens the *DITA map* in the main editor area with content from all topic references, expanded in-place. Content from the referenced topics is presented as read-only and you have to use the contextual menu action **Edit Reference** to open the topic for editing.

Export DITA Map

Opens a dialog box that allows you to choose a destination for exporting the *DITA map*. It also includes a **Export as Zip archive** option that allows you to package the *DITA map* as a zip archive.

Find Unreferenced Resources

Allows you to search for orphaned resources that are not referenced in the *DITA maps*.

Edit Properties

Opens the **Edit Properties** dialog box that allows you to configure the properties of a selected node. For more details about this dialog box, see Edit Properties Dialog Box on page 1487.

Fast Create Topics

Opens the **Fast Create Topics** dialog box that allows you to quickly create multiple skeleton topics at once and you can specify their hierarchical structure within the *DITA map*.

Append Child submenu

Container sub-menu for a number of actions that create a map node as a child of the currently selected node:

- **New** - Opens a dialog box that allows you to configure some options for inserting a new topic.
- **Reference** - Inserts a reference to a topic file. You can find more details about this action in the Inserting References topic.

- **Reference to the currently edited file** - Inserts a reference to the currently edited file. You can find more details about this action in the Inserting References topic.
- **Key Reference** - Opens an **Insert Key Definition** dialog box that allows you to insert a key reference.
- **Key Reference with Keyword** - Opens a simplified **Insert Key Definition** dialog box that allows you to define a key and a value inside a *keyword*.
- A set of actions that open the **Insert Reference** dialog box that allow you to insert various reference specializations (such as **Anchor Reference**, **Glossary Reference**, **Map Reference**, **Navigation Reference**, **Topic Group**, **Topic Head**, **Topic Reference**, **Topic Set**, **Topic Set Reference**).

Search References

Searches all references to the current topic in the entire *DITA map*.

Refactoring submenu

The following actions are available from this submenu when invokes from a root map:

Rename resource

Allows you to change the name of a resource linked in the edited *DITA map*.

Move resource

Allows you to change the location on disk of a resource linked in the edited *DITA map*.

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Other XML Refactoring Actions

For your convenience, the last 5 XML Refactoring tool operations that were finished or previewed will also appear in this submenu.

XML Refactoring

Opens the XML Refactoring tool wizard that presents refactoring operations to assist you with managing the structure of your XML documents.

Check Spelling in Files

Allows you to spell check multiple files.

Paste

Allows you to paste content from the clipboard into the *DITA map*.

Paste Before

Pastes the content of the clipboard (only if it is a part of the *DITA map*) before the currently selected *DITA map* node.

Paste After

Pastes the content of the clipboard (only if it is a part of the *DITA map*) after the currently selected *DITA map* node.

Expand All

Allows you to expand the entire *DITA map* structure.

Collapse All

Allows you to collapse the entire *DITA map* structure.

Editable Child Nodes

The following actions are available when the contextual menu is invoked on an editable child node of a *DITA map* (submaps need to be opened in the **DITA Maps Manager** to access these actions since they are in a read-only state in the parent map):

Note: If multiple nodes are selected, the availability of the actions depends on the nodes that are selected.

Open

Opens the selected resource in the editor.

Edit Properties

Opens the **Edit Properties** dialog box that allows you to configure the properties of a selected node. For more details about this dialog box, see Edit Properties Dialog Box on page 1487.

Fast Create Topics

Opens the **Fast Create Topics** dialog box that allows you to quickly create multiple skeleton topics at once and you can specify their hierarchical structure within the *DITA map*.

Append Child submenu

Container sub-menu for a number of actions that create a map node as a child of the currently selected node:

- **New** - Opens a dialog box that allows you to configure some options for inserting a new topic.
- **Reference** - Inserts a reference to a topic file. You can find more details about this action in the Inserting References topic.
- **Reference to the currently edited file** - Inserts a reference to the currently edited file. You can find more details about this action in the Inserting References topic.
- **Key Reference** - Opens an **Insert Key Definition** dialog box that allows you to insert a key reference.
- **Key Reference with Keyword** - Opens a simplified **Insert Key Definition** dialog box that allows you to define a key and a value inside a *keyword*.
- A set of actions that open the **Insert Reference** dialog box that allow you to insert various reference specializations (such as **Anchor Reference**, **Glossary Reference**, **Map Reference**, **Navigation Reference**, **Topic Group**, **Topic Head**, **Topic Reference**, **Topic Set**, **Topic Set Reference**).

Insert Before submenu

Container sub-menus for a number of actions that create a map node as a sibling of the currently selected node, above the current node in the map:

- **New** - Opens a dialog box that allows you to configure some options for inserting a new topic.
- **Reference** - Inserts a reference to a topic file. You can find more details about this action in the Inserting References topic.
- **Reference to the currently edited file** - Inserts a reference to the currently edited file. You can find more details about this action in the Inserting References topic.
- **Key Reference** - Opens an **Insert Key Definition** dialog box that allows you to insert a key reference.
- **Key Reference with Keyword** - Opens a simplified **Insert Key Definition** dialog box that allows you to define a key and a value inside a *keyword*.

- A set of actions that open the **Insert Reference** dialog box that allow you to insert various reference specializations (such as **Anchor Reference**, **Glossary Reference**, **Map Reference**, **Navigation Reference**, **Topic Group**, **Topic Head**, **Topic Reference**, **Topic Set**, **Topic Set Reference**).

Insert After submenu

Container sub-menus for a number of actions that create a map node as a sibling of the currently selected node, below the current node in the map:

- **New** - Opens a dialog box that allows you to configure some options for inserting a new topic.
- **Reference** - Inserts a reference to a topic file. You can find more details about this action in the Inserting References topic.
- **Reference to the currently edited file** - Inserts a reference to the currently edited file. You can find more details about this action in the Inserting References topic.
- **Key Reference** - Opens an **Insert Key Definition** dialog box that allows you to insert a key reference.
- **Key Reference with Keyword** - Opens a simplified **Insert Key Definition** dialog box that allows you to define a key and a value inside a *keyword*.
- A set of actions that open the **Insert Reference** dialog box that allow you to insert various reference specializations (such as **Anchor Reference**, **Glossary Reference**, **Map Reference**, **Navigation Reference**, **Topic Group**, **Topic Head**, **Topic Reference**, **Topic Set**, **Topic Set Reference**).

Search References

Searches all references to the current topic in the entire *DITA map*.

Refactoring submenu

The following actions are available from this submenu:

Convert Markdown to DITA Topic (Available for Markdown documents)

Opens a dialog box that allows you to configure options for converting the Markdown document into a DITA topic.

Rename resource

Allows you to change the name of a resource linked in the edited *DITA map*.

Move resource

Allows you to change the location on disk of a resource linked in the edited *DITA map*.

Rename Key

Use this operation to rename a key. It also updates all references to it. Note that it does not work on DITA 1.3 key scopes.

Convert Sections to New Topics

Use this operation on topics that contain multiple sections to convert each section to a new topic. Also, the new topics are added in the **DITA Maps Manager** as the first child topics of the original topic. This operation is only available for editable maps and nodes.

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Other XML Refactoring Actions

For your convenience, the last 5 XML Refactoring tool operations that were finished or previewed will also appear in this submenu.

XML Refactoring

Opens the XML Refactoring tool wizard that presents refactoring operations to assist you with managing the structure of your XML documents.

Check Spelling in Files

Allows you to spell check multiple files.

Cut

Deletes the currently selected node and copies it to the clipboard.

Copy

Copies the currently selected node to the clipboard.

Paste

Allows you to paste content from the clipboard into the *DITA map*.

Paste Before

Pastes the content of the clipboard (only if it is a part of the *DITA map*) before the currently selected *DITA map* node.

Paste After

Pastes the content of the clipboard (only if it is a part of the *DITA map*) after the currently selected *DITA map* node.

Delete

Deletes the currently selected node from the *DITA map*.

Remove from Disk

This action can be used to remove the selected resource(s) from disk. Selecting this action will open a confirmation dialog box where you can also choose to remove the descendants by selecting the **Also remove all descendants** option. If you proceed, a search for references is triggered. If multiple references are detected for any of the selected resources, you will have the option to review them since this would lead to broken links.

Organize

Allows you to organize the *DITA map* with the several submenu actions:

- **Move Up** - Moves the selected node up within the *DITA map* tree.
- **Move Down** - Moves the selected node down within the *DITA map* tree.
- **Promote** - Moves the selected node up one level to the level of its parent node.
- **Demote** - Moves the selected node down one level to the level of its child nodes.

Expand All

Allows you to expand the entire *DITA map* structure.

Collapse All

Allows you to collapse the entire *DITA map* structure.

Other Nodes

The following additional actions are available when the contextual menu is invoked from other nodes, such as a *submap* node or a relationship table:

Open Map in Editor (available when invoking on a submap)

Opens the currently selected *DITA map* in the editor.

Open parent DITA map (available when invoking on a read-only topic reference or a submap reference)

Opens the parent *DITA map* of the currently selected reference in the **DITA Maps Manager**.

Edit Attributes (only available for relationship table nodes)

Opens a small in-place editor that allows you to edit the attributes of a selected node. You can find more details about this action in the Attributes View in Author Mode on page 202 topic.

Edit Profiling Attributes (only available for relationship table nodes)

Allows you to change the profiling attributes defined on the selected node.

For more information about the **DITA Maps Manager** view and many of its features, watch our video demonstration:

https://www.youtube.com/embed/ozFZz6YZMCY

Related Information:

DITA Map Validation and Completeness Check on page 1493
DITA Map Author Mode Actions on page 859

Creating a Map

To create a *DITA map*, *subject scheme map*, *bookmap*, or other types of *DITA maps*, follow these steps:

1. Use the **New Document** wizard to start creating your map.

   Tip: If you want the *map* to be a submap, you can create it the same way by right-clicking the place in the current map where you want to add it (in the **DITA Maps Manager**) and selecting **New** from the **Append Child**, **Insert Before**, or **Insert After** submenu.
2. Select one of the **DITA Map** templates from the **Framework templates** folder.
3. Click the **Next** button.
4. Select a parent folder and the file name and click **Finish**.
5. Save the map after opening it in the **DITA Maps Manager** or the Editor.

Related Information:

Customizing Profiling Values with a Subject Scheme Map on page 1602
Managing DITA Maps on page 1476

Selecting a Root Map

Oxygen XML Editor plugin allows you to select a *root map* (a master *DITA map*) that defines a hierarchical structure of submaps and establishes a *key space* that defines the keys used in all the other *DITA maps* and topics in the project. Specifying the correct *root map* helps to prevent validation problems when you work with `keyrefs` and also acts as the foundation for content completion. All the *keys* that are defined in a *root map* are available in the submaps that are contained within the *root map*.

There are several ways to select or change the *root map*:

- The easiest method is to use the **Root map** drop-down menu in the **DITA Maps Manager** toolbar to select the appropriate *root map*.
- If you insert a *key reference* using the **Cross Reference** action from the **Link** drop-down menu (from the toolbar or **Link** submenu of the contextual menu) and keys are not gathered from the expected *DITA map*, you can change the *root map* by using the **Change Root Map** link in the **Choose Key** dialog box that is opened when you click the **Choose Key Reference** button.
- If you insert a *content key reference* or *key reference* using the **Reuse Content** action (from the toolbar, **DITA** menu, or **Reuse** submenu of the contextual menu) and keys are not gathered from the expected *DITA map*,

you can change the *root map* by using the **Change Root Map** link in the **Choose Key** dialog box that is opened when you click the **Choose Key Reference** button.

For more information about the DITA *root map* support, watch our video demonstration:

https://www.youtube.com/embed/e81r3Y1qjnE

Creating DITA Submaps

You can break up a large *DITA map* into more manageable pieces by creating submaps. A submap is simply a *DITA map* that is included by another *DITA map*. There is no separate markup for a submap.

For example, if you are creating a book, you might use one submap for each chapter of the book. If you are reusing a set of topics in multiple publications, you might collect them into a map and reuse the map as a submap in multiple other maps, rather than referencing the topics individually from the new maps.

You add a submap to a map the same way that you would add a new topic or insert an exiting topic into a map, except you choose a map rather than a topic to create or add. When adding a submap to a map make sure that you use a `mapref` element or a `topicref` element with the `format` attribute set to `ditamap`. In most cases, Oxygen XML Editor plugin takes care of this for you.

Adding a Submap to a Map

To add a submap to a map:

1. Right-click the place in the current map where you want to add the new submap.
2. To insert the submap as a child of the selected node, select **Append Child** > **New**. To insert the submap as a sibling to the current node, select **Insert After** > **New** or **Insert Before** > **New**.

   Step Result: This opens a **New** DITA file dialog box that allows you to select the type of document and assists you with naming it.
3. Select the type of map in one of the folders inside the **DITA Map** folder and give it a name (the file type should be `.ditamap`).
4. Click **Create** to insert the submap.

You can also manage and move submaps the same as you would with topics. For more information, see Managing DITA Maps on page 1476.

Creating a Bookmap in DITA

If you want to create a traditional book in DITA, you can use a *bookmap* to organize your topics into a book. A DITA *bookmap* is a specialized type of map, intended for creating output that is structured like a book. A *bookmap* allows you to add book-specific elements such as `frontmatter`, `part`, `chapter`, `appendix`, and `backmatter` to the map. How these book-specific elements are processed for publication is up to the processing script for each media. See the DITA documentation for details.

You can find additional support for creating books in DITA in the DITA for Publishers plugin, which is included with Oxygen XML Editor plugin.

To create a book in DITA using a *bookmap*, follow these steps:

1. Create a new *bookmap* (**File** > **New** > **Framework templates** > **DITA Map** > **map** > **Bookmap**). If you want the *bookmap* to be a submap, you can create it the same way by right-clicking the place in the current map where you want to add it (in the **DITA Maps Manager**) and selecting **New** from the **Append Child**, **Insert Before**, or **Insert After** submenus.
2. Create the structure of your book by adding the appropriate book sections and defining containers for chapters and any appendices. To add sections to a *bookmap*, or children to a section, right-click the *bookmap* or section icon and choose any of the reference actions in the **Append child** menu. The selections offered in the menu will adjust depending on the element they are applied to. Consult the DITA documentation to fully understand the structure of a DITA *bookmap* and where to create each element.
3. Create special elements such as an index and table of contents. The index and table of contents will be generated by the build process, based on the content of the map and the topics it points to.

4. Add topics to your chapters to add content to your book. You may find it easier to manage if you use submaps to create the content of your chapters. This keeps your *bookmap* from becoming long and difficult to manage.

Managing DITA Maps

You may want to manage your *DITA maps* in a variety of ways, including:

- Change the order and nesting of topics in a map.
- Add topics to a map.
- Insert various types of references in a map.
- Find, move, or rename resources in a map.
- Change other properties of the items in a map.
- Use the Edit Properties dialog box to manage attributes, keys, metadata, or add profiling to any section of a map.

This section includes various topics that describe how you can manage *DITA maps* and resources.

For more information about the **DITA Maps Manager** view and many of its features, watch our video demonstration:

https://www.youtube.com/embed/ozFZz6YZMCY

Change the Order of Topics in DITA Maps

You can change the order and nesting of the topics in a map in several ways:

- By dragging and dropping topics within the **DITA Maps Manager**.
- By showing the extended **DITA Maps Manager** toolbar (press the **Settings** icon on the **DITA Maps Manager** toolbar and select the extended toolbar) and then using the node moving buttons ( ) on the toolbar to move topics around in the map.

To understand how to organize topics in a *DITA map* using the **DITA Maps Manager**, you can examine and experiment with the sample map called `flowers.ditamap`, located in the *`[OXYGEN_INSTALL_DIR]`*`/samples/dita` folder.

Adding Topics to a DITA Map

When you are working in DITA, there are several approaches that you can use to create topics and maps. You can start by first creating topics and then assembling your finished topics into one or more documents by creating one or more maps, or you can start by creating a map and then adding new topics to it as you work.

The topics-first approach is generally more appropriate if you intend to do a lot of content reuse, as it encourages you to think of each topic as an independent unit that can be combined with other topics in various ways. The map-first approach will be more familiar to you if you are used to creating books or manuals as a whole. Oxygen XML Editor plugin supports both approaches.

A *DITA map* organizes content hierarchically, so you can add a topic as a child of the map root element or as a child or sibling of any item already in the map. Therefore, the first step to adding a topic to a map is always to choose the place it will be inserted into the map.

Adding Existing Topics to a Map

At the XML-level, a topic is added to a map by adding a reference to the map that points to the topic. There are a variety of reference types that you can use. The default type is the `topicref` element. See the DITA documentation for the full range of reference elements and their uses. Oxygen XML Editor plugin provides several tools for inserting reference elements into a map:

Using the Insert Reference Dialog Box

The **Insert Reference** dialog box allows you to create various reference types and configure the most commonly used attributes. You can open the **Insert Reference** dialog box with any of the following methods:

- Right-click an item in the current map where you want to add the reference, select **Append Child**, **Insert Before**, or **Insert After** and select the type of reference to enter.

- If the topic you want to add is currently open in the editor, you can right-click an item in the current map where you want to add the reference and select **Reference to the currently edited file**.
- Selecting an item in the map and click the **Insert Reference** button from the **DITA Maps Manager** toolbar.
- Select **Insert Reference** from the **DITA Maps** menu.

Dragging and Dropping a File into the DITA Maps Manager

You can add a topic to a *DITA map* by dragging and dropping the file into the **DITA Maps Manager**. You can drag and drop files from any of the following:

- Your OS file system explorer.
- The **Navigator** view.

Adding topics this way will not open the **Insert Reference** dialog box, but you can adjust all the same properties by invoking the contextual menu from the topic and selecting **Edit Properties**.

Adding a New Topic to a Map

To add a new topic to a map, follow these steps:

1. In the **DITA Maps Manager**, right-click the node in the current map where you want to add the new topic.
2. Select one of the following actions:
   - **Append Child** > **New** - Select this action to insert the new topic as a child of the selected node. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert Before** > **New** - Select this action to insert the new topic as a sibling to the current node, before it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert After** > **New** - Select this action to insert the new topic as a sibling to the current node, after it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Duplicate** - Select this action to create a copy of the selected topic and insert it as a sibling. This action opens a dialog box that allows you to choose the file name and location for the newly created copy of the topic. After you have selected the name and path for your new topic, click **OK**.

   Step Result: The new topic is now referenced (as a `topicref`) in the *DITA map* at the location where you inserted it and the new topic is opened in the editor.
3. Save the *DITA map*.

Adding Multiple Skeleton Topics at Once

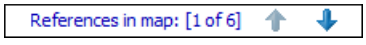
Oxygen XML Editor plugin includes a feature in the **DITA Maps Manager** that allows you to quickly create multiple skeleton topics at once and you can specify their hierarchical structure within the *DITA map*.

To access this feature, right-click a node in the **DITA Maps Manager** where you want the new topics to be inserted and select **Fast Create Topics**. This opens the **Fast Create Topics** dialog box where you can configure the structure for the new topics.

For more information, see Fast Create Multiple DITA Topics on page 1504.

Adding Multiple References to the Same Topic in a Map

Oxygen XML Editor plugin allows you to reuse entire topics by adding multiple references to the same topic in a *DITA map*. Whenever multiple references to the same topic are detected in the context of the current map in the **DITA Maps Manager**, an indicator will appear in the top-right corner of the **Author** mode editor that shows the number of times the topic is referenced in the *DITA map*. It also includes navigation arrows that allow you to jump to the next or previous reference.



Remove Topics from a Map

You can remove topics from a map in a number of ways. Some ways to remove a topic from a map include:

- Highlight the topic and press **Delete**.
- Highlight the topic and click the **Delete** button on the **DITA Maps Manager** extended toolbar.

Related Information:
Fast Create Multiple DITA Topics on page 1504

Moving and Renaming Resources

You can move or rename resources on disk directly from Oxygen XML Editor plugin and you have the option of updating all the references to the moved or renamed resources. For DITA resources (such as topics and maps), you can do this from the **DITA Maps Manager** view. For non-DITA resources (such as folders, images, html files, audio, video, text files, Markdown documents), you can do this from the **Navigator** view.

Moving or Renaming DITA Resources (Topics or Maps)

To move or rename normal DITA resources (such as topics or maps), use one of the following actions available in the **Refactoring** submenu of the contextual menu when invoked on the resource in the **DITA Maps Manager** view:

Refactoring > Move resource

This action allows you to change the location of a resource linked in the edited *DITA map*, using the **Move resource** dialog box. This dialog box contains the following options:

- **Destination** - Specifies the target location of the edited resource.
- **File name** - Allows you to change the name of the edited resource.
- **Update references** - Select this checkbox to update all references of the file in the edited *DITA map* and in the files referenced from the *DITA map*, preserving the *completeness* of the *DITA map*.
- **Preview** - Select this button to display a preview of the changes Oxygen XML Editor plugin is about to make.
- **Move** - Moves the edited resource in the target location on disk.
- **Cancel** - Cancels the **Move resource** operation. No changes are applied.

Refactoring > Rename resource

This action allows you to change the name of a resource linked in the edited *DITA map*, using the **Rename resource** dialog box. This dialog box contains the following options:

- **New name** - Presents the current name and allows you to change it.
- **Update references** - Select this checkbox to update all references of the file in the edited *DITA map* and in the files referenced from the *DITA map*, preserving the *completeness* of the *DITA map*.
- **Preview** - Select this button to display a preview of the changes Oxygen XML Editor plugin is about to make.
- **Rename** - Executes the **Rename resource** operation.
- **Cancel** - Cancels the **Rename resource** operation. No changes are applied.

Note: If a *root DITA map* is not defined, the move and rename actions are executed in the context of the current *DITA map*.

Moving or Renaming Non-DITA Resources and Updating the References to Them

To move or rename non-DITA resources (such as folders, images, html files, audio, video, text files, Markdown documents), you can simply follow the procedures described in Moving/Renaming Resources in the Navigator View on page 380. However, this approach will not give you the option to update the references to the moved or renamed resources.

To perform move or rename operation on non-DITA resources while also updating all the references to them, use the following sets of procedures:

1. Enable *Master Files* support and add your *root DITA map* to the *Master Files* folder by following the procedure found here: How to Enable Master Files Support in DITA on page 1614.

2. Move or rename resources and update the references to them by following the procedure found here: Moving or Renaming Non-DITA Resources and Updating the References to Them on page 1615.

Related Information:

Master Files Support in DITA on page 1614
Finding Resources Not Referenced in DITA Maps on page 1479

Finding Resources Not Referenced in DITA Maps

Over the course of time large projects can accumulate a vast amount of resources from a variety of sources. Especially in organizations with a large number of content authors or complex project structures, organizing the project resources can become a challenge. Over time a variety of actions can cause resources to become orphaned from *DITA maps*. To assist you with organizing project resources, Oxygen XML Editor plugin includes an action, **Find Unreferenced Resources**, that searches for orphaned resources that are not referenced in *DITA maps*.

To perform this search, open the *DITA map* in the **DITA Maps Manager**, invoke the contextual menu on the *DITA map*, and select **Find Unreferenced Resources**. This action opens the **Find Unreferenced Resources** dialog box.

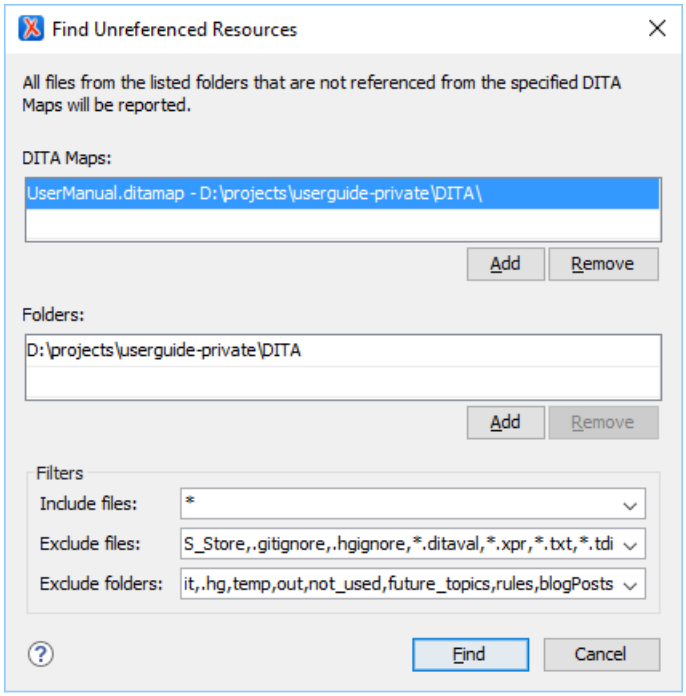


Figure 705: Find Unreferenced Resources Dialog Box

The **Find Unreferenced Resources** dialog box includes the following options:

- **DITA Maps** - Provides a list of *DITA maps* to be included in the search and allows you to **Add** maps to the list or **Remove** them.
- **Folders** - Provides a list of folders to be included in the search and allows you to **Add** or **Remove** specific folders.
- **Filters** - Provides three combo boxes that allow you to filter the search to include or exclude certain files or folders:
  - **Include files** - Allows you to filter specific files to include in the search.
  - **Exclude files** - Allows you to filter specific files to exclude from the search.
  - **Exclude folders** - Allows you filter specific folders to exclude from the search.

    Note: In any of the filter combo boxes you can enter multiple filters by separating them with a comma and you can use the *?* and *** wildcards. Use the drop-down arrow to select a previously used filter pattern.

When you click the **Find** button, if the search operation finds unreferenced resources, they are displayed in the **Results** panel at the bottom of the editor. If you want to delete an unreferenced resource, you can right-click its result and select **Remove from Disk**.

Inserting References in DITA Maps

A *DITA map* may contain various types of references. The targets of the references can be a variety of references, such as chapters, maps, topics, topic sets, or key definitions. You can insert references to such targets with the **Insert Reference** dialog box.

This section explains how to insert and configure references (such as topic references, topic groups, topic headings, and key definitions) in a *DITA map*.

Insert Reference Dialog Box

The **Insert Reference** dialog box allows you to insert and configure references in *DITA maps*. There are numerous types of references that can be inserted into maps. They include references to topics, other maps, glossary terms, and keys. You can also use this dialog box to configure the attributes of a reference, add profiling or metadata, and define keys.

To open the **Insert Reference** dialog box, use one of the following methods:

- Select **Reference**, **Reference to the currently edited file**, or any of the other specific reference actions that are available from the **Append Child**, **Insert Before**, and **Insert After** submenus when invoking the contextual menu in the **DITA Maps Manager**.
  - To insert the reference as a child of the current node, select the reference from the **Append Child** submenu.
  - To insert the reference as a sibling of the current node, below the current node in the map, select the reference from the **Insert After** submenu.
  - To insert the reference as a sibling of the current node, above the current node in the map, select the reference from the **Insert Before** submenu.

  Note: The content of these submenus depends on the node that is selected in the *DITA map* tree when the contextual menu is invoked. For example, if the selected node is a topic reference (`topicref`), its possible child nodes include the following elements: `anchorref`, `chapter`, `keydef`, `mapref`, `topicgroup`, `topichead`, `topicref`, `topicset`, and `topicsetref`.
- Click the **Insert Reference** button on the **DITA Maps Manager** extended toolbar. This action will insert the reference as a sibling of the current node (below the current node in the map).
- Select **Insert Reference** from the **DITA Maps** menu. This action will insert the reference as a sibling of the current node (below the current node in the map).

For the **Reference** or **Reference to the currently edited file** actions, a **Reference type** drop-down list is displayed at the top of the **Insert Reference** dialog box and you can select the type of reference you want to insert. Depending on the place where the reference will be inserted, Oxygen XML Editor plugin will propose only valid reference types . When you change the reference type, the fields in the various tabs of the dialog box are reconfigured depending upon the availability of the associated attributes. For the other reference actions in the **Append Child**, **Insert Before**, and **Insert After** submenus, the reference type is automatically chosen based upon the invoked action and you cannot change it.

The main section of the dialog box includes the following tabs: **Target**, **Keys**, **Attributes**, **Metadata**, and **Profiling**.

Target Tab

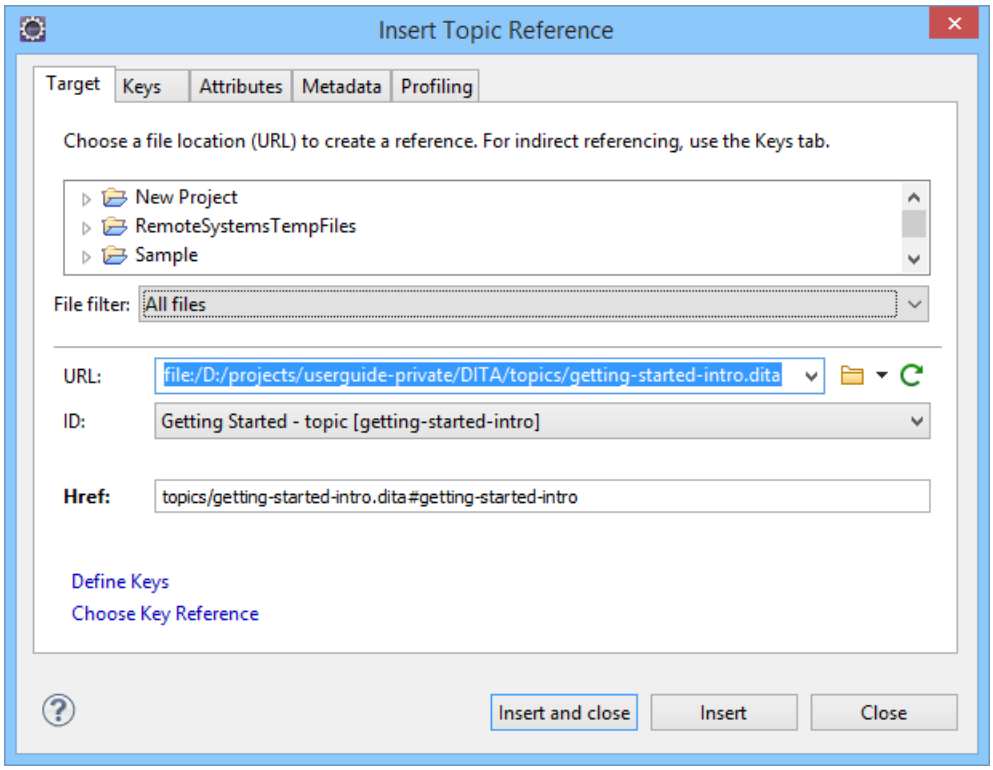


Figure 706: Insert Reference Dialog Box - Target Tab

The **Target** tab of the **Insert Reference** dialog box allows you to specify information about the target reference. It includes the following sections and fields:

Choose a file location section

You can browse for and select the source target file by using the file window in this section. You can use the **File filter** drop-down menu to narrow the list of possible file types that will be displayed.

URL

Displays the path to the target and allows you to select or change it by using the combo box or browsing tools.

ID

The drop-down list displays all of the target elements that are available for the selected target URL.

Href

The selected target automatically modifies this value to point to the corresponding `href` attribute of the target element.

Note: If the **Reference type** is a **Navigation Reference**, the **Href** field is changed to **Mapref**, since a `navref` element requires a `mapref` attribute instead.

Keys Tab

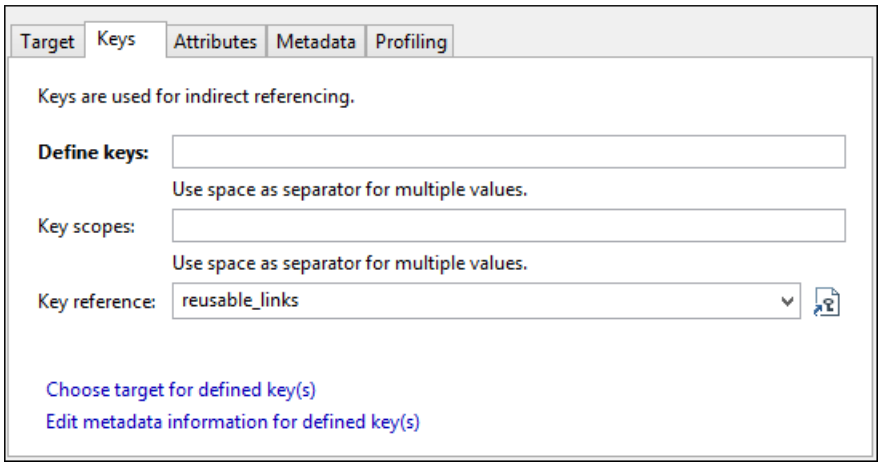


Figure 707: Insert Reference Dialog Box - Keys Tab

The **Keys** tab allows you to use and define keys for indirect referencing. For more information, see Working with Keys on page 1538. This tab includes the following:

Define keys

Use this text field to define the `keys` attribute for the target.

Key scopes [This option is only available if the Built-in DITA-OT 2.x (with DITA 1.3 support) option is selected in the DITA preferences page]

Use this text field to define or edit the value of a *keyscope* attribute. *Key scopes* allow you to specify different sets of key definitions for different map branches.

Key reference

Instead of using the **Target** tab to select a file that contains the target reference, you can reference a key definition by using this text field. Use the **Choose key reference** button to access the list of keys that are already defined in the current *root map*.

Attributes Tab

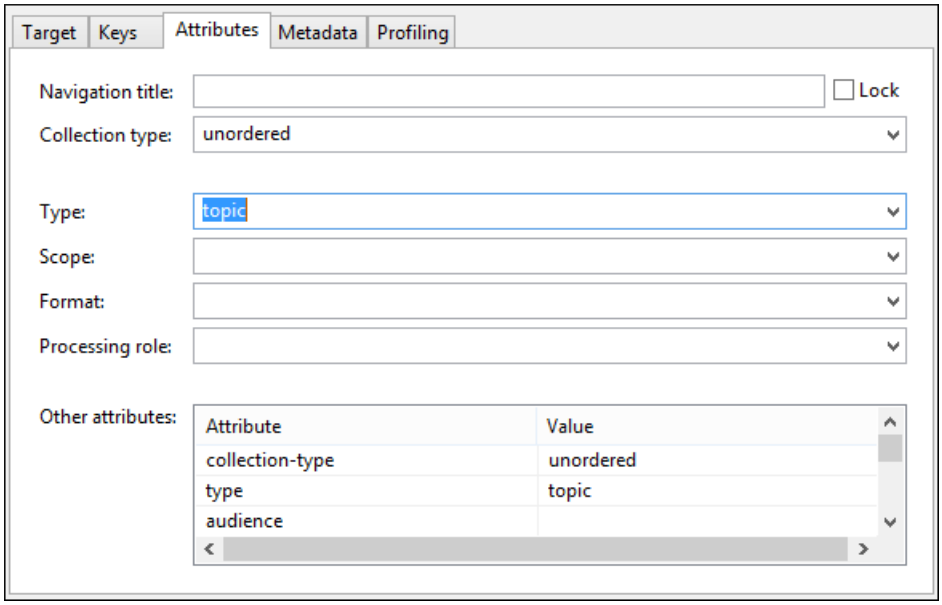


Figure 708: Insert Reference Dialog Box - Attributes Tab

The **Attributes** tab of the **Insert Reference** dialog box allows you to insert and edit attribute values for the target reference. This tab includes the following sections and actions:

Navigation title

This text field allows you to specify a custom navigation title for the target reference. If you want this attribute to always be populated with a detected value (based on the specifications for the target file), select the **Navigation title** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page. You can enforce the use of the specified title by selecting the **Lock** checkbox.

Tip: You can also select the **Prefer navigation title for topicref rendering** option in the **DITA** preferences page to always enforce the use of the `navtitle` value rather than selecting this **Lock** option on individual topics.

Collection type

This drop-down list allows you to select the `collection-type` attribute to create hierarchical linking between topics in a *DITA map* (for example, `unordered`, `sequence`, `choice`, `family`, `-dita-use-conref-target`).

Type

Allows you to select a `type` attribute (such as `topic`, `task`, `concept`, etc.) for the target element. If you want this attribute to always be populated with a detected value (based on the specifications for the target file), select the **Type** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Scope

This property corresponds to the `scope` attribute of the target element. It is populated automatically, based on the selected file type, unless its value for the selected target file is the same as the default attribute value. If you want this attribute to always be populated with a detected value based on the specifications (regardless of the default value), select the **Scope** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Format

This property corresponds to the `format` attribute of the target element. It is populated automatically, based on the selected file type, unless its value for the selected target file is the same as the default attribute value. If you want this attribute to always be populated with a detected value based on the specifications (regardless of the default value), select the **Format** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Processing Role

This drop-down list allows you to set the `processing-role` attribute to one of the allowed values for DITA reference elements (for example, `resource-only`, `normal`, `-dita-use-conref-target`).

Other attributes table

This table contains the attributes that are available for the selected reference. You can use this table to insert or edit the values of any of the listed attributes. Clicking a cell in the **Value** column allows you to use the combo box to enter, edit, or select attribute values.

Metadata Tab

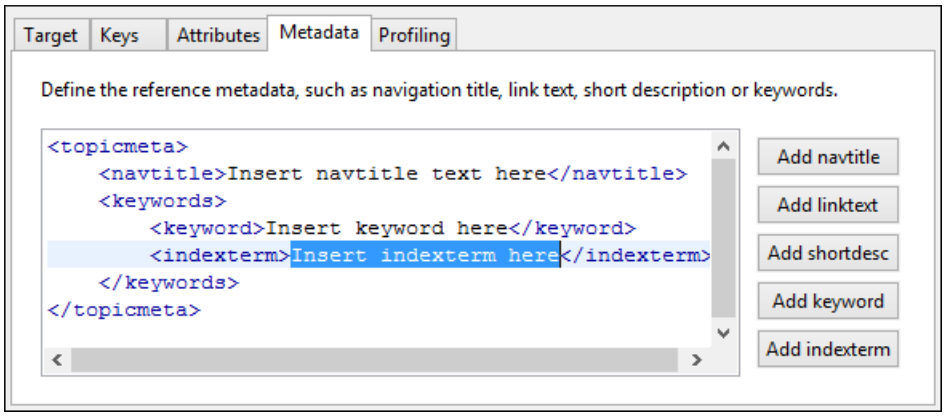


Figure 709: Insert Reference Dialog Box - Metadata Tab

The **Metadata** tab allows you to add metadata elements to the target reference. Use the buttons on the right side of the tab to insert specific metadata elements (you can add the following metadata elements: `navtitle`, `linktext`, `shortdesc`, `keyword`, `indexterm`). The metadata elements are inserted inside a `topicmeta` element. The editing window allows you to easily insert and modify the content of the metadata that will be inserted.

Profiling Tab

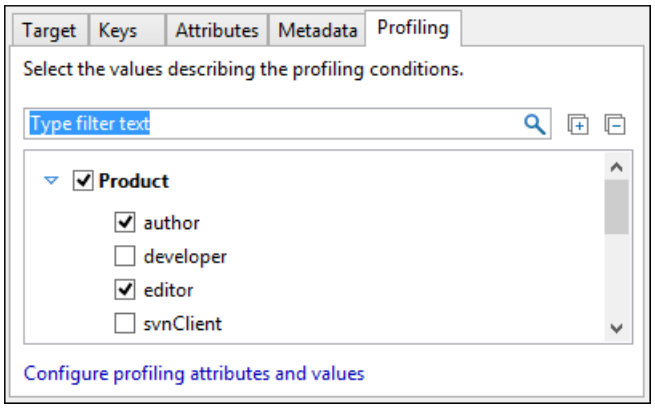


Figure 710: Insert Reference Dialog Box - Profiling Tab

The **Profiling** tab allows you to select or change profiling attributes for the selected reference. This tab displays profiling attributes and their values as determined by the following:

- If your *root map* references a DITA *subject scheme map* that defines values for the profiling attributes, those values are used.
- Otherwise, a basic default set of profiling attributes and values are used.

When you modify a selection of values in this tab, the change will also automatically be reflected in the **Attributes** tab. For more information, see DITA Profiling / Conditional Text on page 1591.

Finalizing Your Insert Reference Configuration

Once you click **Insert** or **Insert and close**, the configured reference is added in the map.

Tip: You can easily insert multiple references by keeping the **Insert Reference** dialog box opened, using the **Insert** button.

Related Information:

DITA Profiling / Conditional Text on page 1591
Working with Keys on page 1538

Inserting Topic Headings

The `topichead` element provides a title-only entry in a navigation map, as an alternative to the fully-linked title provided by the `topicref` element.

You can insert a topic heading by doing the following:

- Select **Topic Head** from the **Append Child**, **Insert Before**, or **Insert After** submenus when invoking the contextual menu in the **DITA Maps Manager** view.
- Open the *DITA map* in the XML editor and select the **Insert Topic Heading** action from the main toolbar (or from the **Insert** submenu of the contextual menu).

Those actions open the **Insert Topic Head** dialog box that allows you to easily insert a `topichead` element. A **Navigation title** (`navtitle` attribute) is required but other attributes can also be specified from this dialog box (such as **Type**, **Scope**, **Format**, etc.)

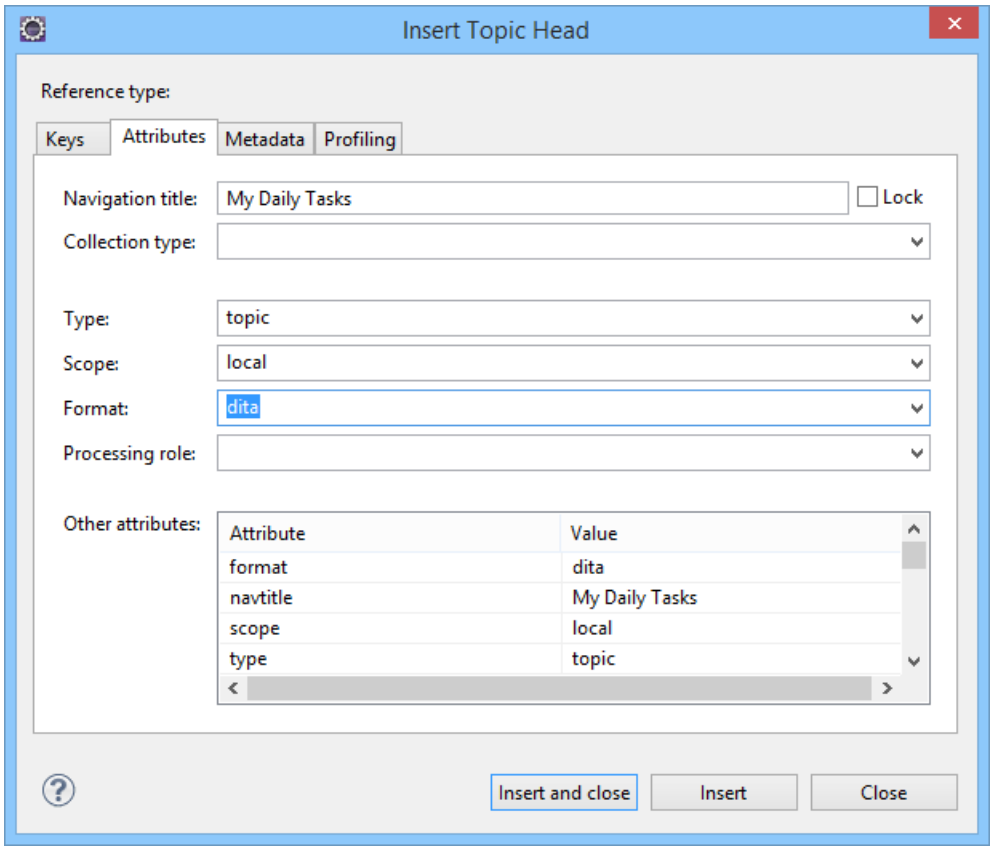


Figure 711: Insert Topic Heading Using the Insert Reference Dialog Box

Related Information:

Insert Reference Dialog Box on page 1480

Inserting Topic Groups

The `topicgroup` element identifies a group of topics (such as a concepts, tasks, or references) or other resources. A `topicgroup` can contain other `topicgroup` elements, allowing you to express navigation or table-of-contents hierarchies, as well as implying relationships between the containing `topicgroup` and its children. You can set the collection-type of a container `topicgroup` to determine how its children are related to each other. Relationships end up expressed as links in the output (with each participant in a relationship having links to the other participants by default).

You can insert a topic group by doing the following:

- Select **Topic Group** from the **Append Child**, **Insert Before**, or **Insert After** submenus when invoking the contextual menu in the **DITA Maps Manager** view.
- Open the *DITA map* in the XML editor and select the **Insert Topic Group** action from the main toolbar (or from the **Insert** submenu of the contextual menu).

Those actions open the **Insert Topic Group** dialog box that allows you to easily insert a `topicgroup` element and various attributes can be specified (such as **Collection type**, **Type**, **Scope**, **Format**, etc.)

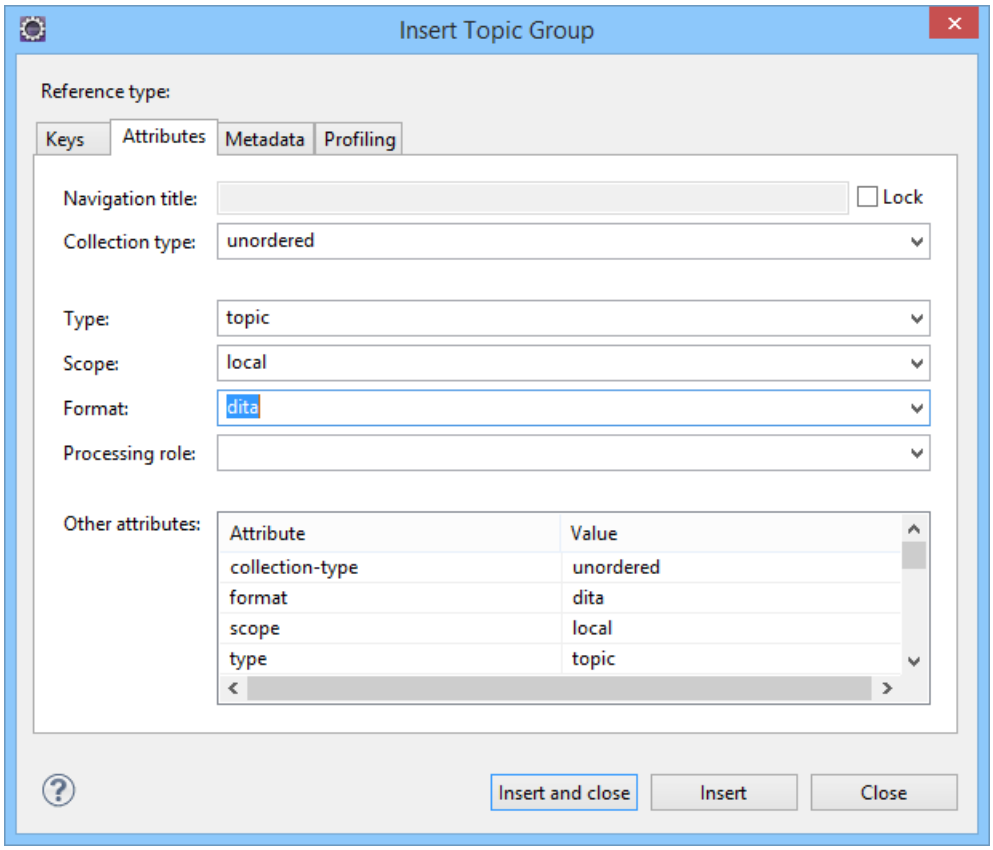


Figure 712: Insert Topic Group Using the Insert Reference Dialog Box

Related Information:

Insert Reference Dialog Box on page 1480

Defining Keys in DITA Maps

DITA uses keys to insert content that may have different values in various circumstances. Keys provide the means for indirect referencing in DITA. This can make it easier to manage and to reuse content. In DITA, keys are defined in maps and can then be reused and referenced throughout the whole structure of the map.

The following example is a *DITA map* that defines various values for the `product` key:

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE map PUBLIC "-//OASIS//DTD DITA Map//EN" "map.dtd">
<map>
  <!-- product name -->
  <keydef keys="product" product="basic">
    <topicmeta>
      <keywords>
        <keyword>Basic Widget</keyword>
      </keywords>
    </topicmeta>
  </keydef>
  <keydef keys="product" product="pro">
    <topicmeta>
      <keywords>
        <keyword>Professional Widget</keyword>
      </keywords>
    </topicmeta>
  </keydef>
  <keydef keys="product" product="enterprise">
    <topicmeta>
      <keywords>
        <keyword>Enterprise Widget</keyword>
      </keywords>
    </topicmeta>
  </keydef>
</map>
```

Note: The profiling of the names is now contained in the map, where it only has to occur once to reuse throughout the whole map structure.

Key Definition with a Keyword

To insert a *key definition with a keyword* in a *DITA map*, follow these steps:

1. Open the *DITA map* in the **DITA Maps Manager**.
2. Invoke the contextual menu and select **Key Definition** from the **Append Child**, **Insert Before**, or **Insert After** submenu (depending on where you want to insert the *key definition* in the *DITA map*). This opens an **Insert Key Definition** dialog box.
3. Go to the **Keys** tab and enter the name of the key in the **Define keys** field.
4. Go to the **Metadata** tab and click **Add keyword**. In the editing window enter the key value inside the `keyword` element.

   Note: You can profile the key by using the **Profiling** tab and other attributes can also be defined in the **Attributes** tab.
5. Once you are done configuring the *key definition*, click **Insert and close**.

Alternatively, there is a simplified method that can be used if you simply want to define a key with a value inside a *keyword*, without configuring any profiling or other attributes. To use the simplified method, follow these steps:

1. Open the *DITA map* in the **DITA Maps Manager**.
2. Invoke the contextual menu and select **Key Definition with Keyword** from the **Append Child**, **Insert Before**, or **Insert After** submenu (depending on where you want to insert the *key definition* in the *DITA map*). This opens a simplified **Insert Key Definition** dialog box.
3. Enter the name of the key in the **Key** field and its value in the **Keyword** field.
4. Click **Insert and close** to finalize the operation.

Key Definition with a Target

To insert a *targeted key definition* (for example, to target a resource such as an image or topic) in a *DITA map*, follow these steps:

1. Open the *DITA map* in the **DITA Maps Manager**.
2. Invoke the contextual menu and select **Key Definition** from the **Append Child**, **Insert Before**, or **Insert After** submenu (depending on where you want to insert the *key definition* in the *DITA map*). This opens an **Insert Key Definition** dialog box.
3. Go to the **Keys** tab and enter the name of the key in the **Define keys** field.
4. Go to the **Target** tab and select a target resource (such as an image or topic).

   Note: You can profile the key by using the **Profiling** tab and other attributes can also be defined in the **Attributes** tab.
5. Once you are done configuring the *targeted key definition*, click **Insert and close**.

Related Information:

Working with Variable Text in DITA on page 1555
Working with Keys on page 1538

Edit Properties Dialog Box

The **DITA Maps Manager** view includes a feature that allows you to view and edit the properties of a selected node. The **Edit properties** action is available on both the **DITA Maps Manager** toolbar and in the contextual menu. This action is also available in the contextual menu when you edit a *DITA map* document in **Author** mode. The action opens the **Edit Properties** dialog box and it includes several tabs with various functions and fields that are initialized with values based upon the node for which the action was invoked.

Note: If you select multiple sibling nodes and invoke the **Edit properties** action, only the **Profiling** tab will be available and your modifications in that tab will be applied to all the selected nodes. If you select multiple nodes that are not on the same hierarchical level, the other tabs will also be available and your modifications will be applied to the parent node (the child nodes will inherit the attributes of the parent node).

You can use the **Edit Properties** dialog box to modify or define attributes, metadata, profiling, or keys in *DITA maps* or topics. You can also use it to modify the title of *root maps*.

At the top of the **Edit Properties** dialog box, the **Reference type** drop-down list displays the type of the selected node and it depends on the node for which the action was invoked.

The main section of the dialog box includes the following tabs: **Target**, **Keys**, **Attributes**, **Metadata**, and **Profiling**. The availability of the tabs and their functions depend on the selected node. For example, if you invoke the action on a *root map*, only the **Attributes**, **Metadata**, and **Profiling** tabs are accessible and the **Title** property can be configured. Also, if you select multiple nodes, only the **Profiling** tab is available.

Target Tab

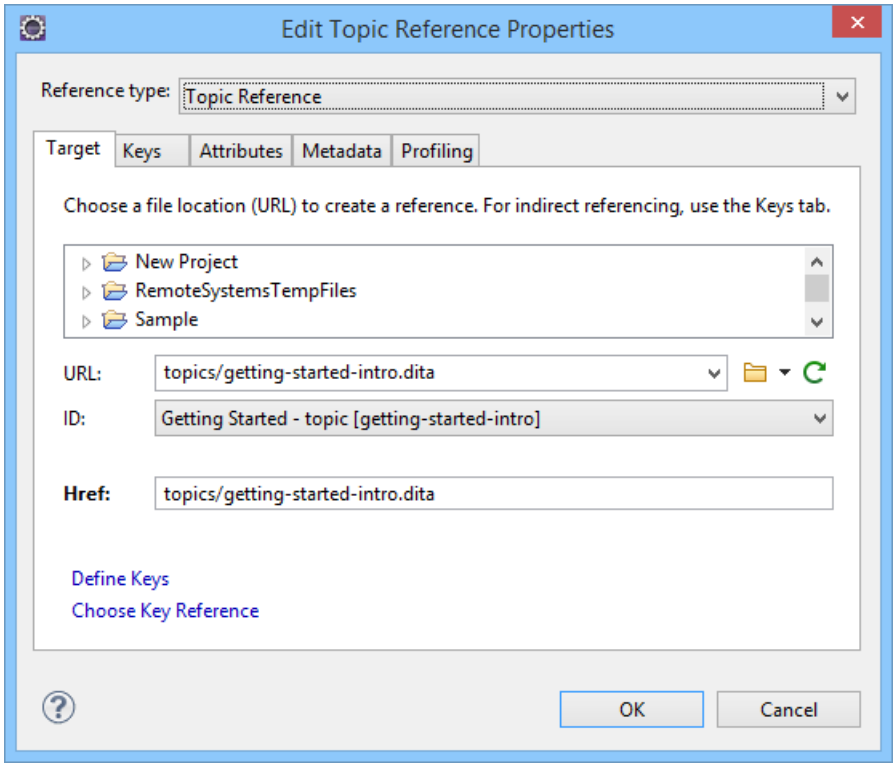


Figure 713: Edit Properties Dialog Box - Target Tab

The **Target** tab of the **Edit Properties** dialog box displays information about the target node on which the action was invoked and allows you to change the target. It includes the following sections and fields:

Choose a file location section

You can browse for and select the source target file by using the file window in this section. You can use the **File filter** drop-down menu to narrow the list of possible file types that will be displayed.

URL

Displays the path to the target and allows you to select or change it by using the combo box or browsing tools.

ID

The drop-down list displays all of the target elements that are available for the selected target URL.

Href

The selected target automatically modifies this value to point to the corresponding `href` attribute of the target element.

Note: If the **Reference type** is a **Navigation Reference**, the **Href** field is changed to **Mapref**, since a `navref` element requires a `mapref` attribute instead.

Keys Tab

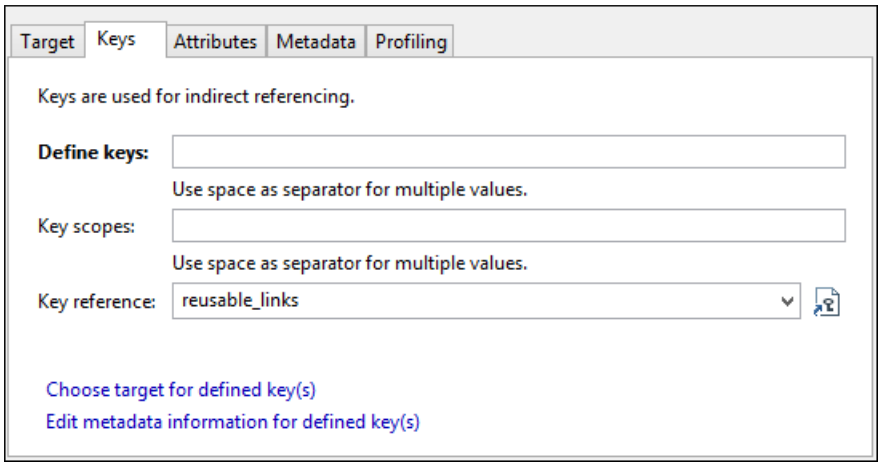


Figure 714: Edit Properties Dialog Box - Keys Tab

The **Keys** tab allows you to use and define keys for indirect referencing. For more information, see Working with Keys on page 1538. This tab includes the following:

Define keys

Use this text field to define the `keys` attribute for the target.

Key scopes [This option is only available if the Built-in DITA-OT 2.x (with DITA 1.3 support) option is selected in the DITA preferences page]

Use this text field to define or edit the value of a *keyscope* attribute. *Key scopes* allow you to specify different sets of key definitions for different map branches.

Key reference

Use this combo box (or the **Choose key reference** button) to select a key that is already defined in the *root map*.

Attributes Tab

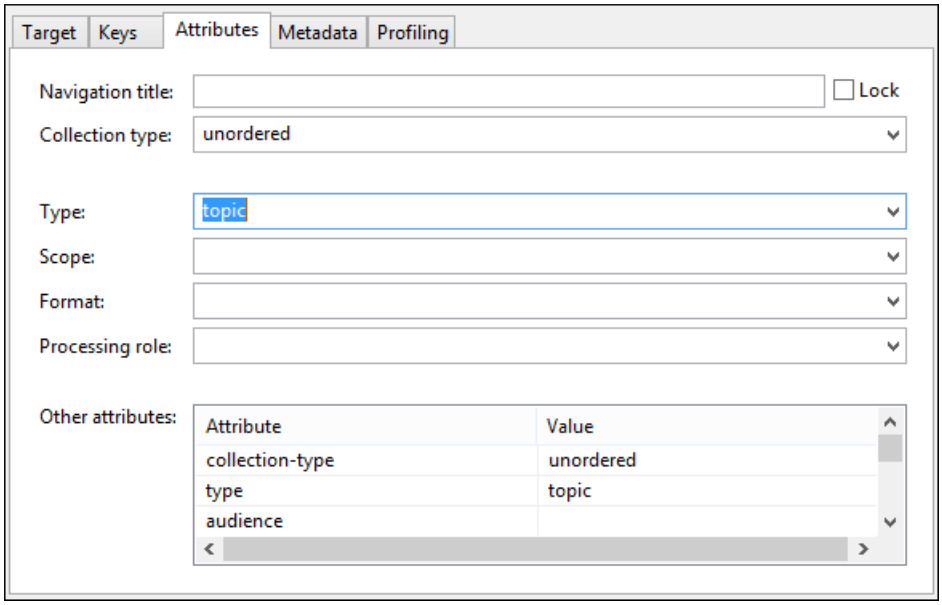


Figure 715: Edit Properties Dialog Box - Attributes Tab

The **Attributes** tab of the **Edit Properties** dialog box allows you to insert and edit attribute values for the target node for which the action was invoked.

If the target is a *root map*, the tab displays the title of the map. You can change it in the **Title** text field and assign it to an **Attribute**, **Element**, or **All**.

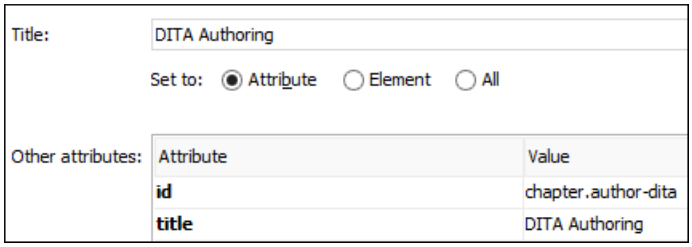


Figure 716: Attributes Tab for a Root Map

For other types of targets, the tab includes the following sections and fields that can be used to edit the attributes of the target:

Navigation title

This text field allows you to specify a custom navigation title for the target reference. If you want this attribute to always be populated with a detected value (based on the specifications for the target file), select the **Navigation title** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page. You can enforce the use of the specified title by selecting the **Lock** checkbox.

Tip: You can also select the **Prefer navigation title for topicref rendering** option in the **DITA** preferences page to always enforce the use of the `navtitle` value rather than selecting this **Lock** option on individual topics.

Collection type

This drop-down list allows you to select the `collection-type` attribute to create hierarchical linking between topics in a *DITA map* (for example, `unordered`, `sequence`, `choice`, `family`, `-dita-use-conref-target`).

Type

Allows you to select a `type` attribute (such as `topic`, `task`, `concept`, etc.) for the target element. If you want this attribute to always be populated with a detected value (based on the specifications for the target file), select the **Type** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Scope

This property corresponds to the `scope` attribute of the target element. It is populated automatically, based on the selected file type, unless its value for the selected target file is the same as the default attribute value. If you want this attribute to always be populated with a detected value based on the specifications (regardless of the default value), select the **Scope** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Format

This property corresponds to the `format` attribute of the target element. It is populated automatically, based on the selected file type, unless its value for the selected target file is the same as the default attribute value. If you want this attribute to always be populated with a detected value based on the specifications (regardless of the default value), select the **Format** checkbox for the **Always fill values for attributes** option in the **DITA** preferences page.

Processing Role

This drop-down list allows you to set the `processing-role` attribute to one of the allowed values for DITA reference elements (for example, `resource-only`, `normal`, `-dita-use-conref-target`).

Other attributes table

This table contains the attributes that are available for the selected reference. You can use this table to insert or edit the values of any of the listed attributes. Clicking a cell in the **Value** column allows you to use the combo box to enter, edit, or select attribute values.

Metadata Tab

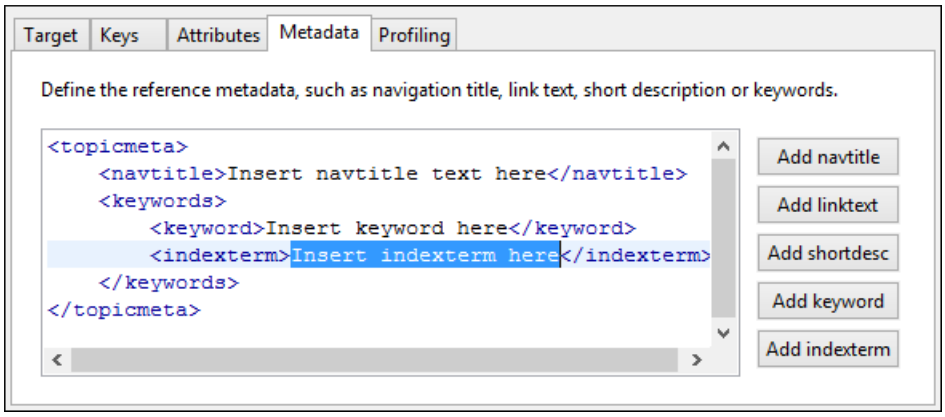


Figure 717: Edit Properties Dialog Box - Metadata Tab

The **Metadata** tab allows you to add metadata elements to the target node. Use the buttons on the right side of the tab to insert specific metadata elements (you can add the following metadata elements: `navtitle`, `linktext`, `shortdesc`, `keyword`, `indexterm`). The metadata elements are inserted inside a `topicmeta` element. The editing window allows you to easily insert and modify the content of the metadata that will be inserted.

Profiling Tab

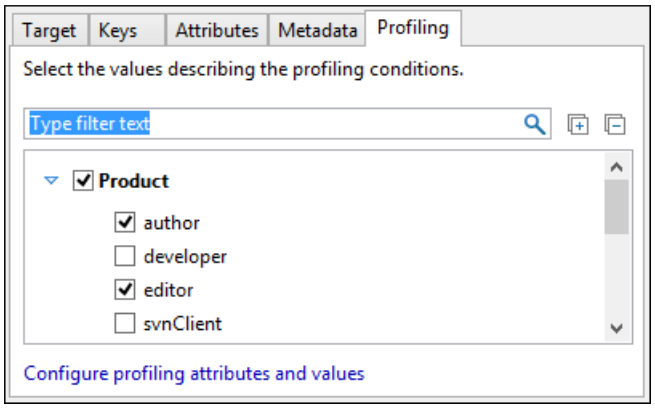


Figure 718: Edit Properties Dialog Box - Profiling Tab

The **Profiling** tab allows you to select or change profiling attributes for the selected target nodes. This tab displays profiling attributes and their values as determined by the following:

- If your *root map* references a DITA *subject scheme map* that defines values for the profiling attributes, those values are used.
- Otherwise, a basic default set of profiling attributes and values are used.

If you have a large list of profiling attributes, you can use the text filter field to search for attributes or values, and you can expand or collapse attributes by using the **Expand All**/**Collapse All** buttons to the right of the text filter or the arrow button to the left of the profiling attribute name..

When you modify a selection of values in this tab, the change will also automatically be reflected in the **Attributes** tab. For more information, see DITA Profiling / Conditional Text on page 1591.

Note: If you invoke the **Edit properties** action on a selection of multiple nodes that have different values for the same profiling attribute, a conflict panel will be displayed in the **Profiling** tab and you can choose between the following actions for resolving it:

- **Keep** - Preserves the current attribute values.
- **Change Now** - Allows you to edit the selection of values in this **Profiling** tab and the changes will be applied to all the selected nodes.

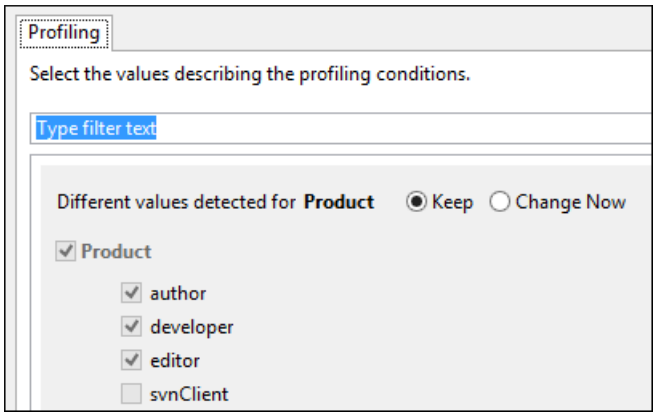


Figure 719: Profiling Conflict Panel

Finalizing Your Modifications

Once you click **OK**, all your changes are applied to the target node.

Related Information:

DITA Profiling / Conditional Text on page 1591
Working with Keys on page 1538

Generating a Table of Contents in DITA

In DITA, the order and hierarchy of the table of contents of a document is based directly on the *DITA map* that defines the document. In most cases, the processor generates a table of contents (TOC) based on the hierarchy of the topics in a DITA map. By default, each `topicref` element in a map represents a node in the TOC.

It is also possible to instruct DITA where the table of contents should occur (or other content lists, such as a list of figures or tables). If you want to instruct the processor to generate a table of contents at a particular location within your DITA map structure, you can use the `toc` element in a *bookmap* (as in the example below). For more information about the `toc` element, see https://docs.oasis-open.org/dita/v1.2/os/spec/langref/toc.html.

Example:

```
<bookmap>
.....
  <frontmatter>
    <booklists>
      <toc href="chapter1.dita"/>
    </booklists>
  </frontmatter>
.....
```

Creating an Index in DITA

In DITA, indexes are created from `indexterm` elements. You can insert index term elements:

- In the header of a topic. In paginated media, such as a printed book or a PDF, this results in an index entry that points to the page in which the topic starts, even if it is not the page in which the indexed term occurs.
- In the `topicref` element in a map that references the topic. This applies those index terms to that topic only when used in that map, allowing you to index topics differently in various publications. In paginated media, index entries point to the page in which the topic starts.
- In the body of a topic. In paginated media, this results in an index entry that points to the page in which the `indexterm` element occurs, even if that is not the page in which the topic starts.

To add index terms to the text of a topic of the topic header, create the elements, as you normally would, in Oxygen XML Editor plugin. To add index terms to a map, open the map in the editor and add the elements, as you normally would, in a topic.

In some media, indexes will be generated automatically when index entries are found in the source. For other media, such as books, you may need to tell DITA where to place the index. For instance, to add an index to a *bookmap*, you need to add an `indexlist` element to the `backmatter` of the book.

1. Open your *bookmap* in the **DITA Maps Manager**.
2. Right-click the *bookmap* and select **Append Child** > **Backmatter**.
   The **Insert Reference** dialog box appears.
3. Click **Insert and Close** to insert the `backmatter` element.
4. Right-click the `backmatter` element and create a `booklists` element using **Append Child** > **Book Lists**.
5. Use the same steps to create an `indexlist` element.

CAUTION: Adding `index` entries and an `indexlist` to your project creates an instruction to the DITA publishing routines to create an index. There is no guarantee that all DITA output types or third-party customizations obey that instruction or create the index the way you want it. Modifying the output may be necessary to get the result you want.

Resolving Topic References Through an XML Catalog

There are situations where you want to resolve URIs with an *XML Catalog*:

- You customized your *DITA map* to reference topics using URIs instead of local paths.
- You have URI content references in your DITA topic files and you want to map them to local files when the map is transformed.

In such situations, you have to add the catalog to Oxygen XML Editor plugin. The **DITA Maps Manager** view will solve the displayed topic refs through the added *XML catalog*, as will as *DITA map* transformations (for PDF output, XHTML output, etc.)

To add an *XML catalog* to the DITA *framework*, follow these steps:

1. Create an *XML catalog* using the guidelines described in Working with XML Catalogs on page 591.
2. Open the **Preferences** dialog box and go to **Document Type Association**.
3. Select the **DITA** document type and use the **Edit**, **Duplicate**, or **Extend** button to open a **Document type configuration** dialog box.
4. Go to the **Catalogs** tab.
5. Click on the **Add** button to open a dialog box that allows you to add your created *XML Catalog* to the list.
6. After adding your catalog, click **OK**. You may need to reopen any currently edited files that use the new catalog or run a manual **Validate** action for the changes to take effect.

   Note: You could also add your created catalog to the list of global catalogs in the **XML Catalog** preferences page.

Chunking DITA Topics

By default, when a *DITA map* is published to an online format, each topic becomes a separate page in the output. In some cases, you may want to combine multiple source topics into one output page. For instance, you may want to combine several types of information into a single page, or you may have chosen to create many small DITA topics for reuse purposes but feel they are too small to be useful to a reader by themselves. This is referred to as *chunking*.

To chunk DITA topics, you set the chunking attribute on the `topicref` that contains the sub-topics in a *DITA map*. There are several values that you can set on the chunking attribute (for example, `by-topic` or `to-content`). See the DITA documentation for full details. To achieve the effects you want in your topics and table of contents, you may also need to set the `toc` and `collection-type` attributes on the sub-topics or container topic to suitable values. See the DITA documentation for details.

You can set the `collection-type` attribute on your topics using the **Edit Properties** action in the **DITA Maps Manager**. To set the `toc` and `chunk` attributes, you must open the map file in the editor and add or edit the attributes directly (double-click the map icon in the **DITA Maps Manager** to open the map in the editor).

DITA Map Validation and Completeness Check

You should validate your *DITA maps* regularly to make sure that your maps and topics are valid, and all of the relationships between them are working. Changing one topic, image, or piece of metadata may create errors in references that rely on them. You may not discover these problems all at once. Validate your map to catch all of

these kinds of problems. The longer you wait between validating your maps, the more difficult it may be to detect and correct any errors you find.

Validating a DITA Map

To validate a DITA, follow these steps:

1. In the **DITA Maps Manager** view, make sure that the tab that holds your *root map* is selected and that the **Root map** selection is set either to the name of your *root map* or to `<current map>`.
2. It is a good practice to refresh your *DITA map* before running the validation process. To do so, select the *DITA map* in the **DITA Maps Manager** view and click **File** > **Refresh (F5)**.
3. Click the **Validate and Check for Completeness** button on the **DITA Maps Manager** toolbar to open the **DITA Map Completeness Check** dialog box.
4. If you are using profiling, check the **Use DITAVAL filters** box and select the appropriate option.
5. Select any other options you want to check.
6. Click **Check** to run the validation process.

Validation Process

The validation process of a *DITA map* includes the following:

- Verifies that the file paths of the topic references are valid. For example, if an `href` attribute points to an invalid file path, it is reported as an error in the message panel at the bottom of the editor.
- Validates each referenced topic and map. Each topic file is opened and validated against the appropriate DITA DTD. If another *DITA map* is referenced in the main one, the referenced *DITA map* is verified recursively, applying the same algorithm as for the main map.
- If errors or warnings are found, they are displayed in a separate message pane at the bottom of the editor and clicking them takes you to the location of the error or warning in the file where it was found.

DITA Map Completeness Check Dialog Box

The **DITA Map Completeness Check** dialog box allows you to configure the *DITA map* validation.

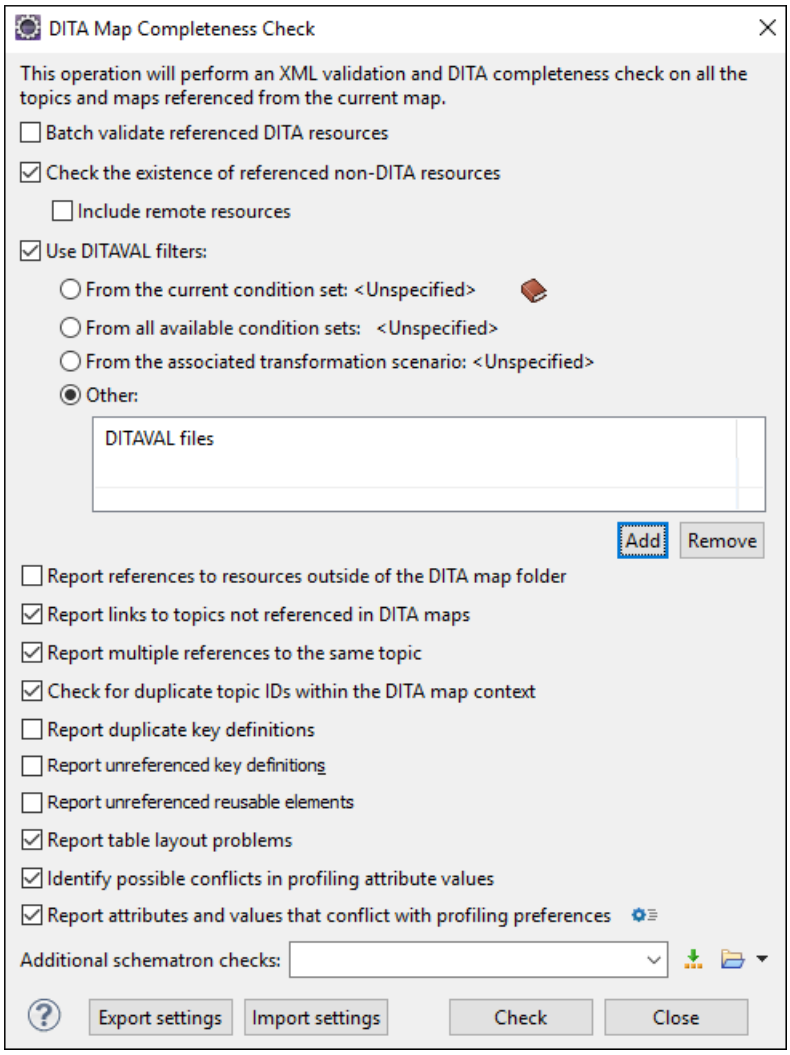


Figure 720: DITA Map Completeness Check Dialog Box

You can configure the validation process with the following options that are available in the **DITA Map Completeness Check** dialog box:

Batch validate referenced DITA resources

This option specifies the level of validation that applies to referenced DITA files:

- If the checkbox is left unchecked (default setting), the DITA files will be validated using the rules defined in the DTD or XML Schema declared in the document.
- If the checkbox is selected, the DITA files will be validated using rules defined in their associated validation scenario.

Check the existence of non-DITA references resources

Extends the validation of referenced resources to non-DITA files.

Include remote resources

Select this option if you want to check that remote referenced binary resources (such as images, movie clips, ZIP archives) exist at the specified location.

Use DITAVAL filters

The content of the map is filtered by applying a profiling condition set before validation. You can choose between the following options:

- **From the current condition set** - The map is filtered using the condition set currently applied in the **DITA Maps Manager** view. Clicking the **Details** icon opens a topic in the Oxygen XML Editor plugin User Guide that explains how to create a profiling condition set.

- **From all available condition sets** - For each available condition set, the map content is filtered using that set before validation.
- **From the associated transformation scenario** - The filtering condition set is specified explicitly as a DITAVAL file in the current transformation scenario associated with the *DITA map*.
- **Other DITAVAL files** - For each DITAVAL file from this list, the map content is filtered using the DITAVAL file before validation. Use the **Add** or **Remove** buttons to configure the list. The **Add** button opens a dialog box that allows you to select a local or remote path to a DITAVAL file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Report references to resources outside of the DITA map folder

If selected, it will report any references to DITA resources that are located outside the *main DITA map* folder.

Report links to topics not referenced in DITA maps

Checks that all the topics referenced by other topics are also linked in the *DITA map*.

Report multiple references to the same topic

If selected, it will report warnings when a topic is referenced multiple times in the *DITA map*, unless a unique `copy-to` attribute is used on the `topicref` element for any topic that is referenced multiple times.

For example, it will **not** report a warning if there is a topic referenced twice, but the second `topicref` has a `copy-to` attribute set:

```
<topicref href="topic.dita"/>
.....
 <topicref href="topic.dita" copy-to="topic2.dita"/>
```

On the other hand, it **will** report a warning if there is a topic referenced twice and none of the reference-type elements has a `copy-to` attribute set or both of them have the `copy-to` attribute set to the same value:

```
<topicref href="topic.dita" copy-to="topic2.dita"/>
......
 <topicref href="topic.dita" copy-to="topic2.dita"/>
```

Check for duplicate topic IDs within the DITA map context

Checks for multiple topics with the same ID in the context of the entire map.

Report duplicate key definitions

Checks the *DITA map* for multiple key references with the same key defined for them. This is helpful because if you have two different resources with the same value for the `keys` attribute, all references will point to the first one encountered and the other will be ignored.

Note: This option takes *key scopes* into account. For example, if you have something like this:

```
<topicref href="t2.dita" keys="k2"/>
    <topicgroup keyscope="ks">
        <topicref href="t2.dita" keys="k2"/>
    </topicgroup>
```

it will not report the "k2" key as a duplicate because it is defined in a *key scope* on the second occurrence.

Report unreferenced key definitions

Checks the entire *DITA map* and reports any key definitions that are not referenced anywhere. Note that if the **Use DITAVAL filters** option is selected, this check will search for unreferenced key definitions based upon your selected filter.

Report unreferenced reusable elements

Checks the entire *DITA map* and reports any detected reusable elements that are not referenced anywhere. It looks for elements that have an *ID* specified in the following types of topic references:

- Any `topicref` that contains a `processing-role` attribute set to **resource-only**.
- Any other referenced topic that contains elements that are reused elsewhere through a `conref` or `conkeyref`.

Report table layout problems

Looks for table layout problems. The types of errors that may be reported include:

- If a row has fewer cells than the number of columns detected.
- For a *CALS* table, if a cell has a vertical span greater than the available rows count.
- For a *CALS* table, if the number of `colspecs` is different than the number of columns detected from the table `cols` attribute.
- For a *CALS* table, if the number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- For a *CALS* table, if the value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- For a *CALS* table, if the `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

Identify possible conflicts in profile attribute values

When the profiling attributes of a topic contain values that are not found in parent topic profiling attributes, the content of the topic is overshadowed when generating profiled output. This option reports these possible conflicts.

Report attributes and values that conflict with profiling preferences

Looks for profiling attributes and values that are not defined in the **Profiling / Conditional Text** preferences page (you can click the **Profiling Preferences** button to open this preferences page). It also checks if profiling attributes defined as *single-value* have multiple values set in the searched topics.

Additional schematron checks

Allows you to select a Schematron file that Oxygen XML Editor plugin will use for the validation of DITA resources. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Export settings

Allows you to export the settings assigned in this dialog box to an XML file that you can share with other users or use on other systems.

Import settings

Allows you to import settings for this dialog box from an XML file that was created by the **Export settings** action.

Check

Use the **Check** button to begin the validation process. The options that you choose in this dialog box are preserved between sessions.

Related Information:

DITA Maps Manager on page 1465

DITA Map Author Mode Actions

A variety of actions are available in the *DITA map framework* that can be added to the **DITA** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DITA Map Toolbar and Menu Actions

When a *DITA map* is opened in **Author** mode, the following default actions are available on the **DITA Map Author Custom Actions** toolbar (by default, they are also available in the **DITA** menu and in various submenus of the contextual menu):

Insert New Topic

Opens a **New** DITA topic dialog box that allows you to create a new topic and inserts a reference to it at the cursor position.

Insert Topic Reference

Opens the **Insert Reference** dialog box that allows you to insert and configure a reference to a topic at the cursor position.

Reuse Content

Opens the **Reuse Content** dialog box that allows you to insert and configure a content reference (`conref`), or a content key reference (`conkeyref`) at the cursor position.

Insert Topic Heading

Opens the **Insert Reference** dialog box that allows you to insert a topic heading at the cursor position.

Insert Topic Group

Opens the **Insert Reference** dialog box that allows you to insert a topic group at the cursor position.

Insert Relationship Table

Opens a dialog box that allows you to configure the relationship table to be inserted. The dialog box allows you to configure the number of rows and columns of the relationship table, if the header will be generated and if the title will be added.

Relationship Table Properties

Allows you to change the properties of rows in relationship tables.

Insert Relationship Row

Inserts a new table row with empty cells. The action is available when the cursor position is inside a table.

Insert Relationship Column

Inserts a new table column with empty cells after the current column. The action is available when the cursor position is inside a table.

Delete Relationship Column

Deletes the table column where the cursor is located.

Delete Relationship Row

Deletes the table row where the cursor is located.

Move Up

Moves the selected node up one position on its same level.

Move Down

Moves the selected node down one position on its same level.

Promote

Moves the selected node up one level to the level of its parent node.

Demote

Moves the selected node down one level to the level of its child nodes.

DITA Menu Actions

The following additional actions can be found in the **DITA** menu when editing a *DITA map* in **Author** mode:

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

DITA Map Contextual Menu Actions

In addition to many of the **DITA Map** toolbar actions and the *general* **Author** mode contextual menu actions, the following *DITA map framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Edit Properties

Opens the **Edit Properties** dialog box that allows you to configure the properties of a selected node. For more details about this dialog box, see Edit Properties Dialog Box on page 1487.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Search References

Finds the references to the `href` or `keys` attribute value of the topic/map reference element at the current cursor position, in all the topics from the current *DITA map* (opened in the **DITA Maps Manager** view). The current topic/map reference element must have an `href` or `keys` attribute defined to complete the search.

Show Key Definition

Available for elements that have a `conkeyref` or `keyref` attribute set (or elements with an ancestor element that has a `conkeyref` or `keyref` attribute). It computes the key name and opens the *DITA map* that contains the definition of the key with the element that defines that key selected.

DITA Map Drag/Drop Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a *DITA map* document that is edited in **Author** mode creates a link to the dragged file (a `topicref` element, `chapter`, `part`, etc.) at the drop location.

Open Topic from DITA Map in Author Mode

When a *DITA map* is opened in **Author** mode, you can click the icon to the left of a topic to open that particular topic in the editor.

Working with DITA Topics

DITA is a structured writing format. Structure can have several meanings, all of which are relevant to DITA. This section includes information about working with DITA topics and the structure.

Information Types

The structure of a piece of content refers to how the words and images are selected and organized to convey information. One approach to structured writing is to divide content into discrete blocks that contain various types of information, and then to combine those blocks to form publications. DITA is based on this approach, and encourages the author to write in discrete blocks called topics. DITA provides three base topic types (concept, task, and reference), a number of extended topic types, and the capability to create new topic types through specialization.

Text Structure

Every piece of text is made up of certain text structures, such as paragraphs, lists, and tables. DITA supports text structures through XML elements such as `p`, `ol`, and `simpletable`. The DITA markup specifies the text structures, but not how they will be published in various types of media. The formatting of text structures is determined by the output transformations and may be customized to meet the needs of various organizations and type of media.

Semantic Structure

Semantic structure is structure that shows the meaning of things. For example:

- A `task` element specifies that a block of content contains the description of a task.
- A `codeblock` element specifies that a block of text consists of programming code.
- A `uicontrol` element specifies that a word is the name of a control in a computer GUI.
- The `platform` profiling attribute specifies that a particular piece of content applies only to certain computing platforms.

Semantic structure is important in a structured writing system because it allows both authors and readers to find content, and it allows processing scripts to process various pieces of content differently, based on their role or meaning. This can be used to do things such as filtering content related to a specific product so that you can produce documentation on many products from the same source.

There can be many forms of semantics captured in a document set. DITA captures some of these in topics and some of them in maps. If you are using a CMS, it may capture additional semantics.

Document Semantics

Documents consist of elements that may be made up of the same basic text structures as the rest of the text, but have a special function within the structure of the document. For instance, both tables of contents and indexes are lists, but they play a special role in the document. Chapters and sections are just sequences of paragraphs and other text structures, yet they are meaningful in the structure of the document. In some cases, such as indexes and tables of contents, these structures can be generated from semantic information embedded in the source. For instance, a table of contents can be built by reading the titles of chapters and sections. DITA provides elements to describe common document semantics.

Subject Matter Semantics

In some cases, the semantics of the content relate directly to the subject matter that the content describes. For instance, DITA supports tags that allow you to mark a piece of text as the name of a window in a software application (`wintitle`), or to mark a piece of text as applying only to a particular product.

Audience Semantics

In some cases, the semantics of the content relate to the audience that it is addressed to. For instance, a topic might be addressed to a particular role, or to a person with a particular level of experience. DITA provides an `audience` element to capture audience metadata.

Creating Topic Structures

Oxygen XML Editor plugin provides a number of tools to help you create topic structures:

- *Content Completion Assistant* - Shows you which elements can be created at the current position.
- **Model** view - Shows you the complete structure supported by the current element.
- **Outline** view - Shows you the current structure of your document.
- **DITA** toolbar - Helps you to easily insert many common structures.

Related Information:

Getting Started with DITA on page 8
DITA Topics Document Type (Framework) on page 848

Creating a New DITA Topic

The basic building block for DITA information is the DITA topic. DITA provides a variety of specialized topic types, the most common of which are:

- *Topic* - The base topic type from which all other topic types are specialized. Typically, it is used when a more specialized topic type is inappropriate.
- *Task* - For procedural information such as how to use a dialog box.
- *Concept* - For general, conceptual information such as a description of a product or feature.
- *Reference* - For reference information.

Oxygen XML Editor plugin also supports numerous other specialized topic types that you will find templates for in the various folder in the **New** DITA file dialog box. They include DITA 1.3 specializations, Lightweight DITA templates, MathML composites, Markdown documents, and other DITA specialized topic and *DITA map* types such as *Glossentry*, *Troubleshooting*, *Bookmap*, and *Subject Scheme Map*.

To create a new DITA topic and add a reference to it in your *DITA map*, follow these steps:

1. In the **DITA Maps Manager**, right-click the node in the current map where you want to add the new topic.
2. Select one of the following actions:
   - **Append Child** > **New** - Select this action to insert the new topic as a child of the selected node. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert Before** > **New** - Select this action to insert the new topic as a sibling to the current node, before it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Insert After** > **New** - Select this action to insert the new topic as a sibling to the current node, after it. This action opens a **New** file dialog box that allows you to select the type of document and assists you with naming it. After you have configured your new topic, click **Create**.
   - **Duplicate** - Select this action to create a copy of the selected topic and insert it as a sibling. This action opens a dialog box that allows you to choose the file name and location for the newly created copy of the topic. After you have selected the name and path for your new topic, click **OK**.

   Step Result: The new topic is now referenced (as a `topicref`) in the *DITA map* at the location where you inserted it and the new topic is opened in the editor.
3. Save the *DITA map*.

New DITA File Dialog Box

The **New** DITA file dialog box allows you to create a new DITA topic using various types of DITA file templates and provides some options that help you to configure the new topic.

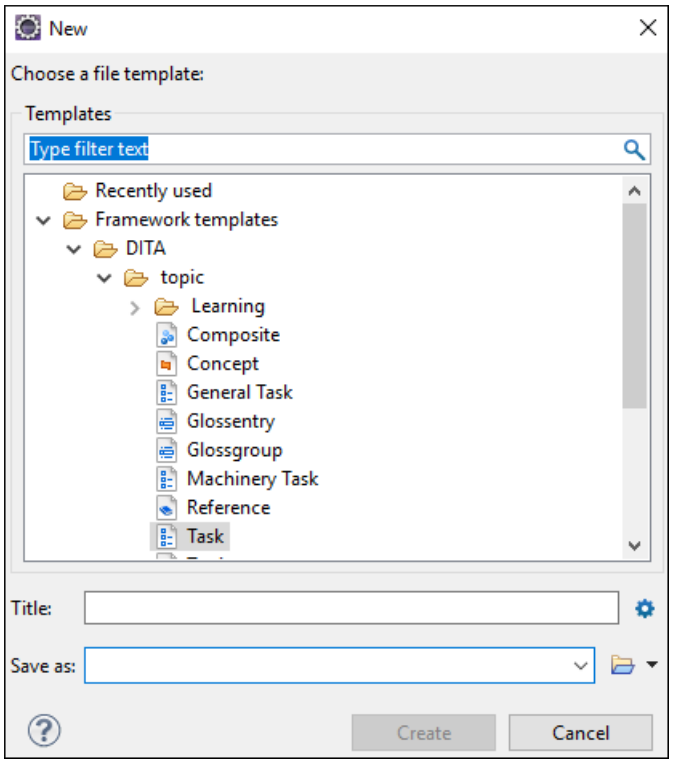


Figure 721: New DITA File Dialog Box

Note: The templates that appear in this dialog box include all templates that have an associated `.properties` file and the `type` property is set to **dita**, as well as templates that do not have an associated properties file or the `type` property is not defined. It will also include custom templates that you create using the procedures presented in Creating New Document Templates on page 366.

The **New** DITA file dialog box includes the following features and options:

Choose a file template

Use the template preview pane to select the appropriate type of DITA file you want to create. Once you select a template, the other options will appear below the preview pane.

Tip: You can use the text filter field at the top of the dialog box to search for a specific template.

Title

Depending on the selected file template, the value of the **Title** field is set in:

- the `title` element of a DITA topic file. The `title` element needs to be the first child of the root element.
- the `glossterm` element of a *Glossentry* file.

New Topics Preferences

Pressing this button opens the DITA New Topics preference page

Save as

Use this option to specify a file name and path for the new file. You can specify the path by using the text field, the history drop-down, or the browsing tools in the **Browse** drop-down menu.

Create

When you click this button, a reference (`topicref`) to the new topic is added to the current *DITA map* and the new topic is opened in the editor.

Related Information:

Getting Started with DITA on page 8
Adding Topics to a DITA Map on page 1476
Working with Markdown Documents in DITA on page 815
Fast Create Multiple DITA Topics on page 1504

Fast Create Multiple DITA Topics

The **DITA Maps Manager** includes a feature that allows you to quickly create multiple skeleton topics at once and you can specify their hierarchical structure within the *DITA map*. A common use-case for using this feature is when you need to insert a new chapter or section that will include multiple topics and you have the structure and titles planned out in advance.

Note: The **Fast Create Topics** feature works for the following types of local and remote resource protocols: *file*, *http*, *https*, *ftp*, *ftps*.

To access this feature, right-click a node in the **DITA Maps Manager** where you want the new topics to be inserted and select **Fast Create Topics**. This opens the **Fast Create Topics** dialog box where you can configure the structure for the new topics.

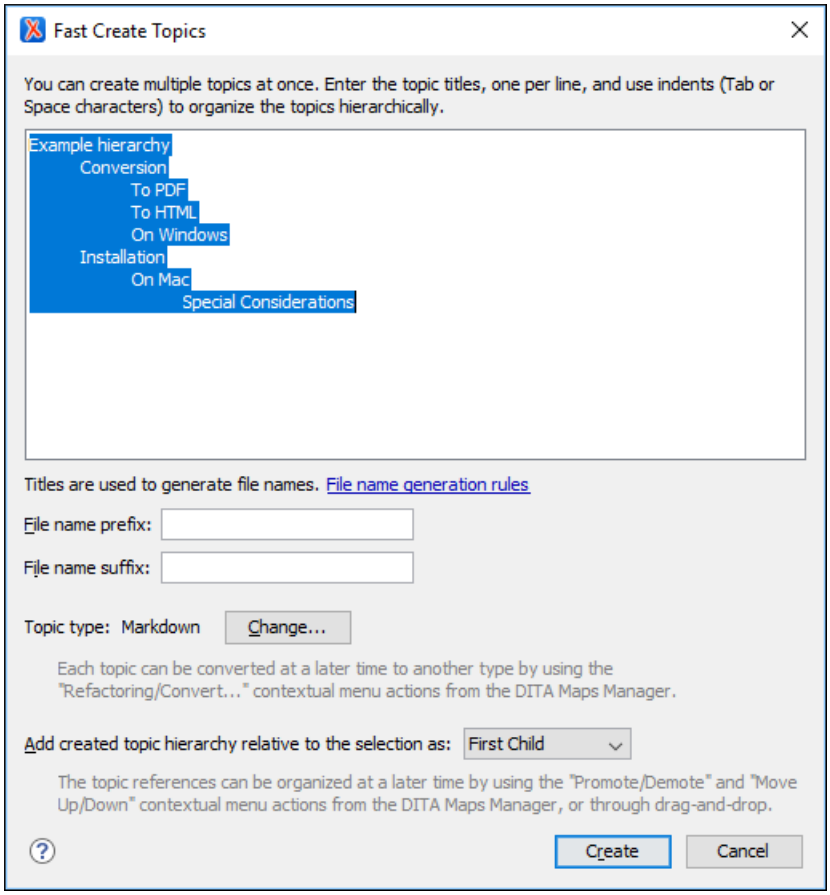


Figure 722: Fast Create Topics Dialog Box

The **Fast Create Topics** dialog box includes the following features and options:

Hierarchy Text Pane

Use this text area to enter the titles for your new topics, one per line, and specify the hierarchy by using indents (**Tab** or **Space**). Topic references will be created in the *DITA map* according to the hierarchy you enter in this section.

File name generation rules

The titles that you enter in the text pane will not only be used for the topic titles but also to generate their file names and you can click the **File name generation rules** link to configure the rules for how those file names will be generated.

Tip: If you have added a file name prefix or suffix to the properties file for DITA document templates, the generated file name will include that prefix or suffix.

File name prefix

Use this option to add a specified prefix to the file name. If you have added a file name prefix to the properties file for DITA document templates, the prefix you enter here will override the one from the properties file.

File name suffix

Use this option to add a specified suffix to the end of the file name. If you have added a file name suffix to the properties file for DITA document templates, the suffix you enter here will override the one from the properties file.

Topic type

All of the topics that will be created will have the same DITA topic type, which is detected from the most recently created topic. You can click the **Change** button to select a different type from a list of possible DITA templates.

Tip: You can convert any of these new files to a different DITA topic type at a later time by using another feature that allows you to easily convert DITA documents to other types.

Add created topic hierarchy relative to the selection as

By default, the hierarchy of topics will be added to the *DITA map* as the **First Child** of the node where the action was invoked. You can change this to **Last Child**, **Preceding Sibling**, or **Following Sibling** if the selected node allows topics to be inserted as such.

Create

When you click **Create**, the specified hierarchy is added as topic references in the *DITA map*. The new documents are created as bare skeleton topics with only the topic title and possibly the root ID populated.

Tip: You can easily change the order of the topics in the *DITA map* at a later time,

Related Information:

Adding Topics to a DITA Map on page 1476
Converting DITA Topics to Another Type on page 1507

Editing DITA Topics

Oxygen XML Editor plugin provides a number of features to help you edit DITA topics. A DITA topic is an XML document, thus all the editing features that Oxygen XML Editor plugin provides for editing XML documents also apply to DITA topics. Oxygen XML Editor plugin also provides extensive additional support specifically for DITA.

Opening a DITA Topic

There are several ways to open a DITA topic in the XML editor. Use any of the following methods to open a topic:

- Double-click the topic in the **DITA Maps Manager** (or right-click the topic and select **Open**).
- Double-click the file in the **Navigator** view (or right-click the file and select **Open**).
- If you have a *DITA map* opened in the XML editor, you can click the icon to the left of the topic.
- Drag a DITA file from your system browser and drop it in the XML editor.

Visual Editing in Author Mode

DITA is an XML format, although you do not have to write raw XML to create and edit DITA topics. Oxygen XML Editor plugin provides a graphical view of your topics in **Author** mode. Your topics will likely open in **Author** mode by default, so this is the first view you will see when you open or edit a DITA topic. If your topic does not open in **Author** mode, just click **Author** at the bottom left of the editor window to switch to this mode.

Author mode presents a graphical view of the document you are editing, similar to the view you would see in a word processor. However, there are some differences, including:

- **Author** mode is not a **WYSIWYG** view. It does not show you exactly what your content will look like when printed or displayed on-screen. The appearance of your output is determined by the DITA publishing process, and your organization may have modified that process to change how the output is displayed. Oxygen XML Editor plugin has no way of determining what your final output will look like or where line breaks or page breaks will fall. Treat **Author** mode as a friendly visual editing environment, not a faithful preview of your output.

- Your document is still an XML document. **Author** mode creates a visual representation of your document by applying a CSS stylesheet to the XML. You can see the XML at any time by switching to **Text** mode. You, or someone in your organization, can change how the **Author** view looks by changing the CSS stylesheet or providing an alternate stylesheet.
- Your aim in editing a DITA document is not to make it look right, but to create a complete and correct DITA XML document. **Author** mode keeps you informed of the correctness of your content by highlighting XML errors in the text and showing you the current status in a box at the top right of the editor window. Green means that your document is valid, yellow means valid with warnings, and red means invalid. Warnings and errors are displayed when you place the cursor on the error location.
- Your XML elements may have attributes set on them. Conventionally, attributes are used to contain metadata that is not displayed to the reader. By default, attributes are not displayed in the **Author** view (though there are some exceptions) and cannot be edited directly in the **Author** view (though in some cases the CSS that drives the display may use form controls to let you edit attributes directly). To edit the attributes of an element, place your cursor on the element and press **Alt+Enter** to bring up the attribute editor. Alternatively, you can use the **Attributes** view to edit attributes.

Tip: You can select **Hints** from the **Styles** drop-down menu (available on the **Author Styles** toolbar) to display tooltips throughout the DITA document that offers additional information to help you with the DITA structure. For more information, see the Selecting and Combining Multiple CSS Styles section.

Content Completion Assistance

Since it is a structured format, DITA only allows certain elements in certain places. The set of elements allowed differ from one DITA topic type to another (this is what makes one topic type different from another). To help you figure out which elements you can add in any given place and help you understand what they mean, Oxygen XML Editor plugin has a number of *Content Completion Assistant* features.

- **The Enter key:** In **Author** mode, the **Enter** key does not create line breaks, it brings up the *Content Completion Assistant* to help you enter a new element. In XML, you do not use line breaks to separate paragraphs. You create paragraphs by creating paragraph elements (element p in DITA) and tools insert the line breaks in the output and on-screen.

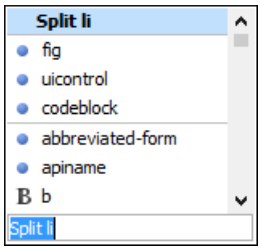


Figure 723: Content Completion Assistant

The *Content Completion Assistant* not only suggests new elements you can add. If you press **Enter** at the end of a *block element* (such as a paragraph) it suggests creating a new element of the same type. If you press **Enter** in the middle of a *block element*, it suggests splitting that element into two elements.

A useful consequence of this behavior is that you can create a new paragraph simply by hitting **Enter** twice (just as you might in a text editor).

As you highlight an element name, a basic description of the element is displayed. Select the desired element and press **Enter** to create it.

To wrap an element around an existing element or piece of text, simply select it and press **Enter** and use the *Content Completion Assistant* to choose the wrapper element.

- **The Model view:** You can see the entire model of the current element by opening the **Model** view (**Window** > **Show View** > **Model**, if the view is not already open). The **Model** view shows you what type of content the current element can contain, all the child elements it can contain, all its permitted attributes, and their types.

Tip: You can also select **Inline actions** from the **Styles** drop-down menu (available on the **Author Styles** toolbar) to display possible elements that are allowed to be inserted at various locations throughout the DITA document. For more information, see the Selecting and Combining Multiple CSS Styles section.

DITA Editing Actions

A variety of actions are available in the DITA *framework* to specifically assist you with editing DITA documents. These various actions are available in the contextual menu, the **DITA** menu, the **DITA (Author Custom Actions)** toolbar, or the *Content Completion Assistant*.

The **DITA** toolbar contains buttons for inserting a number of common DITA elements (elements that are found in most DITA topic types).

If the **DITA** toolbar is not displayed, right-click anywhere on the toolbar area, select **Configure Toolbars**, and select it from the displayed dialog box.

Note: The **DITA** toolbar contains a list of the most common elements and actions for DITA, such as inserting an image, creating a link, inserting a content reference, or creating a table. It does not contain a button for inserting every possible DITA element. For a complete list of elements that you can insert at the current location in your document, press **Enter** to open the *Content Completion Assistant*.

Whenever the current document in the editor is a DITA document, the **DITA** menu is displayed in the menu bar. It contains a large number of actions for inserting elements, creating content references and keys, editing DITA documents, and controlling the display. These actions are specific to DITA and supplement the general editing commands available for all document types. Many of these actions are also conveniently available in the contextual menu. In addition to the DITA *framework*-specific actions, the contextual menu also includes various *general* **Author** mode contextual menu actions.

Related Information:

Getting Started with DITA on page 8
DITA Author Mode Actions on page 850

Converting DITA Topics to Another Type

Oxygen XML Editor plugin includes a features that allows you to convert an existing DITA document to a different topic type. For example, if you want to convert a DITA Task to a DITA Topic, or vice versa. There are several ways to access these refactoring actions and you can choose a scope for the operation and some filtering options.

DITA Conversion Refactoring Operations for *DITA*

The following conversion operations are available:

Convert to Concept

Use this operation to convert a DITA topic (of any type) to a DITA Concept topic type (for example, Topic to Concept).

Convert to General Task

Use this operation to convert a DITA topic (of any type) to a DITA General Task topic type (for example, Task to General Task). A DITA *General Task* is a less restrictive alternative to the *Strict Task* information type.

Convert to Reference

Use this operation to convert a DITA topic (of any type) to a DITA Reference topic type (for example, Topic to Reference).

Convert to Task

Use this operation to convert a DITA topic (of any type) to a DITA Task topic type (for example, Topic to Task).

Convert to Topic

Use this operation to convert a DITA topic (of any type) to a DITA Topic (for example, Task to Topic).

Convert to Troubleshooting

Use this operation to convert a DITA topic (of any type) to a DITA Troubleshooting topic type (for example, Topic to Troubleshooting).

Methods for Accessing the DITA Conversion Refactoring Operations

To access the conversion operations, use one of the following methods:

Single Document Method

With the document opened in the editor, right-click anywhere in the main editing pane (or right-click the topic reference in the **DITA Maps Manager**), go to the **Refactoring** submenu, and choose whichever operation is appropriate for your needs.

Multiple Documents At Once Method

Select **XML Refactoring** from the **XML Tools** menu (or from the **Refactoring** submenu when you right-click one or more documents in the **Navigator** viewor the **DITA Maps Manager** view). Then select whichever operation is appropriate for your needs.

XML Refactoring Wizard Dialog Box

When you select any of the operations, Oxygen XML Editor plugin proceeds to the **XML Refactoring Wizard**. If you used the **Multiple Documents At Once Method**, the wizard page allows you to choose a scope for the operation and some filtering options:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, **Current DITA map hierarchy**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

If you used the **Single Document Method**, the scope will be the current file so the scope and filtering options are not displayed.

You can then use one of the following buttons to proceed with the operation:

Preview

You can use the **Preview** button to open a comparison panel where you can review all the changes that will be made by the refactoring operation before applying the changes.

Warning: It is always recommended to use the **Preview** button to make sure the operation is not going to do something unexpected and after you click the **Finish** button, any **Undo** action will only revert changes on the current document.

Finish

When you use the **Finish** button, behind the scenes Oxygen XML Editor plugin maps the structure of the previous DITA document type to a structure that fits the new type. In some cases, especially when the previous structure was very complex, the conversion might result in an invalid structure and some manual adjustments might be required.

Converting To and From DITA Specialization Document Types

If you use your own DITA specialization document type, you can modify the built-in, predefined conversion operations to work with your specialization by customizing the values of particular variables.

To use the conversion operations with your DITA specialization, follow these steps:

1. Locate the conversion stylesheets in the following directory: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/refactoring/dita-files-conversion-systlesheets`.
2. Each conversion operation has a stylesheet with the word **entrypoint** at the end of its name. Edit the appropriate `*-entrypoint.xsl` file (for example, to modify the **Convert to Task** operation, edit the `convert-resource-to-task-entrypoint.xsl` file).
3. Depending on whether you use a DTD, XML Schema, or Relax NG-based specialization, you can:
   a. Modify the values of the declared **root-element**, **public-literal-target**, and **system-literal-target** variables to match your specialization's DTD information.
   b. Modify the value of the declared **schema-location** variable to match the location of your specialization's XML schema.
   c. Modify the value of the declared **xml-model-location** variable to match your Relax NG specialization.

4. Save your changes to the stylesheet.
5. If you want to change the name of the operation that will be displayed in Oxygen XML Editor plugin, follow these substeps:
   a. Locate the resource XML file for the same conversion operation in the following directory: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/refactoring/` (for example, for the **Convert to Task** operation, it is `convertResource2Task.xml`).
   b. Edit that XML file and change the **name** attribute to match whatever you want to be displayed for that operation (for example, `name="Convert to My DocType"`).
   c. Save your changes to the XML file.
6. Restart Oxygen XML Editor plugin

Result: You should now see your changes when accessing the conversion operations.

Tip: You can also create your own customized refactoring operations. For more information, see Custom Refactoring Operations on page 603.

Related Information:

Editing DITA Topics on page 1505
Refactoring XML Documents on page 596

Adding Images in DITA Topics

There are several ways to add images to a DITA topic, depending on if you want to create a figure element (with a title and caption), just insert an image inline, or if you want to use multiple versions of a graphic depending on the situation. For instance, you might want to use a specific image for each different product version or output media.

Adding an Image Inline with the Insert Image Dialog Box

Use the following procedure to add an image inline:

1. Place the cursor in the position you want the graphic to be inserted.
2. Select the **Insert Image** action. The **Insert Image** dialog box appears.

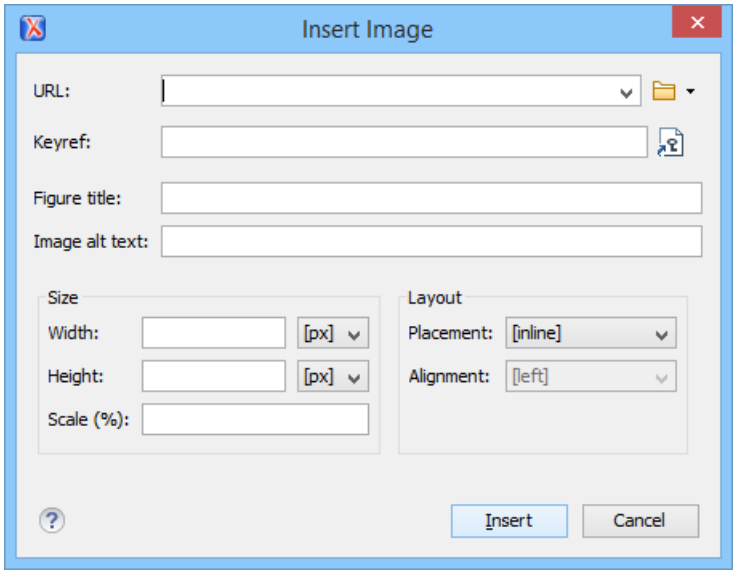


Figure 724: Insert Image Dialog Box

3. Configure the options in this dialog box and click **Insert**.

   The **Insert Image** dialog box includes the following options for inserting images into a DITA document:

   URL

   Use this option to specify a URL for the image. It will insert the URL as the value of an `href` attribute inside an `image` element. You can type the URL of the image you want to insert or use browsing tools in the **Browse** drop-down menu.

Keyref

You can use the **Choose Key Reference** button to open the **Choose Key** dialog box that presents the list of keys available in the selected *root map*. Use this dialog box to insert the selected key as the value of a `keyref` attribute inside an `image` element. All keys that are presented in the dialog box are gathered from the *root map* of the current *DITA map*. Elements that have the `keyref` attribute set are displayed as links.

Note: If your defined keys are not listed in this dialog box, it is most likely trying to gather keys from the wrong *root map*. You can change the *root map* by using the **Change Root Map** link.

Figure title

Use this text box to insert a `title` and `image` element inside a `fig` element.

Alternate text

Use this text box to insert an `alt` element inside the `image` element.

Size

Use this section to configure the **Width** and **Height** of the image, or **Scale** the image. Specifying a value in these options inserts a `width`, `height`, and `scale` attribute, respectively.

Layout

Use the options in this section to insert `placement` and `align` attributes into the `image` element.

Adding an Image Inline with Drag/Drop (or Copy/Paste) Actions

You can drag images from your system explorer or the **Navigator** view and drop them into a DITA document (or copy and paste). This will insert the path of the image file as the value of the `href` attribute in a DITA `image` element:

```
<image href="../images/image_file.png"/>
```

Tip: To replace an image, just drag and drop a new image over the existing one. Oxygen XML Editor plugin will automatically update the reference to the new image.

Adding an Image in a Figure Element

To add an image in a figure:

1. Add a `fig` element to your document at the appropriate place.
2. Add a `title` and/or `desc` element to the `fig` element, according to your needs.
3. Add an *image* element to the `fig` element.

Note: The `fig` element has a number of other child elements that may be appropriate to your content. See the DITA documentation for complete information about the `fig` element.

Note: The order in which the `image`, `title`, and `desc` content are presented in output is determined by the output transformation. If you want to change how they are output, you may have to modify the output transformation, rather than your source content.

Related Information:

Image Maps in DITA on page 530
Floating Images in DITA Topics for PDF or XHTML Output on page 1510

Floating Images in DITA Topics for PDF or XHTML Output

Oxygen XML Editor plugin provides the possibility of floating an image to the left or right of blocks of content in DITA topics for both PDF and XHTML output.

To float an image, you simply need to set the `outputclass` attribute on the `image` element. The possible values are:

- **float-left**
- **float-right**

For example, the following DITA structure will present the image to the right of the paragraph content in the output:

```
<p><image href="../../images/Lilac.jpg" scale="45" outputclass="float-right"/>
  <b>Lilac</b> (<b>Syringa</b>) is a genus of about 20–25 species of flowering plants
  in the olive family (<b>Oleaceae</b>), native to Europe and Asia.
</p>
```

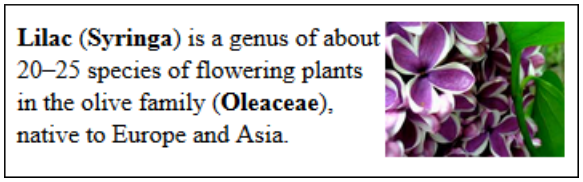


Figure 725: Image Floated to the Right

Adding Video, Audio, and Embedded HTML Resources in DITA Topics

You can insert references to media resources (such as videos, audio clips, or embedded HTML frames) in your DITA topics. The media resources can be played directly in **Author** mode and in all HTML5-based outputs. There is a toolbar button ( ) that allows you to insert and configure a reference to the media resource. You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them).

Table 73: Supported Media Types

Media	Description	Type	Supported Size Properties
mp3	Moving Picture Experts Group Layer-3 Audio	audio	Width
wav	Windows Wave	audio	Width
pcm	Pulse Code Modulation	audio	Width
m4a	Moving Picture Experts Group Layer-4 Audio	audio	Width
aif	Audio Interchange Format	audio	Width
mp4	Moving Picture Experts Group Layer-4 Video	video	Width & Height
flv	Flash Video	video	Width & Height
m4v	Itunes Video File	video	Width & Height
avi	Audio Video Interleaved	video	Width & Height
embedded video (such as YouTube or Vimeo)	Embedded Iframe Code	iframe	Width & Height

Adding a Media Resource

To insert a media resource in a DITA document, use the following procedure:

1. Place the cursor at the location where you want the media resource.

2. Select the **Insert Media Resource** action from the toolbar. The **Insert Media** dialog box appears.

   Note: You can also drag media files from your system explorer or the **Navigator** view and drop them into your documents (or copy and paste them). Note that this method will bypass the **Insert Media** dialog box, so if you need to adjust the size you will need to adjust the `width` or `height` attributes manually.

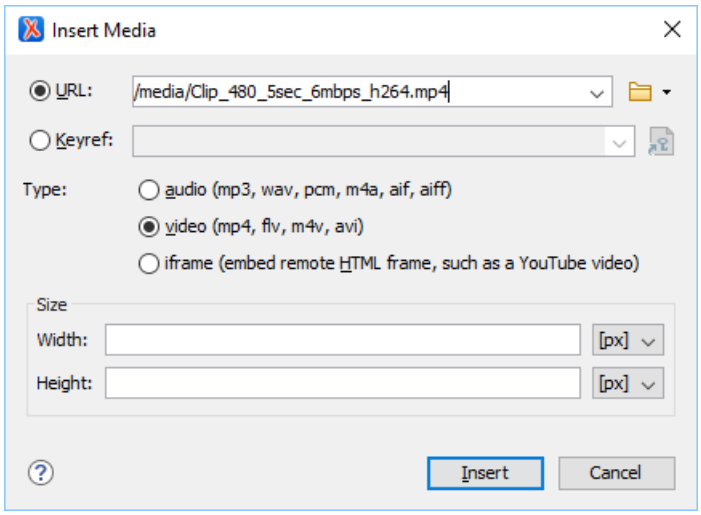


Figure 726: Insert Media Dialog Box

3. Configure the options in this dialog box and click **Insert**.

   The **Insert Media** dialog box includes the following options:

   URL

   Use this option to specify a URL for a media resource. It will insert the URL as the value of a `data` attribute of an `object` element. You can type the URL of the resource you want to insert or use the **Browse** drop-down menu to select it.

   Keyref

   You can use the **Choose Key Reference** button to open the **Choose Key** dialog box that presents the list of keys available in the selected *root map*. Use this dialog box to insert the selected key as the value of the `datakeyref` attribute of an `object` element. All keys that are presented in the dialog box are gathered from the *root map* of the current *DITA map*.

   Tip: If your defined keys are not listed in this dialog box, it is most likely trying to gather keys from the wrong *root map*. You can change the *root map* by using the **Change Root Map** link.

   Type

   Oxygen XML Editor plugin detects and automatically selects the media type based upon the specified resource in the URL field. You can manually change the type, but keep in mind that in the publishing stage the *object* element is converted to an HTML5 element based upon the type selected here. You can choose between: **audio**, **video**, or **iframe**.

   Size

   Use this section to configure the **Width** and **Height** of the frame for the media resource. Specifying a value in these options inserts a `width` and `height` attribute, respectively. For audio clips, only the **Width** can be adjusted.

Result in Author Mode: A reference to the specified video, audio, or embedded HTML frame is inserted in an `object` element and it is rendered in **Author** mode so that it can be played directly from there.

Attention: On Mac OS X, if you receive a **Blocked Plug-in** error message, you need to updated your *Flash Player* to the latest version.

Result in Output: In the publishing stage, the `object` element is converted to an HTML5 element so that it can be rendered properly and played in all HTML5-based outputs.

- **Videos** - The `object` element is converted to an HTML5 `video` element.

- **Audio Clips** - The `object` element is converted to an HTML5 `audio` element.
- **Embedded HTML Frames** - The `object` element is converted to an HTML5 `iframe` element.

Tip: There is an even faster way of inserting an embedded video (such as a YouTube or Vimeo). If you copy the embed code from the source (for example, you can right-click on a YouTube video and select **Copy embed code**), you can then paste the contents of the clipboard in the **URL** field and the **Type** will automatically be set on **iframe**, while the **Width** and **Height** will be populated according to the detected size, and an `allowfullscreen` parameter will automatically be added (set the value of this parameter to **true** to allow videos to play in full screen mode once the document is converted to XHTML output).

Inserting Media in HTML Outputs That Do Not Support Embedded Media

For certain types of HTML output (for example, CHM) that do not support embedded media (such as videos or audio files), Oxygen XML Editor plugin provides a parameter that can be set in the transformation scenario to present the media object as a plain link in the output.

This can be achieved by following these steps:

1. Edit the DITA transformation scenario for the output type that does not support embedded objects (for example, **DITA Map CHM**).
2. Go to the **Parameters** tab and click the **New** button to add a new parameter.
3. For the **Name**, enter: **com.oxygenxml.xhtml.linkToMediaResources**.
4. For the **Value**, enter: **true**.
5. Click **OK** and continue on to run the transformation.

   Result: The media object will appear in the output as a plain link instead of an embedded object.

For more information, see the following video demonstration:

https://www.youtube.com/embed/llX11gS4WaU

Related Information:

Adding Images in DITA Topics on page 1509
How to Add Video and Audio Objects in DITA WebHelp Output on page 1095

Image Maps in DITA

Oxygen XML Editor plugin includes support for **image maps** in DITA documents through the use of the `imagemap` element. This feature provides an easy way to create hyperlinks in various areas within an image without having to divide the image into separate image files. The visual **Author** editing mode includes an **Image Map Editor** that helps you to easily create and configure image maps.

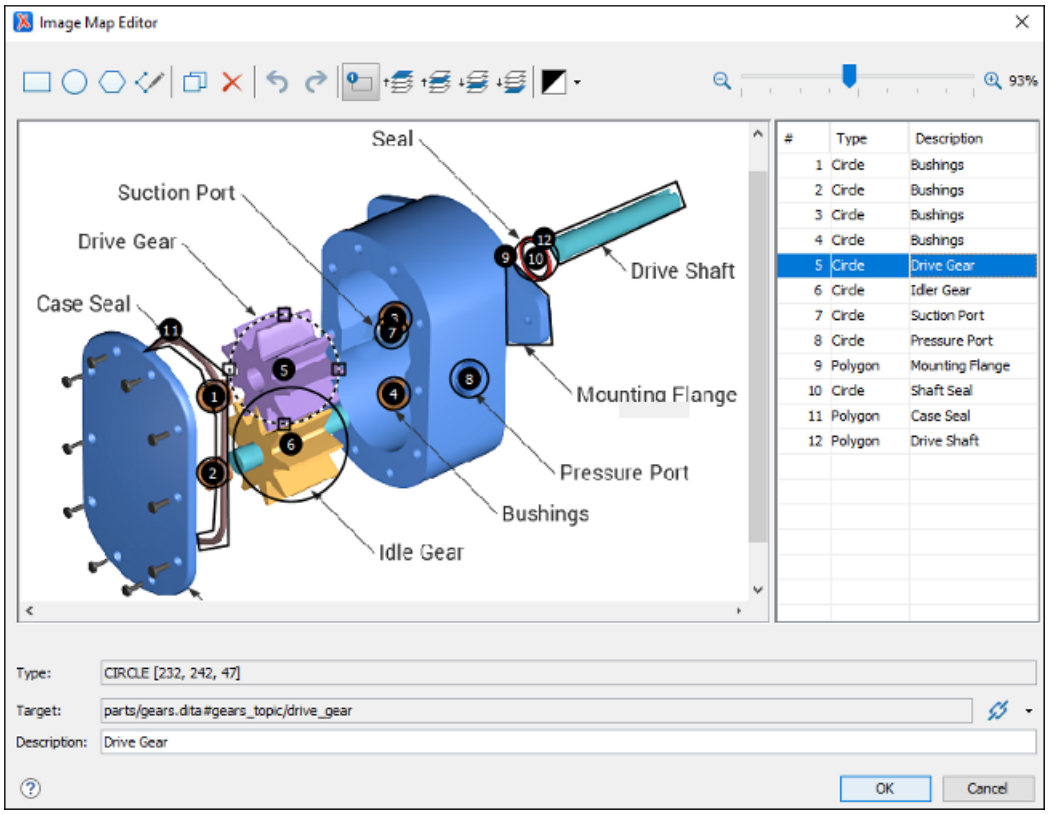


Figure 727: Image Map Editor in DITA

Image Map Editor Interface in DITA

The interface of the **Image Map Editor** consists of the following sections and actions:

Toolbar

New Rectangle

Use this button to draw a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Use this button to draw a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Use this button to draw a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

New Free Form Shape

Use this button to draw a free form shape over an area in the image. After selecting this button, left-click anywhere in the image to place the first point of your shape. Then move the cursor to the location of the next desired point and left-click to place the next point, and so on. To complete the shape (area), click the first point again and a line will automatically be added from the last point that was added, or simply double-click the last point to automatically add the line from the last point back to the first.

Duplicate

Use this button to create a duplicate of the currently selected shape.

Delete

Use this button to delete the currently selected shape.

Undo

Use this button to undo the last action.

Redo

Use this button to redo the last action that was undone.

Show/Hide Numbers

Use this button to toggle between showing or hiding the numbers for the shapes.

Bring Shape to Front

Use this button to bring the currently selected shape forward to the top layer.

Bring Shape Forward

Use this button to bring the currently selected shape forward one layer.

Send Shape Backward

Use this button to send the currently selected shape back one layer.

Send Shape to Back

Use this button to send the currently selected shape back to the bottom layer.

Color Chooser

Use this drop-down menu to select a color scheme for the lines and numbers of the shapes.

Zoom Slider

Use this slider to zoom the image in or out in the main image pane.

Image Pane

This main Image Pane is where you work with shapes to add hyperlinks to multiple areas within an image. The editing mechanisms that are supported in the Image Pane include the following:

Mouse Controls and Keyboard Shortcuts

- Use the mouse to select and move shapes around in the image pane. It is easy to see which shape is selected in this image pane because the border of the selected shape changes from a solid line to a dotted one.
- You can also drag any of the points of a selected shape to adjust its size and shape.
- You can hold down the **Ctrl** key to select multiple shapes and then move them simultaneously.
- You can also move shapes by using the arrow keys on your keyboard. In addition, you can hold down **Shift** while using the arrow keys to move the shape farther or **Alt** to move it 1 pixel at a time.
- To zoom in or out, you can use the **NumPad +** or **NumPad -** keys respectively. Use **Ctrl + NumPad 0** to reset the zoom level to its default value.
- You can use **Ctrl + Z** to undo an action or **Ctrl + Y** to redo the last action that was undone.

Contextual Menu Actions Available in the Image Pane

You can right-click the shapes, points, or anywhere in the Image Pane to invoke the contextual menu where the following actions are available:

Add Point

Adds a point to *Polygon* or *Free Form* shapes.

Remove Point

Removes the current point from *Polygon* or *Free Form* shapes.

Duplicate

Create a duplicate of the currently selected shape.

Delete

Delete the currently selected shape.

New Rectangle

Creates a rectangular shape over an area in the image. You can drag any of the four points to adjust the size and shape of the rectangle.

New Circle

Creates a circle over an area in the image. You can drag any of the four points to adjust the size of the circle.

New Polygon

Creates a polygon shape over an area in the image. This actions opens a dialog box that allows you to select the number of points for the polygon. You can drag any of the points to adjust the size and shape of the polygon.

Undo

Use this action to undo the last action.

Redo

Use this action to redo the last action that was undone.

Shape Table

The table at the right of the *Image Pane* is a sequential list of all the areas (shapes) that have been added in the image. It shows their number, type, and description (if one has been added). If you select one of the entries in the table, the corresponding shape will be selected in the *Image Pane*.

Properties

Type

Displays information about the selected coordinate.

Target

Allows you to choose the target resource that you want the selected area (shape) to be linked to. Select a target by using the **Link** drop-down menu to the right of the text field. You can choose between the following types of links: **Cross Reference**, **File Reference**, or **Web Link**. All three types will open a dialog box that allows you to define the target resource. This linking process is similar to the normal process of inserting links in DITA by using the identical **Link** drop-down menu from the main toolbar.

When you click **OK** to finalize your changes in the **Image Map Editor**, an `xref` element will be inserted with either an `href` attribute or a `keyref` attribute. Additional attributes may also be inserted and their values depend on the target and the type of link. For details about the three types of links and their dialog boxes, see Inserting a Link in Oxygen XML Editor plugin on page 1564.

Description

You can enter an optional description for the selected area (shape) that will be displayed in the **Image Map Details** section in **Author** mode and as a tooltip message when the end user hovers over the hyperlink in the output.

How to Create an Image Map in DITA

To create an image map on an existing image in a DITA document, follow these steps:

1. Right-click the image and select **Image Map Editor**.

   Result: This action will apply an *image map* to the current image and open the **Image Map Editor** dialog box.

2. Add hyperlinks to the image by selecting one of the shape buttons (**New Rectangle**, **New Circle**, or **New Polygon**).
3. Move the shape to the desired area in the image and drag any of the points on the shape to adjust its size or form. You can use the other buttons on the toolbar to adjust its layer and color, or to perform other editing actions.

   Tip: You can right-click any of the points, shapes, or anywhere in the Image Pane to access various helpful contextual menu actions. For example, the easiest way to remove a point is to right-click the point and select **Remove Point**.
4. With the shape selected, use one of the linking options in the **Link** drop-down menu to select a target resource (or enter its path in the **Target** text field).
5. (Optional) Enter a **Description** for the selected area (shape).
6. If you want to add more hyperlinks to the image, select a shape button again and repeat the appropriate steps.
7. When you are finished creating hyperlinks, click **OK** to process your changes.

Result: The *image map* is applied on the image and the appropriate elements and attributes are automatically added. In **Author** mode, the image map is now rendered over the image. If the image includes an `alt` element, its value will be displayed under the image. The following two buttons will also now be available under the image in **Author** mode:

- **Image Map Editor** - Click this button to open the **Image Map Editor**.
- **Image Map Details** - Click this button to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

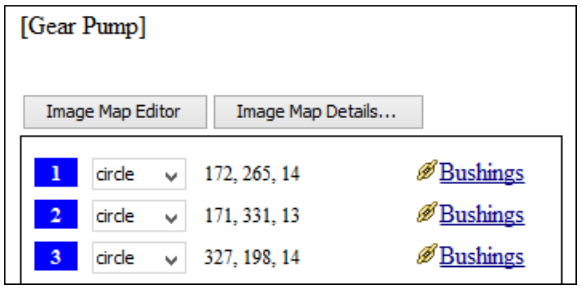


Figure 728: Image Map Details

How to Edit an Existing Image Map in DITA

To edit an existing image map, use any of the following methods:

- Simply double-click the image.
- Right-click the image and select **Image Map Editor**.
- Click the **Image Map Editor** button below the image.

All three methods open the **Image Map Editor** where you can make changes to the image map using the various features described above. You can also make changes to the XML structure of the image map in the **Text** editing mode.

You can also click the **Image Map Details** button below the image to expand a section that displays the details of the image map and allows you to change the shape and coordinates of the hyperlinked areas. Keep in mind that if you change the shape in this section, you also need to add or remove coordinates to match the requirements of the new shape.

Overlapping Areas

If shapes overlap one another in the **Image Map Editor**, the one on the top layer takes precedence. The number shown inside each shape represent its layer (if the numbers are not displayed, click the **Show/Hide Numbers**

button on the **Image Map Editor** toolbar). To change the layer order for a shape, use the layer buttons on the **Image Map Editor** toolbar (, , ,).

If you insert a shape and all of its coordinates are completely inside another shape, the **Image Map Editor** will display a warning to let you know that the shape is entirely covered by a bigger shape. Keep in mind that if a shape is completely inside another shape, its hyperlink will only be accessible if its layer is on top of the bigger shape.

Related Information:

DITA 'imagemap' Element Specifications

Adding Images in DITA Topics on page 1509

Adding Tables in DITA Topics

You can use the **Insert Table** action on the toolbar or from the contextual menu to add a table in a DITA topic. By default, DITA supports four types of tables:

- DITA *Simple* table model - This is the most commonly used model for basic tables.
- CALS table model (OASIS Exchange Table Model) - This is used for more advanced functionality.
- DITA *Choice* table model - This is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding.
- DITA *Properties* table model - This is used in DITA Reference documents to describe a property (for example, its type, value, and description).

If you are using a specialized DITA vocabulary, it may contain specialized versions of these table models.

Since DITA is a structured format, you can only insert a table in places in the structure of a topic where tables are allowed. The Oxygen XML Editor plugin toolbar provides support for entering and editing tables. It also helps to indicate where you are allowed to insert a table or its components by disabling the appropriate buttons.

Inserting a Simple Table Model

To insert a **Simple** DITA table, select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

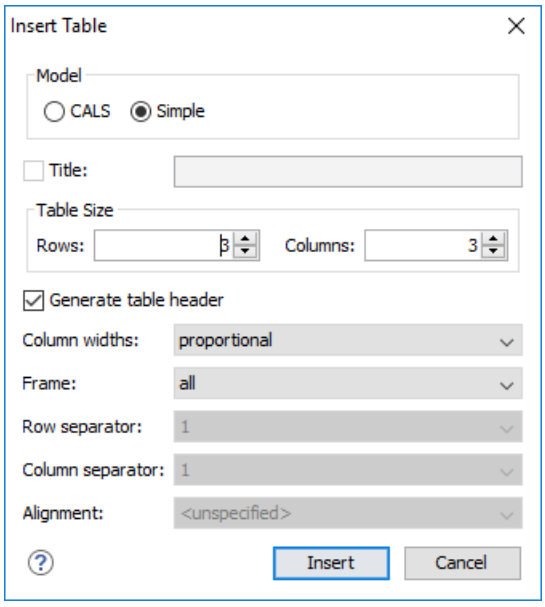


Figure 729: Insert Table Dialog Box - Simple Model

The dialog box allows you to configure the following options when you select the **Simple** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a simple table is inserted into your document at the current cursor position.

Inserting a CALS Table Model (OASIS Exchange Table)

To insert an OASIS Exchange Table (**CALS**), select the **Insert Table** action on the toolbar or from the contextual menu (or the **Table** submenu from the **DITA** menu). The **Insert Table** dialog box appears. Select **CALS** for the table **Model**. This model allows you to configure more properties than the *Simple* model.

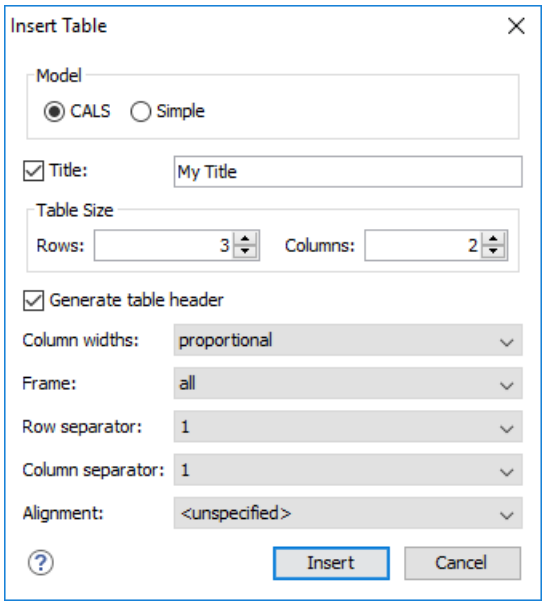


Figure 730: Insert Table Dialog Box - CALS Model

The dialog box allows you to configure the following options when you select the **CALS** table model:

Title

If this checkbox is selected, you can specify a title for your table in the adjacent text box.

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `colwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `colwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `colwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `colwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width (`colwidth` attribute). Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.
- **fixed** - The width is specified in fixed units. By default, the `pt` unit is inserted, but you can change the units in the **colspecs** (column specifications) section above the table or in **Text** mode. The following units are allowed: `pt` (points), `cm` (centimeters), `mm` (millimeters), `pi` (picas), `in` (inches).

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.

- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row separator

Specifies whether or not to include row separators (`rowsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Column separator

Specifies whether or not to include column separators (`colsep` attribute). The allowed values are: `0` (no separator) and 1 (include separators).

Alignment

Specifies the alignment of the text within the table (`align` attribute). The allowed values are:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Note: The options in the **Insert Table** dialog box for DITA documents are persistent, so changes made in one session will carry over to another.

When you click **Insert**, a CALS table is inserted into your document at the current cursor position.

When you insert a CALS table, you see a link for setting the `colspecs` (column specifications) of your table. Click the link to open the controls that allow you to adjust various column properties. Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

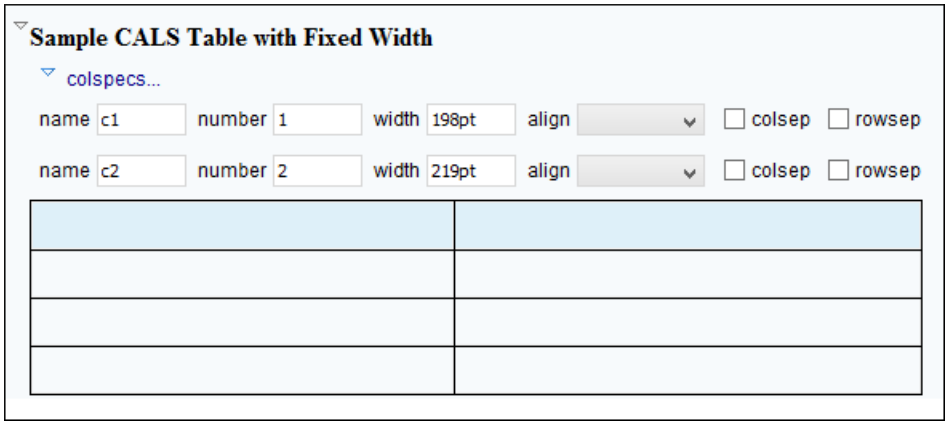


Figure 731: CALS Table in DITA

Inserting a Choice Table Model

To insert a **Choice** table within a `step` element in a DITA Task document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **choicetable** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Simple** for the table **Model**.

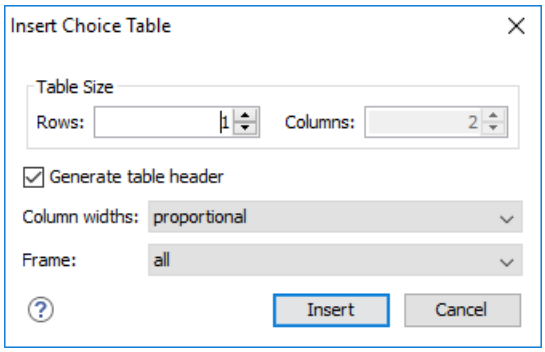


Figure 732: Insert Table Dialog Box - Choice Model

The dialog box allows you to configure the following options when you insert a *Choice* table model within a DITA Task:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Column widths

Allows you to specify the type of properties for column widths (`colwidth` attribute). You can choose one of the following properties for the column width:

- **proportional** - The width is specified in proportional (relative) units of measure. The proportion of the column is specified in a `relcolwidth` attribute with the values listed as the number of shares followed by an asterisk. The value of the shares are totaled and rendered as a percent. For example, `relcolwidth="1* 2* 3*"` causes widths of 16.7%, 33.3%, and 66.7%. When entering content into a cell in one column, the width proportions of the other columns are maintained. If you change the width by dragging a column in **Author** mode, the values of the `relcolwidth` attribute are automatically changed accordingly. By default, when you insert, drag and drop, or copy/paste a column, the value of the `relcolwidth` attribute is `1*`.
- **dynamic** - If you choose this option, the columns are created without a specified width. Entering content into a cell changes the rendered width dynamically. If you change the width by dragging a column in **Author** mode, a dialog box will be displayed that asks you if you want to switch to proportional or fixed column widths.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Choice* table is inserted into your DITA Task document at the current cursor position (within a `step` element).

Inserting a Properties Table Model

To insert a **Properties** table within a `refbody` element in a DITA Reference document, select the **Insert Table** action on the toolbar or in the **Insert** submenu from the contextual menu (or the **Table** submenu from the **DITA** menu), or select **properties(wizard)** from the *Content Completion Assistant*. The **Insert Table** dialog box appears. Select **Properties** for the table **Model**.

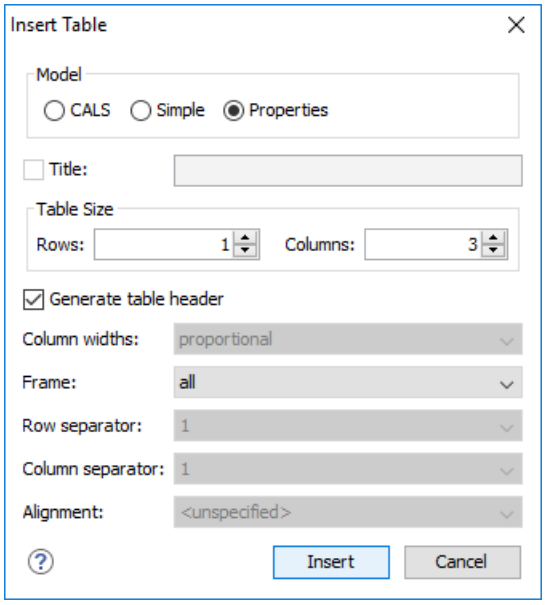


Figure 733: Insert Table Dialog Box - Properties Model

The dialog box allows you to configure the following options when you insert a *Properties* table model within a DITA Reference:

Table Size

Allows you to choose the number of **Rows** and **Columns** for the table.

Generate table header

If selected, an extra row will be inserted at the top of the table to be used as the table header.

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

When you click **Insert**, a *Properties* table is inserted into your DITA Reference document at the current cursor position (within a `refbody` element).

Editing an Existing Table

You can edit the structure of an existing table using the table buttons on the toolbar (or in the contextual menu) to add or remove cells, rows, or columns, and to set basic table properties. Additional attributes can be used to fine-tune the formatting of your tables by using the **Attributes** view (**Window** > **Show View** > **Attributes**). See the DITA documentation for a full explanation of these attributes.

You can also use the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or contextual menu (or **DITA** menu) to modify many of the properties of the table.

Also, remember that underneath the visual representation, both table models are really just XML. If necessary, you can edit the XML directly by switching to **Text** mode.

Related Information:

Editing Tables in Author Mode on page 499

DITA Table Layouts

Depending on the context, DITA accepts the following table layouts:

- *CALS* table model
- *Simple* table model
- *Choice* table model
- *Properties* table model

CALS Table Model Layout

The **CALS** table model allows for more flexibility and table customization than other models. When choosing a **CALS** table model from the **Insert Table** dialog box, you have access to more configurable properties. The layout of a **CALS** table includes a **colspecs** section that allows you to easily configure some properties without opening the **Table Properties** dialog box. For example, you can change the value of column widths (`colwidth` attribute) or the text alignment (`align` attribute). Although they appear as part of the **Author** mode, the `colspecs` link and its controls will not appear in your output. They are just there to make it easier to adjust how the columns of your table are formatted.

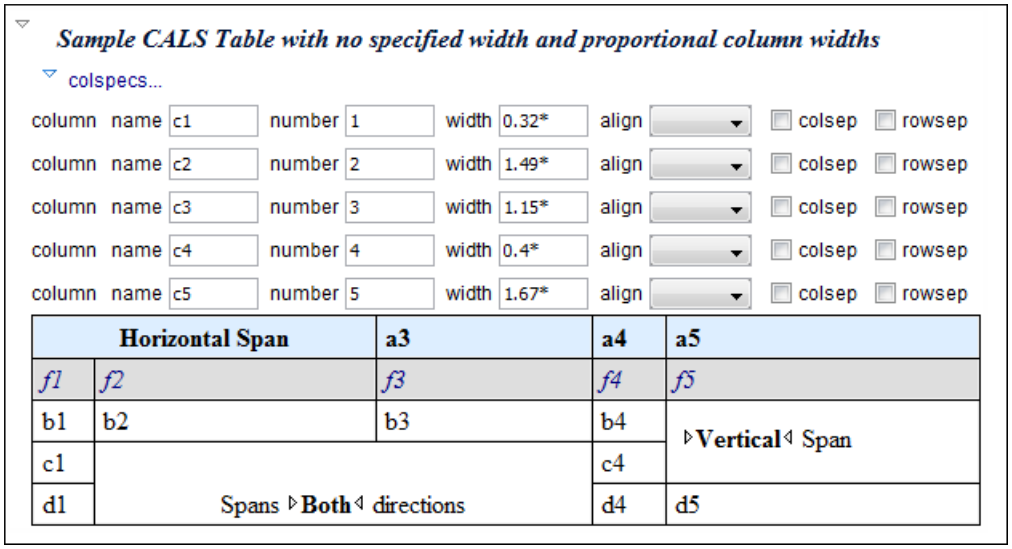


Figure 734: CALS Table in DITA

Simple Table Model Layout

When choosing a **Simple** table model from the **Insert Table** dialog box, you only have access to configure a few properties. For example, you can choose the number of rows and columns, specify values for frames, and choose from a few types of properties for the column width. The layout of this type of table is very simple, as the name suggests.

Header 1	Header 2
Column 1	Column 2

Figure 735: DITA Simple Table

Choice Table Model Layout

A **Choice** table model is used within a `step` element in a DITA Task document to describe a series of optional choices that a user must make before proceeding. The `choicetable` element is a useful device for documenting options within a single step of a task. You can insert *Choice* tables in DITA Task documents either by selecting **choicetable** from the *Content Completion Assistant* (within a `step` element) or by using the **Insert Table** action on the toolbar or from the contextual menu). The options and layout of a *Choice* table is similar to the *Simple* table model.

Option	Description
Opt A	
Opt B	
Opt C	

Figure 736: DITA Choice Table

Properties Table Model Layout

A **Properties** table model is used within a `refbody` element in a DITA Reference document to describe a property (for example, its type, value, and description). You can insert *Properties* tables in DITA Reference documents either by selecting **properties(wizard)** from the *Content Completion Assistant* (within a `refbody` element) or by using the **Insert Table** action on the toolbar (or from the contextual menu) and selecting **Properties** for the **Model**. The layout of a *Properties* table is very simple. It allows for a maximum of 3 columns (typically for property type, value, and description) and the only options available are for whether or not you want a header row and for specifying frames (borders).

Property Type	Property Value	Property Description
A	B	C

Figure 737: DITA Properties Table

Table Validation in DITA

Oxygen XML Editor plugin reports table layout problems that are detected in manual or automatic validations.

When you validate a *DITA map* with the **Validate and Check for Completeness** action, if the **Report table layout problems** option is selected in the **DITA Map Completeness Check** dialog box, table layout problems will be reported in the validation results. The types of errors that may be reported for DITA table layout problems include:

CALS Tables

- A row has fewer cells than the number of columns detected from the table `cols` attribute.
- A row has more cells than the number of columns detected from the table `cols` attribute.
- A cell has a vertical span greater than the available rows count.
- The number of `colspecs` is different than the number of columns detected from the table `cols` attribute.
- The number of columns detected from the table `cols` attribute is different than the number of columns detected in the table structure.
- The value of the `cols`, `rowsep`, or `colsep` attributes are not numeric.
- The `namest`, `nameend`, or `colname` attributes point to an incorrect column name.

Simple or Choice Tables

- A row has fewer cells than the number of table columns.

Editing Table Properties in DITA

To customize the look of a table in DITA, place the cursor anywhere in a table and invoke the **Table Properties (Ctrl + T (Command + T on OS X))** action from the toolbar or the **Table** submenu of the contextual menu (or **DITA** menu). This opens the **Table properties** dialog box.

The **Table properties** dialog box allows you to set specific properties to the table elements. The options that are available depend on the context and location within the table in which the action was invoked.

Note: Some properties allow the following special values, depending on the context and the current properties or values:

- **<not set>** - Use this value if you want to remove a property.
- **<preserve>** - If you select multiple elements that have the same property set to different values, you can choose this value to keep the values that are already set. In some cases it can also be used to keep the current non-standard value for a particular property.

Edit Table Properties for a CALS Table Model

For a **CALS** table model, the **Table properties** dialog box includes four tabs of options:

- **Table** tab - The options in this tab apply to the entire table.
- **Row** tab - The options in this tab apply to the current row or selection of multiple rows. A message at the bottom of the tab tells you how many rows will be affected.
- **Column** tab - The options in this tab apply to the current column or selection of multiple columns. A message at the bottom of the tab tells you how many columns will be affected.
- **Cell** tab - The options in this tab apply to the current cell or selection of multiple cells. A message at the bottom of the tab tells you how many cells will be affected.

The options in four tabs include a **Preview** pane that shows a representation of the modification.

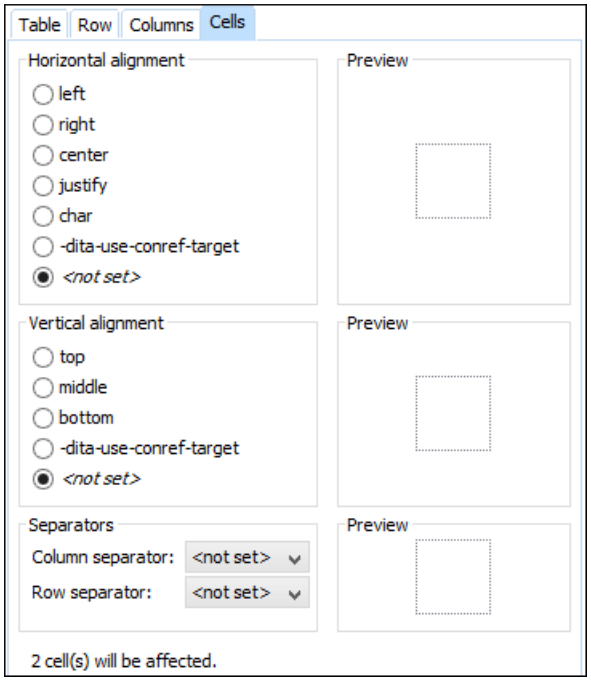


Figure 738: Table Properties Dialog Box with Cell Tab Selected (DITA CALS Table Model)

The options in the four tabs include the following:

Horizontal alignment (Available in the Table, Column, and Cell tabs)

Specifies the horizontal alignment of text within the current table/column/cell or selection of multiple columns/cells (`align` attribute). The allowed values are as follows:

- **left** - Aligns the text to a left position.
- **right** - Aligns the text to a right position.
- **center** - Aligns the text to a centered position.
- **justify** - Stretches the line of text so that it has equal width.

  Note: The `justify` value cannot be rendered in **Author** mode, so you will only see it in the output.
- **char** - Aligns text to the leftmost occurrence of the value specified on the `char` attribute for alignment.

- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Vertical alignment (Available in the Row and Cell tabs)

Specifies the vertical alignment of text within the current row/cell or selection of multiple rows/cells (`valign` attribute). The allowed values are as follows:

- **top** - Aligns the text at the top of the cell.
- **middle** - Aligns the text in a vertically centered position.
- **bottom** - Aligns the text at the bottom of the cell.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Column separator (Available in the Table, Column, and Cell tabs)

Specifies whether or not to include column separators (borders/grid lines) in the form of the `colsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Row separator (Available in all four tabs)

Specifies whether or not to include row separators (borders/grid lines) in the form of the `rowsep` attribute. The allowed values are: `0` (no separator) and 1 (include separators).

Frame (Available only in the Table tab)

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Edit Table Properties for a Simple, Choice, or Properties Table Model

For a *Simple*, *Choice*, *Properties* table model, the **Table properties** dialog box only allows you to edit a few options.

Table tab

Frame

Allows you to specify a value for the `frame` attribute. It is used to specify where a border should appear in the table. The allowed values are as follows:

- **none** - No border will be added.
- **all** - A border will be added to all frames.
- **top** - A border will be added to the top frame.
- **topbot** - A border will be added to the top and bottom frames.
- **bottom** - A border will be added to the bottom frame.
- **sides** - A border will be added to the side frames.
- **-dita-use-conref-target** - Normally, when using a `conref`, the values of attributes specified locally are preserved. You can choose this option to override this behavior and pull the value of this particular attribute from the `conref` target. For more information, see https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/ditauseconreftarget.html.

Row tab (not available for *Properties* tables)

Row type

Allows you change the row to a body or header type of row.

Related Information:

Adding Tables in DITA Topics on page 509
Editing Tables in Author Mode on page 499

Adding MathML Equations in DITA Topics

You can add MathML equations in a DITA document using one of the following methods:

- Embed MathML directly into a DITA topic. You can start with the **Framework templates / DITA / topic / Composite with MathML** document template, available from the **New** file action wizard.
- Reference an external MathML file as an image, using the **Insert Image** action that is available on the DITA toolbar (or from the **DITA** > **Insert** menu).

Note: MathML equations contained in DITA topics can only be published out-of-the-box in PDF using the **DITA PDF** transformation scenario. For other publishing formats, you must employ additional customizations for handling MathML content.

DITA Author Mode Actions

A variety of actions are available in the DITA *framework* that can be added to the **DITA** menu, the **Author Custom Actions** toolbar, the contextual menu, and the *Content Completion Assistant*.

DITA Toolbar Actions

The following default actions are readily available on the **DITA (Author Custom Actions)** toolbar when editing in **Author** mode (by default, most of them are also available in the **DITA** menu and in various submenus of the contextual menu):

Bold

Surrounds the selected text with a b tag. You can use this action on multiple non-contiguous selections.

Italic

Surrounds the selected text with an `i` tag. You can use this action on multiple non-contiguous selections.

Underline

Surrounds the selected text with a u tag. You can use this action on multiple non-contiguous selections.

Link Actions Drop-Down Menu

The following link actions are available from this menu:

Cross Reference

Opens the **Cross Reference (xref)** dialog box that allows you to insert a link to a target DITA resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource. For more information, see Linking in DITA Topics on page 1563.

File Reference

Opens the **File Reference** dialog box that allows you to insert a link to a target non-DITA file resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. For more information, see Linking in DITA Topics on page 1563.

Web Link

Opens the **Web Link** dialog box that allows you to insert a link to a target web-related resource at the current location within a document. The target resource can be a URL or a key that is already defined in your *DITA map* structure. For more information, see Linking in DITA Topics on page 1563.

Related Link to Topic

Opens the **Cross Reference (xref)** dialog box that allows you to insert a link to a target DITA resource in a related links section at the bottom of the current document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Related Link to File

Opens the **File Reference** dialog box that allows you to insert a link to a target non-DITA file resource in a related links section at the bottom of the current document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Related Link to Web Page

Opens the **Web Link** dialog box that allows you to insert a link to a target web-related resource in a related links section at the bottom of the current document. The target resource can be a URL or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. For more information, see Linking in DITA Topics on page 1563.

Insert Image

Opens the **Insert Image** dialog box that allows you to configure the properties of an image to be inserted into a DITA document at the cursor position.

Insert Media Resource

Opens the **Insert Media** dialog box that allows you to select and configure the properties of a media object to be inserted into a DITA document at the cursor position. The result will be that a reference to the specified video, audio, or embedded HTML frame is inserted in an `object` element and it is rendered in **Author** mode so that it can be played directly from there.

Insert Section Drop-Down Menu

The following insert actions are available from this menu:

Insert Section

Inserts a new `section` element in the document, depending on the current context.

Insert Concept

Inserts a new `concept` element, depending on the current context. Concepts provide background information that users must know before they can successfully work with a product or interface.

Insert Task

Inserts a new `task` element, depending on the current context. Tasks are the main building blocks for task-oriented user assistance. They generally provide step-by-step instructions that will help a user to perform a task.

Insert Topic

Inserts a new `topic` element, depending on the current context. Topics are the basic units of DITA content and are usually organized around a single subject.

Insert Reference

Inserts a new `reference` element, depending on the current context. A reference is a top-level container for a reference topic.

Insert Paragraph

Inserts a new paragraph at current cursor position.

Reuse Content

This action provides a mechanism for reusing content fragments. It opens the **Reuse Content** dialog box that allows you to insert several types of references to reusable content at the cursor position. The types of references that you can insert using this dialog box include content references (*conref*), content key references (*conkeyref*), or key references to metadata (*keyref*).

Insert step or list item

Inserts a new list or step item in the current list type.

Insert Unordered List

Inserts an unordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an unordered list.

Insert Ordered List

Inserts an ordered list at the cursor position. A child list item is also automatically inserted by default. You can also use this action to convert selected paragraphs or other types of lists to an ordered list.

Sort

Sorts cells or list items in a table.

Insert Table

Opens a dialog box that allows you to configure and insert a table. You can generate a header and footer, set the number of rows and columns of the table and decide how the table is framed. You can also use this action to convert selected paragraphs, lists, and inline content (mixed content — text + markup — that is rendered inside a *block element*) into a table, with the selected content inserted in the first column, starting from the first row after the header (if a header is inserted).

Note: If the selection contains a mixture of elements that cannot be converted, you will receive an error message saying that **Only lists, paragraphs, or inline content can be converted to tables**.

Insert Row Below

Inserts a new table row with empty cells below the current row. This action is available when the cursor is positioned inside a table.

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Column After

Inserts a new table column with empty cells after the current column. This action is available when the cursor is positioned inside a table.

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

DITA Menu Actions

The following additional actions can be found in the **DITA** menu when editing in **Author** mode:

Reuse Content

This action provides a mechanism for reusing content fragments. It opens the **Reuse Content** dialog box that allows you to insert several types of references to reusable content at the cursor position. The types of references that you can insert using this dialog box include content references (*conref*), content key references (*conkeyref*), or key references to metadata (*keyref*).

Push Current Element

Opens the **Push current element** dialog box that allows content from a source topic to be inserted into another topic without any special coding in the topic where the content will be re-used.

Edit Content Reference

This action is available for elements with a `conref` or `conkeyref` attribute. it opens the **Edit Content Reference** dialog box that allows you to edit the source location (or key) and source element of a content reference (or content key reference), and the reference details (`conref`/`conkeyref` and `conrefend` attributes). For more information, see Reuse Content Dialog Box on page 1545.

Replace Reference with content

Replaces the referenced fragment (`conref` or `conkeyref`) at the cursor position with its content. This action is useful if you want to make changes to the content in the currently edited document without changing the referenced fragment in its source location.

Remove Content Reference

Removes the content reference (`conref` or `conkeyref`) inside the element at the cursor position.

Create Reusable Component

Creates a reusable component from the selected fragment of text. For more information, see Creating a Reusable Content Component on page 1554.

Insert Reusable Component

Inserts a reusable component at cursor location. For more information, see Inserting a Reusable Content Component on page 1555.

Paste special submenu

This submenu includes the following special paste actions that are specific to the DITA *framework*:

Paste as content reference

Inserts a content reference (a DITA element with a `conref` attribute) to the DITA XML element from the clipboard. An entire DITA XML element with an ID attribute must be present in the clipboard when the action is invoked. The `conref` attribute will point to this ID value.

Paste as content key reference

Allows you to indirectly reference content using the `conkeyref` attribute. When the DITA content is processed, the key references are resolved using key definitions from *DITA maps*. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Paste as link

Looks for the first element with an ID value in the clipboard and inserts an `xref` that points to that element. If no elements with an ID value are found, a message will appear that informs you that to use this action, the clipboard contents must include at least one element with a declared ID.

Paste as link (keyref)

Inserts a link to the element that you want to reference. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Subscript

Surrounds the selected text with a *subscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly below the baseline and slightly smaller than the rest of the text.

Superscript

Surrounds the selected text with a *superscript* tag, used for inserting a character (number, letter, or symbol) that will appear slightly above the baseline and slightly smaller than the rest of the text.

Table submenu

In addition to the table actions available on the toolbar, the following actions are available in this submenu:

Insert Row Above

Inserts a new table row with empty cells above the current row. This action is available when the cursor is positioned inside a table.

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Insert Column Before

Inserts a column before the current one.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Insert Cell

Inserts a new empty cell depending on the current context. If the cursor is positioned between two cells, Oxygen XML Editor plugin a new cell at cursor position. If the cursor is inside a cell, the new cell is created after the current cell.

Insert > Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

ID Options

Opens the **ID Options** dialog box that allows you to configure options for generating IDs in **Author** mode. The dialog box includes the following:

ID Pattern

The pattern for the ID values that will be generated. This text field can be customized using constant strings or any of the Oxygen XML Editor plugin Editor Variables.

Element name or class value to generate ID for

The elements for which ID values will be generated, specified using class attribute values. To customize the list, use the **Add**, **Edit**, or **Remove** buttons.

Auto generate IDs for elements

If selected, Oxygen XML Editor plugin will automatically generate unique IDs for the elements listed in this dialog box when they are created in **Author** mode.

Remove IDs when copying content in the same document

When copying and pasting content in the same document, this option allows you to control whether or not pasted elements that are listed in this dialog box should retain their existing IDs. To retain the element IDs, deselect this option.

Note: This option does not have an effect on content that is *cut* and *pasted*.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.

- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Browse DITA Style Guide

Opens the **DITA Style Guide Best Practices for Authors** in your browser and displays a topic that is relevant to the element at the cursor position. When editing DITA documents, this action is available in the contextual menu of the editing area (under the **About Element** sub-menu), in the **DITA** menu, and in some of the documentation tips that are displayed by the *Content Completion Assistant*.

Refresh References

You can use this action to manually trigger a refresh and update of all referenced resources.

Tags display mode Submenu

Full Tags with Attributes

Displays full tag names with attributes for both *block* and *inline elements*.

Full Tags

Displays full tag names without attributes for both *block* and *inline elements*.

Block Tags

Displays full tag names for *block elements* and simple tags without names for *inline elements*.

Inline Tags

Displays full tag names for *inline elements*, while *block elements* are not displayed.

Partial Tags

Displays simple tags without names for *inline elements*, while *block elements* are not displayed.

No Tags

No tags are displayed. This is the most compact mode and is as close as possible to a word-processor view.

Configure Tags Display Mode

Use this option to go to the **Author** preferences page where you can configure the **Tags Display Mode** options.

Profiling/Conditional Text Submenu

Edit Profiling Attributes

Allows you to configure the profiling attributes and their values.

Show Profiling Colors and Styles

Select this option to turn on conditional styling.

Show Profiling Attributes

Select this option to turn on conditional text markers. They are displayed at the end of conditional text blocks, as a list of attribute name and their currently set values.

Show Excluded Content

When this option is selected, the content filtered by the currently applied condition set is grayed-out. To show only the content that matches the currently applied condition set, deselect this option.

List of all profiling condition sets that match the current document type

You can click a listed condition set to activate it.

Profiling Settings

Opens the profiling options preferences page, where you can manage profiling attributes and profiling conditions sets. You can also configure the profiling styles and colors options from the colors/styles preferences page and the attributes rendering preferences page.

DITA Contextual Menu Actions

In addition to many of the DITA toolbar actions and the *general* **Author** mode contextual menu actions, the following DITA *framework*-specific actions are also available in the contextual menu when editing in **Author** mode:

Paste special submenu

This submenu includes the following special paste actions that are specific to the DITA *framework*:

Paste as content reference

Inserts a content reference (a DITA element with a `conref` attribute) to the DITA XML element from the clipboard. An entire DITA XML element with an ID attribute must be present in the clipboard when the action is invoked. The `conref` attribute will point to this ID value.

Paste as content key reference

Allows you to indirectly reference content using the `conkeyref` attribute. When the DITA content is processed, the key references are resolved using key definitions from *DITA maps*. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Paste as link

Looks for the first element with an ID value in the clipboard and inserts an `xref` that points to that element. If no elements with an ID value are found, a message will appear that informs you that to use this action, the clipboard contents must include at least one element with a declared ID.

Paste as link (keyref)

Inserts a link to the element that you want to reference. To use this action, you must first do the following:

1. Make sure the DITA element that contains the copied content has an ID attribute assigned to it.
2. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
3. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.

Image Map Editor

This action is available in the contextual menu when it is invoked on an image. This action applies an *image map* to the current image (if one does not already exist) and opens the **Image Map Editor** dialog box. This feature allows you to create hyperlinks in specific areas of an image that will link to various destinations.

Table Actions

The following table editing actions are available in the contextual menu when it is invoked on a table:

Insert Rows

Opens a dialog box that allows you to insert any number of rows and specify the position where they will be inserted (**Above** or **Below** the current row).

Delete Row(s)

Deletes the table row located at cursor position or multiple rows in a selection.

Insert Columns

Opens a dialog box that allows you to insert any number of columns and specify the position where they will be inserted (**Above** or **Below** the current column).

Delete Column(s)

Deletes the table column located at cursor position or multiple columns in a selection.

Join Cells

Joins the content of the selected cells (both horizontally and vertically).

Split Cell

Splits the cell at the cursor location. If Oxygen XML Editor plugin detects more than one option to split the cell, a dialog box will be displayed that allows you to select the number of rows or columns to split the cell into.

Sort

Sorts cells or list items in a table.

Table Properties

Opens the **Table properties** dialog box that allows you to configure properties of a table (such as frame borders).

Other Actions submenu

This submenu give you access to all the usual contextual menu actions.

Insert > Σ Insert Equation

Opens the **XML Fragment Editor** that allows you to insert and edit MathML notations.

Generate IDs

Oxygen XML Editor plugin generates unique IDs for the current element (or elements), depending on how the action is invoked:

- When invoked on a single selection, an ID is generated for the selected element at the cursor position.
- When invoked on a block of selected content, IDs are generated for all top-level elements and elements from the list in the **ID Options** dialog box that are found in the current selection.

Note: The **Generate IDs** action does not overwrite existing ID values. It only affects elements that do not already have an `id` attribute.

Reuse submenu

This submenu includes the following actions in regards to reusing content in DITA:

Push Current Element

Opens the **Push current element** dialog box that allows content from a source topic to be inserted into another topic without any special coding in the topic where the content will be re-used.

Edit Content Reference

This action is available for elements with a `conref` or `conkeyref` attribute. it opens the **Edit Content Reference** dialog box that allows you to edit the source location (or key) and source element of a content reference (or content key reference), and the reference details (`conref`/`conkeyref` and `conrefend` attributes). For more information, see Reuse Content Dialog Box on page 1545.

Replace Reference with content

Replaces the referenced fragment (`conref` or `conkeyref`) at the cursor position with its content. This action is useful if you want to make changes to the content in the currently edited document without changing the referenced fragment in its source location.

Remove Content Reference

Removes the content reference (`conref` or `conkeyref`) inside the element at the cursor position.

Create Reusable Component

Creates a reusable component from the selected fragment of text. For more information, see Creating a Reusable Content Component on page 1554.

Insert Reusable Component

Inserts a reusable component at cursor location. For more information, see Inserting a Reusable Content Component on page 1555.

Search References (Ctrl + Shift + G)

Finds the references to the `id` attribute value for the element at the current cursor position, in all the topics contained in the current *DITA map* (opened in the **DITA Maps Manager** view). If no references are found for the current element, a dialog box will be displayed that offers you the option of searching for references to its ancestor elements.

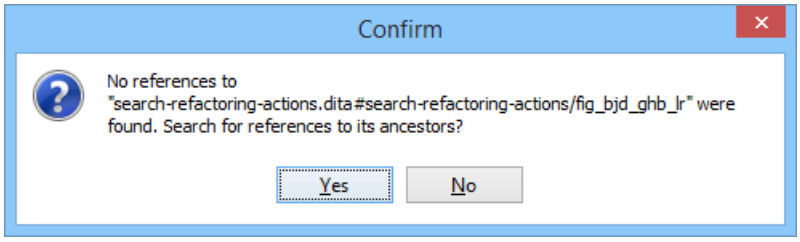


Figure 739: Search References to Ancestors Dialog Box

Show Key Definition

Available for elements that have a `conkeyref` or `keyref` attribute set (or elements with an ancestor element that has a `conkeyref` or `keyref` attribute). It computes the key name and opens the *DITA map* that contains the definition of the key with the element that defines that key selected.

About Element submenu

This submenu includes the following actions:

Style Guide

Opens the **DITA Style Guide Best Practices for Authors** in your browser and displays a topic that is relevant to the element at the cursor position. When editing DITA documents, this action is available in the contextual menu of the editing area (under the **About Element** sub-menu), in the **DITA** menu, and in some of the documentation tips that are displayed by the *Content Completion Assistant*.

Browse reference manual

Opens a reference to the documentation of the XML element closest to the cursor position in a web browser.

Go to Definition

Moves the cursor to the definition of the current element.

DITA Drag/Drop (or Copy/Paste) Actions

Dragging a file from the **Navigator** view or **DITA Maps Manager** view and dropping it into a DITA document that is edited in **Author** mode, creates a link to the dragged file (the `xref` DITA element with the `href` attribute) at the drop location. Copy and paste actions work the same.

You can also drag images or media files from your system explorer or the **Navigator** view and drop them into a DITA document (or copy and paste). This will insert the appropriate element at the drop or paste location (for example, dropping/pasting an image will insert the DITA `image` element with an `href` attribute).

Working with Markdown Documents in DITA

Oxygen XML Editor plugin includes some unique features that allow you to easily integrate Markdown documents in a DITA project. This is especially helpful for teams that have contributors who are familiar with the Markdown syntax, but they want their output to be generated from DITA projects. The integration between the Markdown editor and DITA includes actions to export or convert Markdown documents to DITA topics and the **DITA** tab in the *Preview* pane provides a visualization of how the topic will look after conversion.

Export Markdown as a DITA Topic

The Markdown editor includes an option to quickly convert the current Markdown document into a DITA topic. The **Export as DITA Topic** action is available in the contextual menu of the left-side text editor and the right-side *Preview* pane when the **DITA** tab selected.

The conversion creates a new XML file that is defined as a DITA topic and opens it in the **Text** editing mode. You can then work with the document as you would with any other DITA topic, although you may need to manually correct some issues where the parser could not properly map Markdown syntax to DITA markup.

Working with Markdown Documents in the DITA Maps Manager

Oxygen XML Editor plugin has some specialized features that allow you to integrate Markdown documents directly into your DITA project using the **DITA Maps Manager**. The following features are available for Markdown documents in the **DITA Maps Manager** view:

- **Insert Reference to Markdown Document** - You can use the **New**, **Reference**, and **Reference to the currently edited file** actions from the **Append Child**, **Insert Before**, or **Insert After** submenu when invoking the contextual menu in the **DITA Maps Manager** to insert a reference to a Markdown document at the selected location in the map. Markdown documents will be inserted as a topic reference (`topicref` element) with the `format` attribute set to `markdown`.
- **Validate Markdown Documents in DITA Maps** - When you use the **Validate and Check for Completeness** action from the **DITA Maps Manager** toolbar to check the integrity of the structure of a *DITA map*, Markdown documents that are referenced in the *DITA map* will be converted to DITA topics in the background and validated the same as any other DITA topic.
- **Transforming DITA Maps with Markdown Documents** - When transforming *DITA maps* that have Markdown documents referenced, the transformation will convert the Markdown documents to normal DITA output without you needing to manually convert the Markdown documents to DITA topics.
- **Manually Convert Markdown Documents to DITA Topics** - If you need to use DITA semantics that are not possible in Markdown syntax (such as content references, related links, and other DITA-specific syntax), you can manually convert the Markdown document into a DITA topic. To do so, right-click the Markdown document in the **DITA Maps Manager** and select **Refactoring** > **Convert Markdown to DITA Topic**. This will open a dialog box that allows you to configure options for converting the document to an XML file that is defined as a DITA topic.

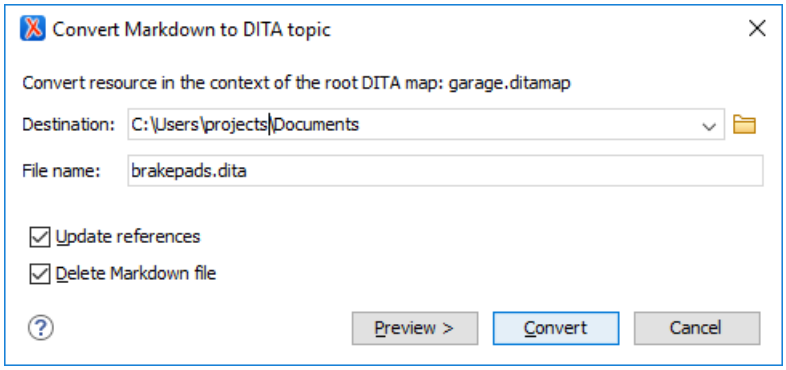


Figure 740: Convert Markdown to DITA Topic Dialog Box

This dialog box includes the following options:

Destination

The destination path for the new DITA topic.

File Name

Presents the current name and allows you to change it.

Update references

Select this option to update all references of the file in the *DITA map* and in the files referenced from the *DITA map*.

Delete Markdown file

If selected, the Markdown version of the file is deleted when the document is converted into a DITA file. If deselected (default value), when the document is converted into a DITA file, the original Markdown file is also preserved in its current location.

Preview

Select this button to display a preview of the changes Oxygen XML Editor plugin is about to make.

Convert

Select this button to perform the conversion.

Tip: Oxygen XML Editor plugin comes with a sample ditamap project for converting Markdown to DITA. Go to the **Navigator** view, open the `sample.xpr` project, and navigate to the `dita/markdown-dita` folder.

Related Information:

Markdown Editor on page 810
Actions Available in the Markdown Editor on page 812
Markdown Editor Syntax Rules and Specifications on page 817
Automatic Validation in Markdown Documents on page 815

Working with Keys

DITA uses keys to insert content that may have different values in various circumstances. Keys provide a way to reference something indirectly. This can make it easier to manage and to reuse content in a number of ways.

You can think of keys as like renting a post office box. Instead of the mail going directly from the sender to your house, it now goes to the post office box. You then go to the post office box and bring the mail back to your house. If you move to a new house, your mail still gets to you because it comes to the same post office box. You do not have to send change of address cards to all the people who send you mail. Your mailbox address is the key that makes sure your mail always reaches you, even if you move.

Similarly, if you use keys in your content to reference other content, you do not have to update the source content to change the value of the key or what it points to. You just change the definition of the key.

Using Keys for Values

You can use keys to represent values that may vary depending on the type of output. For instance, you may have several products that share a common feature. When you want to describe that feature, you need a way to insert the name of the product, even though that name is different depending on which product the feature description is being used for. For more information, see Working with Variable Text in DITA on page 1555.

Assigning Keys to Topics

You can assign a key to a topic and use that key to reference that topic for various purposes, such as reuse or linking. As always, keys are defined in maps, so the key definition is done using the keys attribute of the `topicref` element:

```
<topicref href="quick-heat.dita" keys="feature.quick-heat"/>
```

The easiest way to assign keys to a topic (and insert the `topicref` element in its *DITA map*) is to use the **Keys** tab in the **Edit Properties** dialog box. In the **DITA Maps Manager**, invoke the contextual menu on the topic for which you want to assign a key and select **Edit Properties**. Go to the **Keys** tab and enter the name of the key in the **Define keys** field.

Once a key is assigned to a topic, you can use it to reference that topic for various purposes:

- You can create a link to it using `<xref keyref="feature.quick-heat"/>`. This allows you to change the target of the link by changing the topic that is pointed to by the key (for example, by profiling).
- You can use it in a map to create a reference to a topic by key: `<topicref keyref="feature.quick-heat"`. This allows you to change which topic is inserted in the map by the build, by changing the topic that is pointed to by the key.

- You can use it to insert a content reference. In this case, the content reference uses the key to locate the topic to pull content from. It uses a `conkeyref` attribute: `<procedure conkeyref="feature.quick-heat/preheat-procedure" />`. In this example, `feature.quick-heat` is the key, and `preheat-procedure` is the ID of a procedure within the topic for that key. Using this mechanism, you could have multiple versions of the preheat procedure in various topics and control which one is inserted by changing the topic that is pointed to by the key.

Assigning Keys to Graphics

You can assign a key to an image (using a map to point to the image file) and insert the image using the key.

Related Information:

Defining Keys in DITA Maps on page 1486
Creating a DITA Content Key Reference on page 1543
Reuse Content Dialog Box on page 1545
DITA Reusable Components View on page 1558

Reusing DITA Content

Reusing content is one of the key features of DITA. DITA provides several methods for reusing content. Oxygen XML Editor plugin provides support for each of these methods.

Reusing Topics in DITA Maps

A DITA topic does not belong to any one publication. You add a DITA topic to a publication by referencing it in a map. You can reference the same topic in multiple maps.

Reusing Content with References and Keys

DITA allows you to reuse content by referencing it in another topic. DITA provides several mechanisms for including content by reference (`conref`, `conkeyref`, `coderef`). A `conref` creates a direct reference to a specific element of another topic. A `conkeyref` creates a reference to a key, which then points to a specific element in another topic. The advantage of using a `conkeyref` is that you can change the element that is included by changing the key reference. For example, since keys are defined in maps, if you include a topic in multiple maps, you can use a different key reference in each map. A `coderef` references an external file that contains literal code.

Oxygen XML Editor plugin provides support for all of these mechanisms.

While the `conref` and `conkeyref` mechanisms can be used to reference any content element, it is considered best practice to only *conref* or *conkeyref* content that is specifically set and managed as reusable content. This practice helps reduce expensive errors, such as an author accidentally deleting the source element that other topics are including by `conref`. Oxygen XML Editor plugin can help you create a reusable component from your current content.

Reusing Content with Reusable Components

DITA allows you to select content in a topic, create a reusable component from it and reference that component in other locations. Each reusable component is created as a separate file. Anytime the content needs to be edited, you only need to update it in the component file and all the locations in your topics that reference it will also be updated. This can help you to maintain continuity and accuracy throughout your documents.

Reusing Content with Variables

DITA allows you to replace the content of certain elements with a value that is pointed to by a key. This mechanism effectively means that you can create variables in your content, which you can then create multiple outputs by changing the value that the key points to. This is done by profiling the definition of the key value, or by substituting another map with a different key value.

Reusing Content with DITA 1.3 Concepts

DITA 1.3 allows you to use some advanced concepts to expand content reuse possibilities even further. *Key Scopes* (or scoped keys) allow you to reuse topics with variable content depending on the particular context and it maximizes reuse possibilities for keys. *Branch Filtering* allows you to reuse the same content that is profiled in multiple ways within the same publication, each time using a different filter.

Related Information:

Working with Keys on page 1538

Reusing DITA Topics in Multiple Maps

You can reuse an entire DITA topic simply by referencing it in multiple maps (or multiple locations within the same *map*) using one of the following procedures:

Reuse Topics Using the DITA Maps Manager

1. Make sure the *DITA map* is opened in the **DITA Maps Manager**.
2. Add a reference to an existing topic by using one of the following methods (depending on your particular situation):
   a. If the topic already exists in this *DITA map*, do one of the following:
      - Simply drag the topic and press **Ctrl** (or **Alt** on OS X) at the new location within the map (or use the **Copy** and **Paste** contextual menu actions).
      - If the topic is the currently opened document in the main editor, determine the new location in the map (in the **DITA Maps Manager**), right-click a parent or sibling topic, and select **Append Child** > **Reference to the currently edited file** or **Insert After** > **Reference to the currently edited file**.
   b. If the topic already exists in another *DITA map*, do one of the following:
      - Open the other map in the **DITA Maps Manager**, right-click the topic, select **Copy**, switch back to the original *DITA map* in the **DITA Maps Manager**, determine the new location in the map, right-click a parent or sibling topic, and use one of the **Paste** contextual menu actions (**Paste**, **Paste Before**, or **Paste After**).
      - If the topic is the currently opened document in the main editor, determine the new location in the map (in the **DITA Maps Manager**), right-click a parent or sibling topic, and select **Append Child** > **Reference to the currently edited file** or **Insert After** > **Reference to the currently edited file**.
   c. If the topic exists in the project, but has not yet been added to a *DITA map*, do one of the following:
      - Right-click the topic in the **Navigator** view (or the file system), select **Copy**, switch to the **DITA Maps Manager** view, determine the new location in the map, right-click a parent or sibling topic, and use one of the **Paste** contextual menu actions (**Paste**, **Paste Before**, or **Paste After**).
      - If the topic is the currently opened document in the main editor, determine the new location in the map (in the **DITA Maps Manager**), right-click a parent or sibling topic, and select **Append Child** > **Reference to the currently edited file** or **Insert After** > **Reference to the currently edited file**.
3. If your topic uses a key reference, set up the appropriate key definition in your map.
4. If you want to define relationships between topics, other than those defined in the topics themselves, you can add a relationship table to your map.
5. When you have finished adding topics, check that your map is complete and that all topic links and keys resolve correctly. To do this validation, click the **Validate and Check for Completeness** action on the toolbar in the **DITA Maps Manager**.

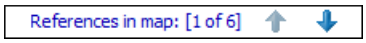
Reuse Topics Using Author Mode Editor

1. Open the *DITA map* in the **Author** mode editor.
2. Add a reference to an existing topic by dragging it from the **Navigator** view (or the file system) and dropping it in the desired location in the *DITA map* opened in **Author** mode. You can also accomplish the same thing by using the **Copy** and **Paste** contextual menu actions.

3. If your topic uses a key reference, set up the appropriate key definition in your map.
4. If you want to define relationships between topics, other than those defined in the topics themselves, you can add a relationship table to your map.
5. When you have finished adding topics, check that your map is complete and that all topic links and keys resolve correctly. To do this validation, click the **Validate and Check for Completeness** action on the toolbar in the **DITA Maps Manager**.

Displaying Multiple References to the Same Topics

Whenever multiple references to the same topic are detected in the context of the current map in the **DITA Maps Manager**, an indicator will appear in the top-right corner of the **Author** mode editor that shows the number of times the current topic is referenced in the *DITA map*. It also includes navigation arrows that allow you to jump to the next or previous reference in the **DITA Maps Manager**.



Working with Content References

The DITA `conref` feature (short for *content reference*) lets you insert a piece of source content by referencing it from its source. When you need to update that content, you only need to do it in one place.

There are several strategies for managing content references:

- *Reusable components* - With this strategy, you create a new file for each piece of content that you want to reuse and you insert references from the content of the reusable component files. For example, suppose that you have a disclaimer that needs to be included in certain sections of your documentation. You can create a reusable component that contains your disclaimer and reuse it as often as you need to. If the disclaimer ever needed to be updated, you only have to edit it in one file.
- *Single-source content references* - You may prefer to keep many pieces of reusable content in one file. For example, you might want to create a single file that contains all the actions that are available in various menus or toolbars for your software application. Then, wherever you need to describe or display an action in your documentation, you can reuse content from that single file by inserting content references. This strategy requires more setup than reusable components, but might make it easier to centrally managing the reused content and it allows for more flexibility in the XML structure of the reusable content.
- *Arbitrary content references* - Although it is not recommended, you can create content references amongst topics without storing the reusable content in components or a single file. This strategy might make it difficult to manage content that is reused and to maintain continuity and accuracy, since you may not have any indication that content you are editing is reused elsewhere.

Oxygen XML Editor plugin creates a reference to the external content by adding a `conref` attribute to an element in the local document. The `conref` attribute defines a link to the referenced content, made up of a path to the file and the topic ID within the file. The path may also reference a specific element ID within the topic. Referenced content is not physically copied to the referencing file. However, by default Oxygen XML Editor plugin displays it in **Author** mode as if it is there in the referencing file. If you do not want referenced content displayed, open the **Preferences** dialog box , go to **Editor** > **Edit modes** > **Author**, and deselect the **Display referenced content** option.

Note: A reference also displays *tracked changes* and comments that are included in the source fragment. To edit these comments (or accept/reject changes) right-click the comment or tracked change and select **Edit Reference**.

Tip: To search for references made through a direct content references, use the **Search References** action from the contextual menu.

Related Information:

Working with Reusable Components on page 1554
Working with Keys on page 1538
Working with the Conref Push Mechanism on page 1552
DITA Reusable Components View on page 1558

Creating a DITA Content Reference

DITA Content Reference

A DITA content reference, or `conref`, is one of the main content *reuse* features of DITA. It is a mechanism for re-using the same content in multiple topics (or even in multiple locations within the same topic).

For a `conref` to be created, the source content must have an `id` attribute that the `conref` can reference. Therefore, creating a `conref` requires that you add an `id` to the content to be reused before inserting a `conref` into the topic that reuses the referenced content.

Assigning an *ID* to the Referenced Content

To add an `id` to a DITA element in a topic, place the cursor on the element and select **Edit Attributes** from the contextual menu to open the in-place attribute editor. Enter `id` as the **Name** of the attribute and a value of your choice in the **Value** field. You can also use the **Attributes** view to enter a value in the **id** attribute.

Note: The element may already have an `id`, since in some cases Oxygen XML Editor plugin automatically generates an *ID* value when the `id` attribute is created.

Creating a Content Reference

To create a content reference (`conref`), follow these steps:

1. Make sure the element you want to reference has an *ID* assigned to it.
2. In **Author** mode, place the cursor at the location where you want the reused content to be inserted.
3. Select the **Reuse Content** action on the main toolbar (or from the **DITA** menu or **Reuse** submenu of the contextual menu). The **Reuse Content** dialog box is displayed.
4. In the **Location** field of the **Reuse Content** dialog box, select the topic that contains the element you want to reference. The elements that you can reference are presented in a table.
5. Select the **Target ID** of the element (or elements) from which you want to insert the content, and verify the content in the **Preview** pane. The `id` value of the element that you select is automatically added to the **Reference to (conref)** field.
6. Make any other selections you need in the **Reuse Content** dialog box. If you select multiple elements, the **Expand to (conrefend)** field is automatically filled with the `id` value of the last element in your selection.
7. Click **Insert** or **Insert and close** to create the content reference.

Using Copy/Paste Actions to Create a Content Reference

Oxygen XML Editor plugin also includes support for creating content references with simple copy/paste actions. The copied content must be an entire DITA XML element with an ID attribute. Also, the location in the document where you paste the element must be valid, although as long as the **Smart paste and drag and drop** option is selected in the **Schema Aware** preferences page, if you try to paste it in an invalid location, Oxygen XML Editor plugin will attempt to place it in a valid location, and may prompt you with one or more choices for where to place it.

To create a content reference (`conref`) using copy/paste actions, follow these steps:

1. Copy an entire DITA element that has an ID attribute assigned to it.
2. Place the cursor at a location where the copied element will be valid.
3. Select the **Paste as Content Reference** action from the **Paste Special** submenu from the contextual menu.

Other Ways to Reuse Content

- You can use the **Components** tab in the **DITA Reusable Components** view to easily insert content references.
- An alternate way to reuse content is to use the Oxygen XML Editor plugin **Create Reusable Component** and **Insert Reusable Component** actions (available in the **DITA** menu and the **Reuse** submenu of the contextual menu). They handle the details of creating an *ID* and *conref* and creates reusable component files, separate from your normal content files. This can help you manage your reusable content more effectively.

- You can also insert reusable content using content key references. This may also make reusable content easier to manage, depending on your particular situation and needs.
- Other topics in this section include information about more specialized or advanced ways or reusing content, such as *code references*, the *conref push mechanism*, *variable text*, *key scopes*, and *branch filtering*.

Related Information:

Reuse Content Dialog Box on page 1545
Working with Reusable Components on page 1554
Editing DITA Content References on page 1544
DITA Reusable Components View on page 1558
Creating a DITA Content Key Reference on page 1543

Creating a DITA Content Key Reference

DITA Content Key Reference

A DITA content key reference, or `conkeyref`, is a mechanism for inserting a piece of content from one topic into another. It is a version of the DITA content reference mechanism that uses keys to locate the content to reuse rather than direct references to topics that contain reused content.

As with a *conref*, a *conkeyref* requires that the element to be reused has an `id` attribute. It also requires the topic that contains the reusable content to be assigned a key in a map. As with all uses of keys, you can substitute multiple maps or use profiling to create multiple definitions of keys in a single map. This allows the same `conkeyref` to pull in content from various sources, depending on how your build is configured. This can make it easier to create and manage sophisticated content reuse scenarios.

Creating a Content Key Reference

To create a content key reference (`conkeyref`), follow these steps:

1. Make sure the topic that contains the reusable content is assigned a key in the *DITA map* and the element you want to reference has an *ID* assigned to it.
2. In **Author** mode, place the cursor at the location where you want the reused content to be inserted.
3. Select **Reuse Content** on the main toolbar (or from the **DITA** menu or **Reuse** submenu of the contextual menu). The **Reuse Content** dialog box is displayed.
4. Select the **Key** radio button for the content source and use the **Choose Key Reference** button to select the key for the topic that contains the reusable content (you can also select one from the drop-down list in the **Key** field). The elements that you can reference from the source are presented in the table in the middle of the **Reuse Content** dialog box.
5. Select the **Target ID** of the element (or elements) that you want to insert, and verify the content in the **Preview** pane. The `id` value of the element that you select is automatically added to the **Reference to (conkeyref)** field.
6. Make any other selections you need in the **Reuse Content** dialog box. If you select multiple elements, the **Expand to (conrefend)** field is automatically filled with the `id` value of the last element in your selection.
7. Click **Insert** or **Insert and close** to create the content reference.

Note: If you are using **Text** mode, when you insert a `conkeyref` attribute, after you enter the first quote (`conkeyref="`), the **Content Completion Assistant** will list all the defined keys that you can select from. Also, after you select the key, the **Content Completion Assistant** will then list the element IDs from the referenced topic, allowing you to insert an anchor. Note that this only works for local files.

Using Copy/Paste Actions to Create a Content Key Reference

Oxygen XML Editor plugin also includes support for creating content key references with simple copy/paste actions. When the DITA content is processed, the key references are resolved using key definitions from *DITA maps*. The copied content must be an entire DITA XML element with an ID attribute and the topic that contains the reusable content must have a key assigned in a *DITA map*. Also, the location in the document where you paste the element must be valid, although as long as the **Smart paste and drag and drop** option is selected in the **Schema Aware** preferences page, if you try to paste it in an invalid location, Oxygen XML Editor plugin will attempt to place it in a valid location, and may prompt you with one or more choices for where to place it.

To create a content key reference (`conkeyref`) using copy/paste actions, follow these steps:

1. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
2. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.
3. In a topic with an assigned key, copy an entire DITA element that has an ID attribute assigned to it.
4. Place the cursor at a location where the copied element will be valid.
5. Select the **Paste as Content Key Reference** action from the **Paste Special** submenu from the contextual menu.

Other Ways to Reuse Content

- You can use the **Components** tab in the **DITA Reusable Components** view to easily insert content key references.
- You can also insert reusable content using content references (*conref*).
- Other topics in this section include information about more specialized or advanced ways or reusing content, such as *code references*, the *conref push mechanism*, *variable text*, *key scopes*, and *branch filtering*.

Related Information:

Reuse Content Dialog Box on page 1545
Working with Reusable Components on page 1554
Editing DITA Content References on page 1544
DITA Reusable Components View on page 1558
Creating a DITA Content Reference on page 1542

Editing DITA Content References

Oxygen XML Editor plugin also includes some actions that allows you to quickly edit existing content references. When the element that contains a content reference (`conref` or `conkeyref`) is selected, the following actions are available in the **DITA** menu and the **Reuse** submenu of the contextual menu:

Edit Content Reference

This action is available for elements with a `conref` or `conkeyref` attribute. it opens the **Edit Content Reference** dialog box that allows you to edit the source location (or key) and source element of a content reference (or content key reference), and the reference details (`conref`/`conkeyref` and `conrefend` attributes). For more information, see Reuse Content Dialog Box on page 1545.

Replace Reference with content

Replaces the referenced fragment (`conref` or `conkeyref`) at the cursor position with its content. This action is useful if you want to make changes to the content in the currently edited document without changing the referenced fragment in its source location.

Remove Content Reference

Removes the content reference (`conref` or `conkeyref`) inside the element at the cursor position.

Converting Conrefs to Conkeyrefs

Oxygen XML Editor plugin includes a DITA refactoring operation called **Convert conrefs to conkeyrefs** that will find all *content references* (that reference content outside the current document) and convert them to *content key references*. You can also use it to quickly convert all *content references* in the current document or multiple documents at once.

To access the **Convert conrefs to conkeyrefs** operation, use one of the following methods:

Single Document Method

With the document opened in the editor, right-click anywhere in the main editing pane (or right-click the topic reference in the **DITA Maps Manager**), go to the **Refactoring** submenu, and choose **Convert conrefs to conkeyrefs**.

Multiple Documents At Once Method

Select **XML Refactoring** from the **XML Tools** menu (or from the **Refactoring** submenu when you right-click a document in the **Navigator** viewor the **DITA Maps Manager** view). Then select **Convert conrefs to conkeyrefs** from the **DITA** section and click **Next**.

Either method will proceed to the **XML Refactoring Wizard**. If you used the **Multiple Documents At Once Method**, the wizard page allows you to choose a scope for the operation and some filtering options:

- **Scope** - Select from a variety of options to define the scope for which resources will be affected by the operation. For example, you can choose to affect all resources in the **Project**, **All opened files**, **Current DITA map hierarchy**, or just the **Current file**.
- **Filters** section
  - **Include files** - Specifies files to be excluded from the operation. You can specify multiple files by separating them with commas and the patterns can include wildcards (such as ***** or **?**).
  - **Restrict to known XML file types only** - Excludes non-XML file types from the operation.

If you used the **Single Document Method**, the scope will be the current file so the scope and filtering options are not displayed.

You can then use one of the following buttons to proceed with the operation:

Preview

You can use the **Preview** button to open a comparison panel where you can review all the changes that will be made by the refactoring operation before applying the changes.

Warning: It is always recommended to use the **Preview** button to make sure the operation is not going to do something unexpected and after you click the **Finish** button, any **Undo** action will only revert changes on the current document.

Finish

When you use the **Finish** button, the operation will be processed and all *content references* will be converted to *content key references* (either all *content references* in the current document or all *content references* in all of the documents specified in the scope). The file name for each converted document is used as the value for its new key. However, the operation does NOT automatically add the key to the *DITA Map*, so you still need to manually define each key in your *DITA map*.

Related Information:

Creating a DITA Content Reference on page 1542
Creating a DITA Content Key Reference on page 1543
Defining Keys in DITA Maps on page 1486

Reuse Content Dialog Box

The **Reuse Content** dialog box provides a mechanism for reusing content fragments. DITA `conref`, `conkeyref`, and `keyref` attributes can be used to insert references to reusable content. The `conref` attribute stores a reference to another element and is processed to replace the referencing element with the referenced element. The `conkeyref` attribute uses keys to locate the content to reuse rather than direct references to the topic that contains the reusable content. The `keyref` attribute also uses keys and can be used to indirectly reference metadata that may have different values in various circumstances.

Note: For a `conref` or `conkeyref`, to reference the content inside a DITA element, the source element must have an `id` attribute assigned to it. The element containing the content reference acts as a placeholder for the referenced element. For more details about DITA `conref` and `conkeyref` attributes, go to https://www.oxygenxml.com/dita/1.3/specs/archSpec/base/conref.html.

Note: For the purposes of using a `keyref`, keys are defined at map level and referenced afterwards. For more information about the DITA `keyref` attribute, go to https://www.oxygenxml.com/dita/1.3/specs/langRef/attributes/thekeyrefattribute.html.

Oxygen XML Editor plugin displays the referenced content of a DITA content reference if it can resolve it to a valid resource. If you use URIs instead of local paths in your XML documents and your DITA OT transformation needs

an *XML Catalog* to map the URIs to local paths, you need to add the catalog to Oxygen XML Editor plugin. If the URIs can be resolved, the referenced content is displayed in **Author** mode and in the transformation output.

In **Author** mode, a references to reusable content (`conref`, `conkeyref`, or `keyref`) can easily be inserted at the cursor position by using the **Reuse Content** dialog box. It can be opened with any of the following methods:

- Go to **DITA** > **Reuse Content**.
- Click the **Reuse Content** action on the main toolbar.
- In the contextual menu of the editing area, go to **Reuse** > **Reuse Content**.

Your selection at the top of the dialog box for choosing the content source determines whether Oxygen XML Editor plugin will insert a `conref`, `conkeyref`, or `keyref`.

If you select **Location** for the content source, a *content reference* (`conref`) will be inserted. If you select **Key** for the content source, keys will be used to insert a *content key reference* (`conkeyref`) or a *key reference* (`keyref`).

Content Reference (`conref`) Options Using the Reuse Content Dialog Box

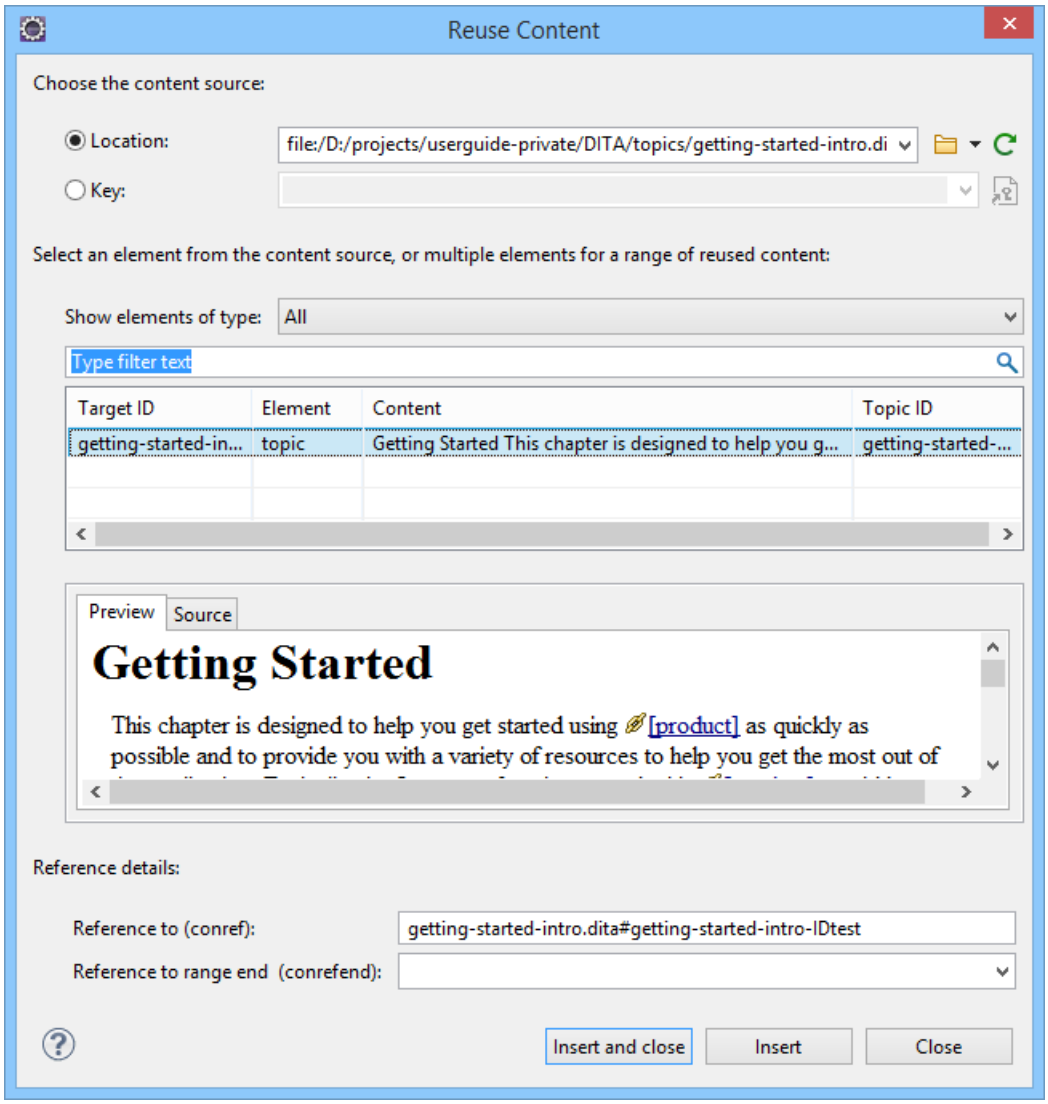


Figure 741: Reuse Content Dialog Box (with the Default Insert Content Reference Options Displayed)

Choose the content source Section

When **Location** is selected for the content source, a *content reference* (`conref`) will be inserted. Here you can specify the path of the topic that contains the content you want to reference.

The dialog box offers the following options:

Select an element from the content source Section

Show elements of type

You can use this drop-down list to select specific types of elements to be displayed in the subsequent table. This can help you narrow down the list of possible source elements that you can select.

Text Filter Field

You can also use the text filter field to narrow down the list of possible source elements to be displayed in the subsequent table.

Element Table

Presents all the element IDs defined in the source topic. Use this table to select the **Target ID** of the element that you want to reference. You can select multiple contiguous elements to reference a block of content.

Preview Pane

Displays the content that will be references. If you select multiple elements in the element table, the content from all the selected elements is displayed.

Source Pane

Displays the source code of the element to be referenced.

Reference details Section

Reference to (conref)

Oxygen XML Editor plugin automatically fills this text field with the value of the `conref` attribute to be inserted. However, you can edit this value if need be.

Reference to range end (conrefend)

If you select multiple elements (of the same type) in the element table, Oxygen XML Editor plugin automatically fills this text field with the `id` value of the last element in your selection. This value will be inserted as a `conrefend` attribute, defining the end of the `conref` range.

Content Key Reference (`conkeyref`) Options Using the Reuse Content Dialog Box

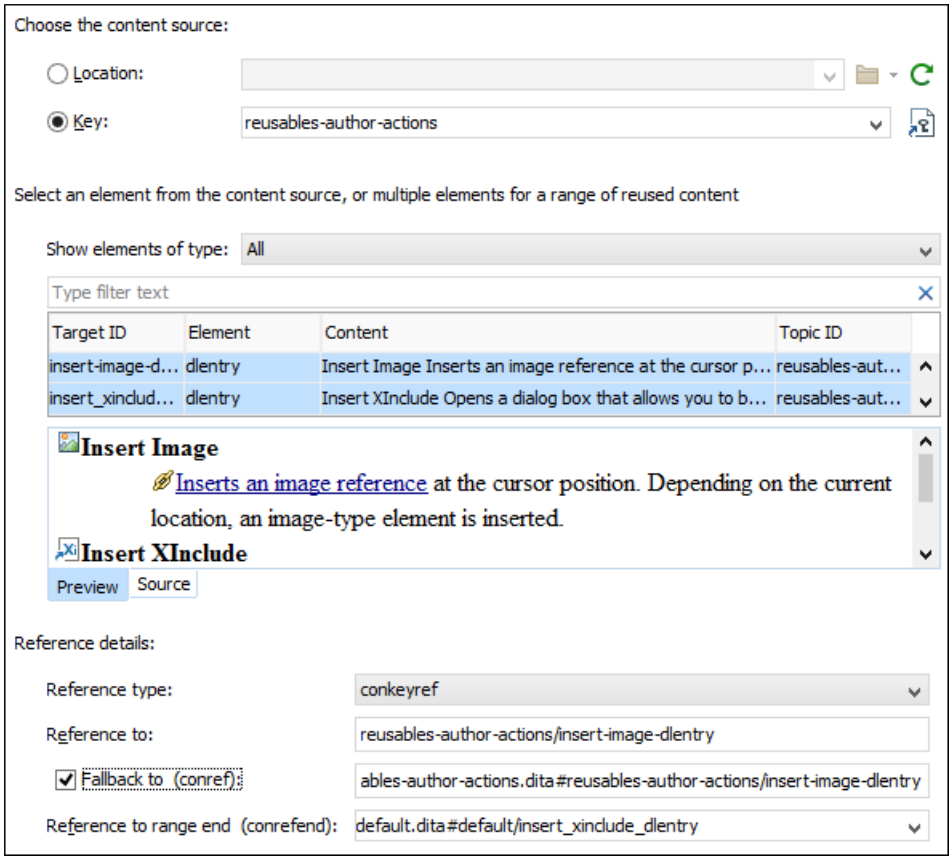


Figure 742: Insert Content Key Reference Options

Choose the content source Section

When **Key** is selected for the content source, you can use keys to reference content. You can use the **Choose Key Reference** button to open the **Choose Key** dialog box that allows you to select one from a list of all the keys that are gathered from the *root map* (you can also select one from the drop-down list in the **Key** field).

Note: If the current *DITA map* is not selected as the *root map*, no keys will be listed.

Tip: You can also use the **DITA Reusable Components** view for similar purposes.

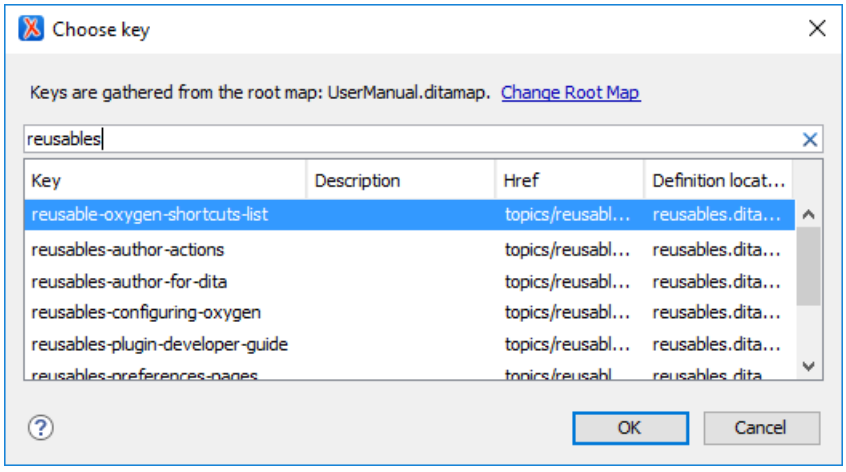


Figure 743: Choose Key Dialog Box

The **Choose Key** dialog box includes the following:

- **Change Root Map** - Opens a small dialog box that allows you to select a *root map*.

- **Search Filter** - You can enter text in the filter field at the top of the dialog box to filter the list and search for a specific keys.
- **Sortable Columns** - The dialog box includes the following columns that can be sorted by clicking on the heading:
  - **Key** - The name of the key.
  - **Description** - The description of the key that is obtained from the definition of the key (for example, the description for a *keydef* would be found in the `keyword` element inside *topicmeta*, or the description for a *topicref* would be found in a `navitle` element). For more information about where the data in this column is collected, see this note.
  - **Href** - The value of the *href* where the key points to.
  - **Definition Location** - The name of the *DITA map* where the key is defined.
- **Group by Definition Location** - A contextual menu action that can be used to group (and sort) all the keys based upon the value in the **Definition Location** column.

To insert a *content key reference* (`conkeyref`), select the key that contains the content you want to reference. Notice that the file path is shown in the **Href** column. Keys that do not have a value in the **Href** column are for referencing metadata with a `keyref` attribute. Therefore, to insert a `conkeyref`, you need to select a key that does have a value (file path) in the **Href** column.

After you select a key, click **OK** to return to the **Reuse Content** dialog box.

When a key that is defined as a *content key reference* has been selected, the **Reuse Content** dialog box offers the following additional options for inserting a `conkeyref`:

Select an element from the content source Section

Show elements of type

You can use this drop-down list to select specific types of elements to be displayed in the subsequent table. This can help you narrow down the list of possible source elements that you can select.

Text Filter Field

You can also use the text filter field to narrow down the list of possible source elements to be displayed in the subsequent table.

Element Table

Presents all the element IDs defined in the source topic. Use this table to select the **Target ID** of the element that you want to reference. You can select multiple contiguous elements to reference a block of content.

Preview Pane

Displays the content that will be references. If you select multiple elements in the element table, the content from all the selected elements is displayed.

Source Pane

Displays the source code of the element to be referenced.

Reference details Section

Reference type

The type of reference that will be inserted. If you selected a key that references a DITA resource, you will notice that **conkeyref** value is automatically selected.

Reference to

Oxygen XML Editor plugin automatically fills this text field with the value of the `conkeyref` attribute to be inserted. However, you can edit this value if need be.

Fallback to (conref)

You can select this option to define a `conref` attribute to be used as a fallback to determine the content reference relationship if the specified `conkeyref` cannot be resolved.

Reference to range end (conrefend)

If you select multiple elements (of the same type) in the element table, Oxygen XML Editor plugin automatically fills this text field with the `id` value of the last element in your selection. This value will be inserted as a `conrefend` attribute, defining the end of the `conkeyref` range.

Key Reference to Metadata (`keyref`) Options Using the Reuse Content Dialog Box

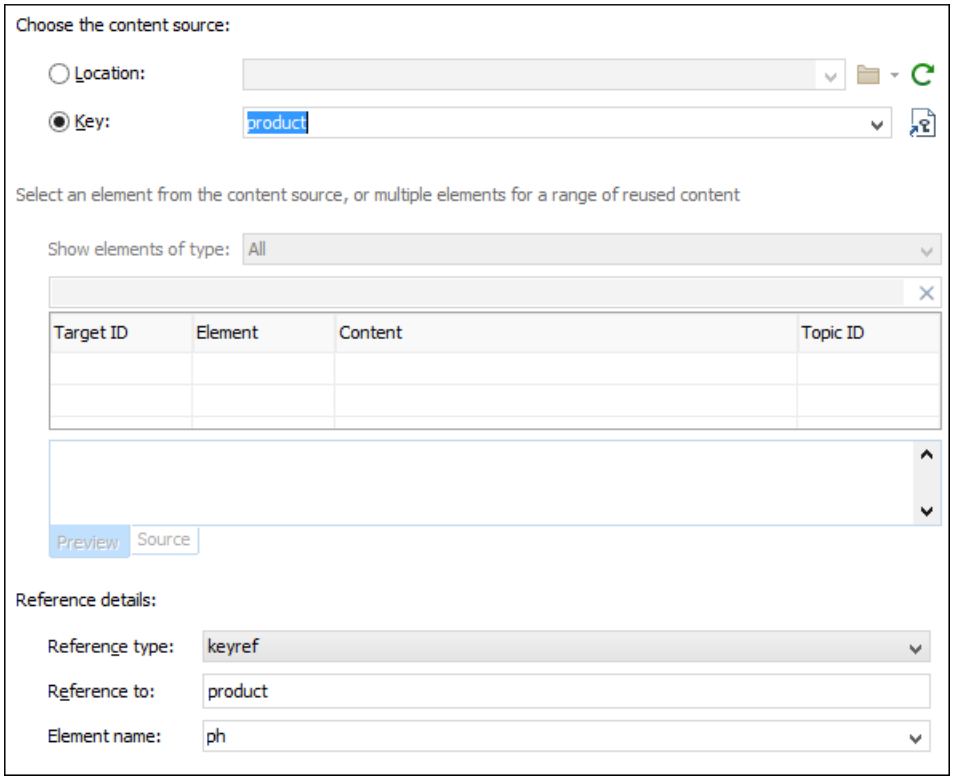


Figure 744: Insert Key Reference Options

Choose the content source Section

When **Key** is selected for the content source, you can use keys to reference content. You can use the **Choose Key Reference** button to open the **Choose Key** dialog box that allows you to select one from a list of all the keys that are gathered from the *root map* (you can also select one from the drop-down list in the **Key** field).

Note: If the current *DITA map* is not selected as the *root map*, no keys will be listed.

Tip: You can also use the **DITA Reusable Components** view for similar purposes.

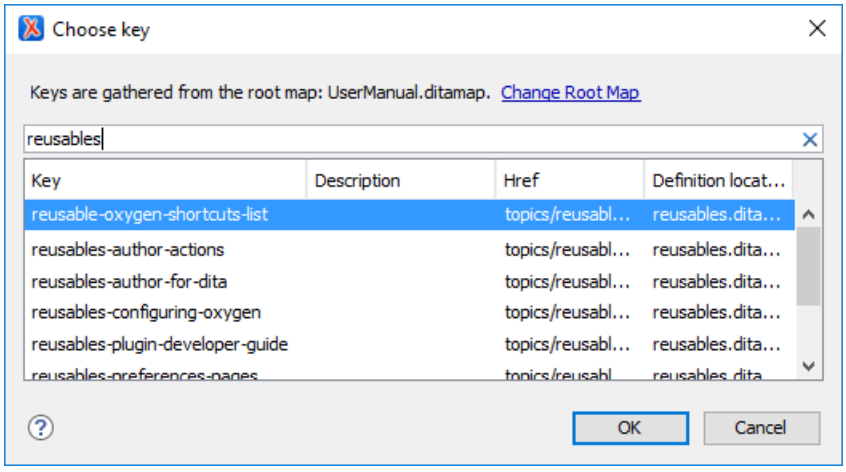


Figure 745: Choose Key Dialog Box

The **Choose Key** dialog box includes the following:

- **Change Root Map** - Opens a small dialog box that allows you to select a *root map*.
- **Search Filter** - You can enter text in the filter field at the top of the dialog box to filter the list and search for a specific keys.
- **Sortable Columns** - The dialog box includes the following columns that can be sorted by clicking on the heading:
  - **Key** - The name of the key.
  - **Description** - The description of the key that is obtained from the definition of the key (for example, the description for a *keydef* would be found in the `keyword` element inside *topicmeta*, or the description for a *topicref* would be found in a `navitle` element). For more information about where the data in this column is collected, see this note.
  - **Href** - The value of the *href* where the key points to.
  - **Definition Location** - The name of the *DITA map* where the key is defined.
- **Group by Definition Location** - A contextual menu action that can be used to group (and sort) all the keys based upon the value in the **Definition Location** column.

To insert a *key reference* to metadata (`keyref`), select the key you want to reference. Keys that do not have a value in the **Href** column are for referencing metadata with a `keyref` attribute. Therefore, to insert a `keyref`, you need to select a key that does not have a value (file path) in the **Href** column.

After you select a key, click **OK** to return to the **Reuse Content** dialog box.

When a key that references metadata has been selected, the **Reuse Content** dialog box offers the following additional options for inserting a `keyref`:

Select an element from the content source Section

This section is not used when referencing metadata.

Reference details Section

Reference type

The type of reference that will be inserted. If you selected a key that does not reference a DITA resource, you will notice that **keyref** value is automatically selected.

Reference to

Oxygen XML Editor plugin automatically fills this text field with the value of the `keyref` attribute to be inserted.

Element name

Oxygen XML Editor plugin automatically selects the element that is most commonly used for the selected type of key reference, but you can use the drop-down list to choose another element to use for the reference.

Finalizing Your Content Reference Configuration

Once you click **Insert** or **Insert and close**, the configured content reference is inserted into your document.

Tip: You can easily insert multiple content references by keeping the **Reuse Content** dialog box opened, using the **Insert** button.

Working with Code References

Code References

The DITA `coderef` element can be used to reference an external file that contains literal code. This is especially useful if you need to reference code from an external source that may occasionally change. Another advantage is that you don't have to convert illegal characters into their character equivalents. When the `coderef` is processed, the referenced code file is imported and delimiting characters (such as < or &) are displayed as standard text, rather than treated as XML markup.

For more information about code references, see DITA 1.3 Specification: Coderef.

Example of using a Coderef

```
<p>This code is an example of how to use a coderef.</p>
  <codeblock><coderef href="MyExternalCode.xsl"/></codeblock>
```

Defining Line Ranges

DITA-OT provides additional code reference processing support that allows you to define line ranges in case you only want to reference certain parts of the external file, rather than the whole file.

For information and examples of how to define line ranges, see DITA Open Toolkit Documentation: Extended Code Reference Processing.

Working with the Conref Push Mechanism

Content Reference Push Mechanism

The usual method of using content references pulls element content from a source element and inserts it in the current topic. DITA 1.2 introduced an alternative method of content referencing, allowing element content to be pushed, or injected, from a source topic to another topic without any special coding in the topic where the content will be re-used. This technique is known as a content reference *push* mechanism (*conref push*).

The *conref push* mechanism requires elements in the target topic (the topic where the content is to be pushed) to have ID elements, as the push mechanism inserts elements *before* or *after* a named element, or *replaces* the named element. Assuming the source topic is included in the *DITA map*, the *conref push* will be processed during publishing stage for the *DITA map*.

Example of a Conref Push Scenario

An example of a scenario in which a *conref push* would be useful is where a car manufacturer produces driver manuals that are distributed to various regions with their own specific regulations and certain sections need to be customized by the local car dealers before publishing. The local dealer could use a *conref push* technique to insert specific content without modifying the manufacturer-supplied content.

Push Current Element Action

Oxygen XML Editor plugin includes an action that allows you to easily reference content with a *conref push* mechanism. The **Push Current Element** action is available in the **DITA** menu and in the **Reuse** subfolder of the contextual menu when editing in **Author** mode. Selecting this action opens the **Push current element** dialog box that allows you to select a target resource and element, and where to insert the current element content.

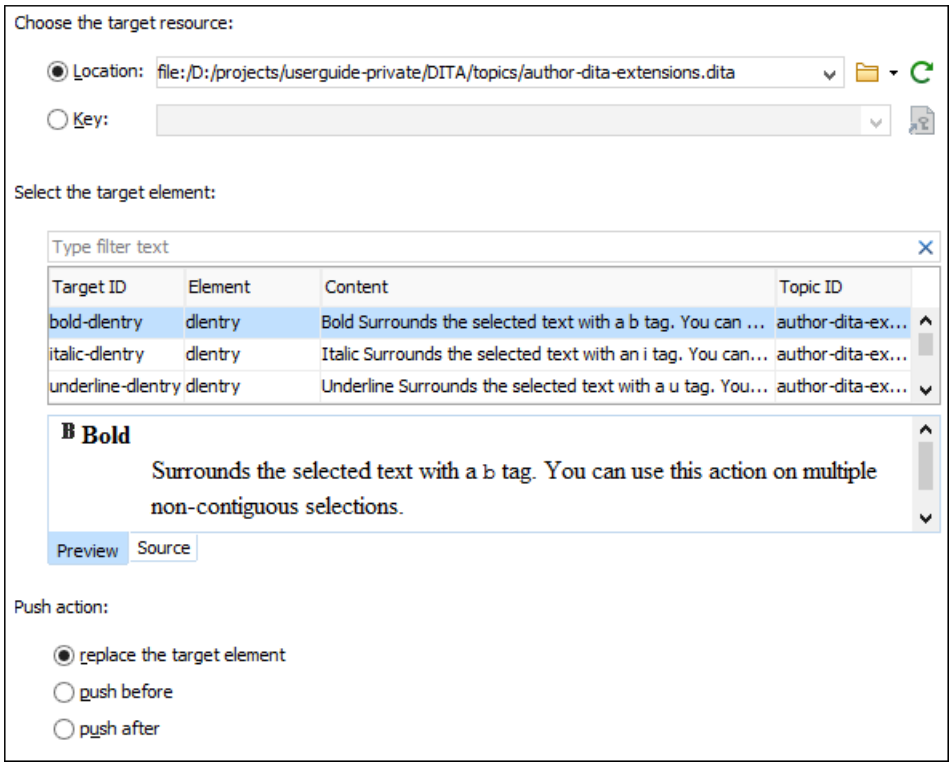


Figure 746: Push Current Element Dialog Box

This dialog box allows you to configure the following options for the *conref push* action:

Choose the target resource

Allows you to select a **Location** URL or a **Key** for the target resource and the table in the next section of the dialog box will be populated using the information from the specified resource.

Select the target element

The table in this section contains the available elements (identified by their ID) that belong to the same class as the current element on which the action was invoked.

Push action

Allows you to choose one of the following options for where you want to insert the current element content:

replace the target element

The target element will be replaced with the current element content.

On the technical side, the value of the `conaction` attribute in the current element will be set to `pushreplace` and the `conref` or `conkeyref` attribute will be set to the specified reference.

push before

The current element content will be inserted before the specified target element in the target resource.

On the technical side, the value of the `conaction` attribute in the current element will be set to `pushbefore`. Another element with the same name and class as the target element will be inserted in the document after the current element. The new element will have the `conaction` attribute set to `mark` and the `conref` or `conkeyref` attribute will be set to the specified reference.

push after

The current element content will be inserted after the specified target element in the target resource.

On the technical side, the value of the `conaction` attribute in the current element will be set to `pushafter`. Another element with the same name and class as the target element will be inserted in the document before the current element. The new element will have the `conaction` attribute set to `mark` and the `conref` or `conkeyref` attribute will be set to the specified reference.

You can also use the **Preview** panel to view the content that will be pushed and the **Source** panel to see the XML code for the content to be pushed. After you click **OK**, the *conref push* mechanism is inserted in the current document. The changes in the target resource will be processed when you transform the *DITA map*.

Related Information:

For more technical details about the conref push mechanism, refer to "The Conref Push Technique" section of The DITA Style Guide Best Practices for Authors.

Working with Reusable Components

In DITA, the content of almost any element can be made reusable simply by adding an `id` attribute to the element. The DITA content reference mechanism can reuse any element with an *ID*. However, it is not considered best practice to arbitrarily reuse pieces of text from random topics due to the difficulties this creates in trying to manage it. It also creates the possibility of authors deleting or changing content that is reused in other topics without being aware that the content is reused.

To prevent these types of problems, you can create reusable components to manage a separate set of topics that contain topics designed specifically for reuse. Then, all of your reusable content can be referenced from the reusable components and if the content needs to be updated you only need to edit it in one place.

Oxygen XML Editor plugin allows you to select content in a topic, create a reusable component from it and reference that component in other locations by using the **Create Reusable Component** and **Insert Reusable Component** actions.

Related Information:

DITA Reusable Components View on page 1558

Creating a Reusable Content Component

Oxygen XML Editor plugin makes it easy to create reusable content components from existing topic content.

Note: To ensure that the topic file that contains the reusable component is a valid container for just the reusable content component, without having to include the other elements required by a standard topic type, Oxygen XML Editor plugin creates a specialized topic type on the fly. This specialization is designed to make sure that the content is compatible with the topic type from which it is created.

Follow these steps to create a reusable component:

1. In **Author** mode, select the content you want to make into a reusable component.
2. Select the **Create Reusable Component** action that is available in the **DITA** menu or the **Reuse** submenu of the contextual menu.
   The **Create Reusable Component** dialog box is displayed.
3. Use the **Reuse Content** drop-down list to select the scope of the content to be made reusable. It allows you to select how much of the current content you want to make reusable. The choices presented include the element at the current cursor position and its ancestor elements.
4. Add a description. This becomes the title of the topic that contains the reusable component, but is not part of the reusable content. It is just to help you identify the reusable content and will not become part of your output.
5. If you want to replace the extracted content with a reference to the new component you should leave the **Replace selection with content reference** option selected. This is recommended, since the point of reuse is to maintain only one copy of the content.
6. Select a file name and location to save the topic containing the reusable component and click **Save**. It is considered best practice to save or store reusable components in an area set aside for that purpose.
   If the **Replace selection with content reference** option was selected, Oxygen XML Editor plugin replaces the current content with a `conref` attribute. The content of the content reference will be displayed in your current topic with a gray background, but it will no longer be editable since it is stored in a separate file. To edit the source of the reusable component, click the **Edit Content** icon at the beginning of the inserted content.

You now have a reusable component that you can include in other topics by using the **Insert Reusable Component** action that is available in the **DITA** menu or the **Reuse** submenu of the contextual menu. You can also reference this new reusable component by using a content reference or content key reference.

Inserting a Reusable Content Component

Oxygen XML Editor plugin includes an **Insert Reusable Content** action that allows you to easily insert a reusable content component that you created using the **Create Reusable Component** action.

CAUTION: This action is only designed to insert reusable components created using the Oxygen XML Editor plugin **Create Reusable Component** action. It assumes certain things about the structure of the reusable content file that may not be true of reusable content created by other methods and it may not provide the expected results if used with content that does not have the same structure.

The **Insert Reusable Content** action creates a DITA `conref` to insert the content, and creates a parent element for the `conref` attribute based on the type of the reusable element in the reusable component file. This action ensures that the correct element is used to create the `conref`. However, that element must still be inserted at a point in the current topic where that element type is permitted.

To insert a reusable component that was created using the **Create Reusable Component** action, follow these steps:

1. Place the cursor at the insertion point where you want the reusable component to be inserted.
2. Select the **Insert Reusable Component** action that is available in the **DITA** menu or the **Reuse** submenu of the contextual menu.
   The **Insert Reusable Component** dialog box is displayed.
3. Locate the reusable content file in which you want to insert its content.
4. If you select **Content reference** in the **Insert as** drop-down list, the action will add a `conref` attribute to the DITA element at the current location. If you select **Copy** in the drop-down list, the content of the reusable component file will simply be pasted at the current location (assuming the content is valid at the current location).
5. Click **Insert** to perform the action.

Working with Variable Text in DITA

You may often find that you want a certain piece of text in a topic to have a different value in various circumstances. For example, if you are reusing a topic about a feature that is shared between several products, you might want to make the name of the product variable so that the correct product name is used in the manual for each product.

For example, you might have a sentence like this:

```
The quick-heat feature allows [product-name] to come up to temperature quickly.
```

You need a way to substitute the correct product name for each product.

One way to do this would be to use conditional profiling, as in the following example:

```
<p>The quick-heat feature allows
    <ph product="basic">Basic Widget</ph>
    <ph product="pro">Pro Widget</ph>
to come up to temperature quickly.</p>
```

Creating Variable Text Using Keys

In DITA, you can create variable text using keys.

One way to do this would be to provide conditional values using the `product` profiling attribute.

However, this approach means that you are repeating the product names over and over again everywhere the product name is mentioned. This is time consuming for authors and will create a maintenance problem if the product names change.

Creating Variable Content Using a Key Reference

The alternative is to use a key reference, as in the following example:

```
<p>The quick-heat feature allows <ph keyref="product"/>
   to come up to temperature quickly.</p>
```

The definition of the key reference determines the name of the product:

```
<keydef keys="product" product="basic">
    <topicmeta>
      <keywords>
        <keyword>Basic Widget</keyword>
      </keywords>
    </topicmeta>
  </keydef>
  <keydef keys="product" product="pro">
    <topicmeta>
      <keywords>
        <keyword>Pro Widget</keyword>
      </keywords>
    </topicmeta>
  </keydef>
```

When the content is published, the current value of the key `product` will be inserted.

Inserting a Keyref

To insert a key reference into a document in Oxygen XML Editor plugin **Author** mode, use one of the following methods:

- **DITA Reusable Components View Method**

  Use the **DITA Reusable Components** view to insert a *variable reference* to the defined key.
- **Code Template Method**

  Add the source code pattern of the defined key to a code template so that it appears in the list of proposals in the *Content Completion Assistant*.
- **Edit Attributes Method**

  Manually insert the `keyref` attribute using the attributes editor as follows:

  1. Press **Enter** and select any DITA element that supports the `keyref` attribute.
  2. Select **Edit Attributes** from the contextual menu to bring up the attributes editor.
  3. In the **Name** field, select `keyref`.
  4. In the **Value** field, select or enter the name of the defined key.
- **Text Mode Method**

  If you are using **Text** mode, when you insert a `keyref` attribute, after you enter the first quote (`keyref="`), the **Content Completion Assistant** will list all the defined keys that you can select from. Note that this only works for local files.

Related Information:

DITA Reusable Components View on page 1558
Defining Keys in DITA Maps on page 1486

Working with DITA 1.3 Key Scopes

DITA 1.3 includes the possibility of using a concept called *Key Scopes* (or scoped keys). It allows you to reuse a topic in multiple places within the same *DITA map*, but with slightly different content in each instance.

Key Scopes Use-Case

Suppose that you develop a software product and you have a topic in your user guide that explains how to install your product on a Windows operating system. Suppose that the steps are exactly the same for installing it on Linux and the only difference is the name of the operating system. Therefore, it would be helpful if you could reuse the exact same content in two different topics, but with the name of the operating system different in each instance. In DITA 1.2, this is not possible since keys can only be resolved to a single value. However, with the DITA 1.3 *Key Scopes* mechanism, you can define multiple values for the same key depending on the context.

How to Use Key Scopes in Oxygen XML Editor plugin

To use DITA 1.3 key scopes in Oxygen XML Editor plugin, follow these steps:

1. Define the keys to be used in multiple places within your *DITA map*.

2. For each particular topic that contains the keys, define the key scopes:
   a. Right-click the topic in the **DITA Maps Manager** and select **Edit properties**.
   b. In the **Keys** tab, enter a value (or multiple values) in the **Key scopes** field.

      Tip: If you do not see the **Key scopes** field, make sure the support for DITA 1.3 (DITA-OT 2.x) is enabled in the DITA preferences page.
   c. Click **OK** to save your changes.
3. Save the *DITA map*.

   Result: In the **DITA Maps Manager**, you can now see the key scopes in brackets and when you open each topic reference.

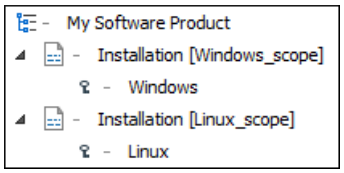


Figure 747: Key Scopes in DITA Maps Manager

The content will also be expanded in **Author** mode according to the context of the key scope you defined for that particular topic. Also, when you transform the *DITA map*, the scoped keys will be reflected in the published content.

Resources

- You can find a more detailed example and download samples for reuse possibilities based on key scopes in the *DITA 1.3 Key Scopes - Next Generation of Reuse* blog post.
- You can also watch our DITA 1.3 video tutorial to see how key scopes can be used in Oxygen XML Editor plugin.

Related Information:

Working with DITA 1.3 Branch Filtering on page 1557
Oxygen XML Blog: DITA 1.3 Key Scopes - Next Generation of Reuse
Oxygen Video Tutorial: DITA 1.3 (Key Scopes, Branch Filtering)

Working with DITA 1.3 Branch Filtering

DITA 1.3 allows you to use a mechanism called *Branch Filtering* that enables you to set filtering conditions for specific branches of a *DITA map*. This makes it possible for multiple conditional profiles to be applied within a single publication, each time with a different filter.

Branch Filtering Use-Case

Suppose that you sell two models of a mobile phone and you need to create a brochure for each model. You want both brochures to have the same structure and most of the content is the same for both brochures. The only differences are in the values for certain details (for example, the model name, size dimensions, battery life, etc.) Therefore, it would be helpful if you could use the same topic and reference it twice in the same map, with each reference using different filtering conditions. In DITA 1.2, this is not possible since you can only apply one DITAVAL filter to a map. However, with the DITA 1.3 *Branch Filtering* mechanism, you can reuse content multiple times within the same map, each time using different filters.

How to Use Branch Filtering in Oxygen XML Editor plugin

To use DITA 1.3 branch filtering in Oxygen XML Editor plugin, follow these steps:

1. The support for DITA 1.3 must be enabled in the DITA preferences page.
2. Assuming you have already defined your profiling attributes, create a DITAVAL filter file.
3. Insert a reference to the DITAVAL filter file in the *DITA map*:

a. Right-click the *DITA map* reference in the **DITA Maps Manager** and select **Append Child** > **DITAVAL Reference**.

   Tip: If you do not see the **DITAVAL Reference** option, make sure the support for DITA 1.3 (DITA-OT 2.x) is enabled in the DITA preferences page.

b. Select the DITAVAL file.

c. Click **Insert and Close**.

4. Save the *DITA map*.

   Result: You can now see the **ditaval** files referenced in the **DITA Maps Manager** and when you transform the *DITA map*, filtered content will be reflected in the published output.

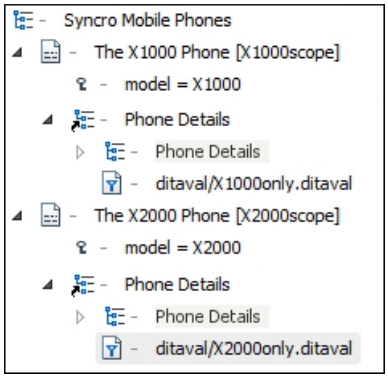


Figure 748: Branch Filtering in DITA Maps Manager

Resources

- You can find a more detailed example and download samples for reuse possibilities based on key scopes in the *DITA 1.3 Branch Filtering - Next Generation of Reuse* blog post.
- You can also watch our DITA 1.3 video tutorial to see how branch filtering can be used in Oxygen XML Editor plugin.

Related Information:

Working with DITA 1.3 Key Scopes on page 1556

Oxygen XML Blog: DITA 1.3 Branch Filtering - Next Generation of Reuse

Oxygen Video Tutorial: DITA 1.3 (Key Scopes, Branch Filtering)

DITA Reusable Components View

The **DITA Reusable Components** view is helpful if you use a large amount of keys or reusable components in your DITA project. It collects all of the keys and reusable components that are defined in the *root map* and presents them in a dynamic table where you can easily locate and insert references to them. If the view is not displayed, it can be opened by selecting it from **Window** > **Show View** > **Other**. It will appear in the bottom-right section of the editor. It re-collects the keys anytime the *root map* is changed or you switch the editor focus to a different file.

It includes two tabs:

- **Keys** - Displays all the *keys* that are defined in the *root map* and provides ways to easily insert references to them as cross reference links, key references, or variables. It includes a search filter field to help you find particular keys and some contextual menu actions. It also supports drag and drop actions and double-clicking a key is the fastest way to insert a reference.
- **Components** - Displays all the topics (from the *root map*) that contain *reusable components* and provides ways to easily insert them as content references or content key references. To determine which topics to display in this tab, Oxygen XML Editor plugin looks for any *topicref* in the *root map* that is marked as *resource-only*. This tab includes a search field, some filtering options, and some simple links and contextual menu actions to quickly insert references or open their source file. It also supports drag and drop and double-clicking actions.

Keys Tab

The **DITA Reusable Components** view collects all the *keys* that are defined in the current *root map* and displays them in the **Keys** tab. Keys that are defined with a value have that value listed in the **Description** column while keys that are defined with an *href* pointing to their location have that href value listed in the **Href** column.

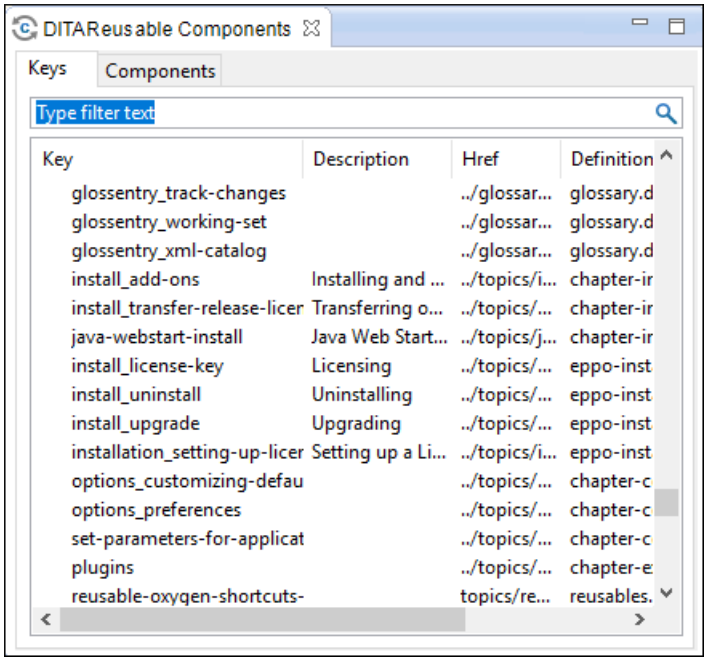


Figure 749: DITA Reusable Components View - Keys Tab

The **Keys** tab includes the following features and options:

Search Filter

You can enter text in the filter field at the top of this tab to filter the list and search for a specific keys.

Columns

This tab includes the following columns:

- **Key** - The name of the key.
- **Description** - The description of the key that is obtained from the definition of the key (for example, the description for a *keydef* would be found in the `keyword` element inside *topicmeta*, or the description for a *topicref* would be found in a `navitle` element). For more information about where the data in this column is collected, see this note.
- **Href** - The value of the *href* where the key points to.
- **Definition Location** - The name of the *DITA map* where the key is defined.

Note: The **Description** column collects data from the definition of the key, either from the `navtitle` element or, if missing, from the `keyword` element. The following example shows two key definitions that will be collected in the keys table. Their corresponding information from the **Description** column will display `oxygen.sh` and `oxygen.tar.gz` respectively.

```
<keydef keys="executableInstallLinux">
  <topicmeta>
    <keywords>
      <keyword>oxygen.sh</keyword>
    </keywords>
  </topicmeta>
</keydef>

<keydef keys="archiveInstallAll">
  <topicmeta>
    <navtitle>
      oxygen.tar.gz
    </navtitle>
  </topicmeta>
</keydef>
```

Double-Click Mechanism

You can double-click any key listed in this tab to insert a key reference at the current cursor position or surrounding the current selection.

- If the selected key points to an `href` value, it is inserted as a cross reference link (*xref*).
- If the selected key is a reference to an image, it is inserted as an `image` element.
- If the selected key does not have an associated `href`, it is inserted as a variable reference (*ph*).

Drag and Drop Mechanism

You can drag a key from this tab and drop it in the main editor to insert a key reference at the current cursor position.

- If the selected key points to an `href` value, it is inserted as a cross reference link (*xref*).
- If the selected key is a reference to an image, it is inserted as an `image` element.
- If the selected key does not have an associated `href`, it is inserted as a variable reference (*ph*).

Contextual Menu Actions

Insert as Link

Inserts a cross reference link (*xref*) to the selected key at the current cursor position or surrounding the current selection.

Insert as Variable

Inserts a variable reference (*ph*) to the selected key at the current cursor position or surrounding the current selection. However, if the selected key is a reference to an image, this action inserts the key reference in an `image` element.

Insert as Keyref

Presents a submenu with all the elements that can be inserted at the current cursor position. Selecting an element will insert that element at the current cursor position or surrounding the current selection with a `keyref` attribute and its value set to the selected key.

Go to Definition

Opens the *DITA map* where the key is defined.

Search References

Searches for all references to the selected key in the entire *DITA map* structure.

Group by Definition Location

A toggle action that can be used to group (and sort) all the keys based upon the value in the **Definition Location** column.

Components Tab

The **DITA Reusable Components** view collects all the topics from the current *root map* that are marked as *resource-only*, then collects the reusable components from those topics, and displays them in the **Components** tab. To set a topic as *resource-only*, the `topicref` in the DITA map file needs to have a `processing-role` attribute set like this:

```
<topicref href="topics/randomize-xml-content.dita" processing-role="resource-only"/>
```

The **DITA Reusable Components** view considers topic references that contain `processing-role="resource-only"` to be candidates to contain reusable components. The reusable components inside these topics are collected from all elements that have an *ID* specified. These reusable components are displayed in the **Components** tab along with the file name and the specific names of the elements that contain an *ID* attribute.

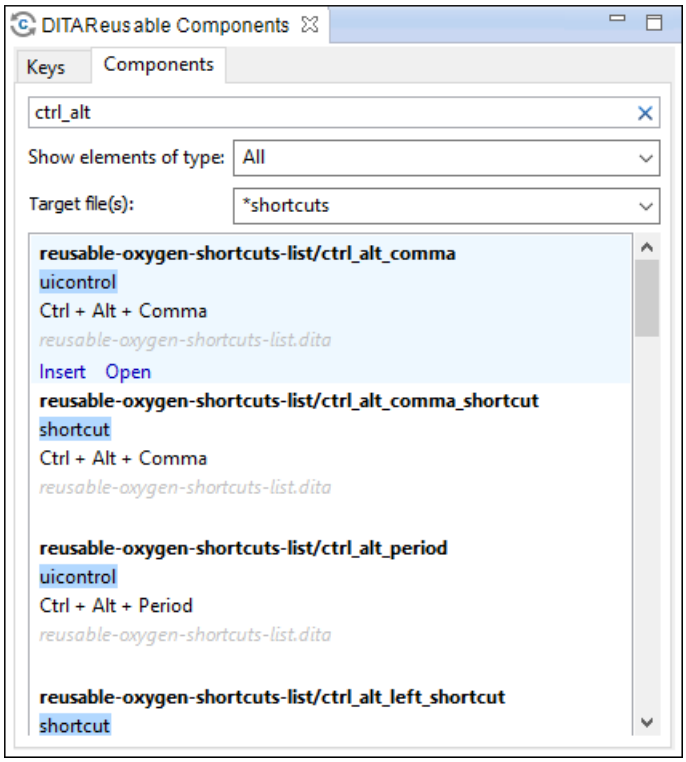


Figure 750: DITA Reusable Components View - Components Tab

The **Components** tab includes the following features and options:

Search Filter

You can enter text in the filter field at the top of this tab to filter the list and search for specific content inside the list of reusable components. This field supports many of the Lucene-based search patterns, such as wildcards (*, ?), boolean operators (AND, OR, NOT), fuzzy searches (~), boosting searches (^), and more.

Show Elements of Type

You can use this drop-down list to select specific types of elements to be displayed in the subsequent preview window. This can help you narrow down the list of possible source elements that you can select.

Target File(s)

You can use this combo box to search for specific target files (the topics that contain reusable components) or select a file from its drop-down list. You can also use wildcards (such as * or ?) in this field.

Double-Click Mechanism

You can double-click any reusable component listed in preview window in this tab to insert it as a content reference or content key reference at the current cursor position or replace the current selection.

- If the parent topic of the selected component has a key defined, it is inserted as a content key reference (*conkeyref*).
- If the parent topic of the selected component does not have a key defined, it is inserted as a content reference (*conref*).

Drag and Drop Mechanism

You can drag a reusable component from the preview window in this tab and drop it in the main editor to insert a content reference or content key reference at the current cursor position.

- If the parent topic of the selected component has a key defined, it is inserted as a content key reference (*conkeyref*).
- If the parent topic of the selected component does not have a key defined, it is inserted as a content reference (*conref*).

Hover and Click Actions

If you hover over a component shown in the preview window, you have access to the following link actions:

Insert

Inserts the component as a content reference or content key reference at the current cursor position or replaces the current selection. If the parent topic has a key defined, it is inserted as a content key reference (*conkeyref*). Otherwise, it is inserted as a content reference (*conref*).

Open

Opens the source file that contains the reusable component.

Contextual Menu Actions

Insert Content Reference

Inserts the component as a content reference (*conref*) at the current cursor position or replaces the current selection.

Insert Content Key Reference

Inserts the component as a content key reference (*conkeyref*) at the current cursor position or replaces the current selection. This action is only available if the parent topic has a key defined.

Go to Definition

Opens the source file that contains the reusable component.

Search References

Searches for all references to the selected component in the entire *DITA map* structure.

Related Information:

Working with Reusable Components on page 1554
Linking in DITA Topics on page 1563
Working with Variable Text in DITA on page 1555
Working with Keys on page 1538
Creating a DITA Content Reference on page 1542
Creating a DITA Content Key Reference on page 1543

Linking in DITA

DITA provides support for various types of linking between topics, some of which is automated, while others are specified by the author. Oxygen XML Editor plugin provides support for all forms of linking in DITA.

Linking Between Parent, Child, and Sibling Topics

A *DITA map* creates a hierarchical relationship between topics. That relationship map expresses a narrative flow from one topic to another, or it may be used as a classification system to help the reader find topics based on their classification, without creating a narrative flow. Since there may be various types of relationships between topics in a hierarchy, you may want to create links between topics in a variety of ways. For instance, if your topics are supposed to be organized into a narrative flow, you may want to have links to the next and previous topics in that flow. If your topics are part of a hierarchical classification, you may want links from parent to child topics, and vice versa, but not to the next and previous topics.

Parent, child, and sibling links are created automatically by the DITA output transformations (and may differ between various output formats). The kinds of links that are created are determined by the DITA *collection-type* attribute.

In-Line Linking in the Content of a Topic

DITA supports linking within the text of a topic using the `xref` element. The destination of the link can be expressed directly using the `href` attribute or indirectly using the `keyref` attribute. If you use the `keyref` attribute, you link to a key rather than directly to a topic. That key is then assigned to a topic in a map that includes that topic. This means that you can change the destination that a key points to by editing the key definition in the map or by substituting another map in the build.

Linking Between Related Topics

In addition to the relationships between topics that expressed by their place in the hierarchy of a map, a topic may be related to other topics in various ways. For instance, a task topic may be related to a concept topic that gives the background of the task, or to a reference topic that provides data needed to complete the task. Task topics may also be related to other tasks in a related area, or concepts to related concepts.

Typically, they are grouped in a list at the end of the topic, although this depends on the behavior of the output transformation. DITA provides two mechanisms for expressing relationships between topics at the topic level: the **Related Links** section of a topic and relationship tables in maps.

Managing Links

Links can break for a variety of reasons. The topic that a link points to may be renamed or removed. A topic may be used in a map that does not include a linked topic. A topic or a key may not exist in a map when a particular profile is applied. The **DITA Maps Manager** provides a way to validate all the links in the documents that are included in the map. This can include validating all the profiling conditions that are applied.

Hierarchical Linking in DITA Maps

To create hierarchical linking between the topics in a *DITA map*, you set the appropriate value of the `collection-type` attribute on the map. See the DITA documentation for the meaning of each of the values of the `collection-type` attribute.

Note: Publishing scripts determine when and how to create hierarchical links. The `collection-type` attribute does not force a particular style of linking. Instead, it declares what the nature of the relationship is between the topics. The publishing scripts use that information to determine how to link topics. Scripts for different types of media might make the determination depending on what is appropriate for the particular type of media. You can provide additional instructions to the scripts using the `linking` attribute.

To add the `collection-type` to an item in a map:

1. Right-click the topic and choose **Edit Properties**. The **Edit Properties** dialog box is displayed.
2. In the **Attributes** tab, select the appropriate value from the **Collection type** drop-down list.
3. You can use the **Other attributes** table to add a value to the `linking` attribute.

Linking in DITA Topics

Direct Links

You can create inline links in the content of a DITA topic using the `xref` element. The destination of the link can be expressed directly by using the `href` attribute and the target can be another topic or a specific element within the other topic, another location within the same topic, a file, or a web link. You can also create direct *related links* to topics, files, or websites in a DITA topic using the `related-links` element.

Indirect Links Using Keys

The destination of the link can also be expressed indirectly by using keys to create either inline links or *related links* (with the `keyref` attribute). By using keys, you avoid creating a direct dependency between topics. This makes links easier to manage and can make it easier to reuse topics in various publications. It can also be helpful in verifying the completeness of a publication, by ensuring that a publication map provides a key definition for every key reference used in the content.

Links based on keys require two pieces:

- Key Definition - Assigns a key to a topic so that other topics can link to it. For more information, see Defining Keys in DITA Maps on page 1486.
- Key Reference - Created in an `xref` element and specifies the key to link to.

The key reference points to a key definition, and the key definition points to a topic. Key definitions are created in maps, as an element on the `topicref` element that points to a topic. This allows you to assign a particular key to one topic in one map and to another topic in another map. When a topic that links to that key is used in each of these maps, the links work correctly in both maps.

Inserting a Link in Oxygen XML Editor plugin

To insert a link in **Author** mode, use the actions available in the **Link** drop-down menu from the toolbar (or the **Link** submenu in the contextual menu or **DITA** menu). You can choose between the following types of inline links:

Cross Reference

Opens the **Cross Reference (xref)** dialog box that allows you to insert a cross reference link to a target DITA resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your DITA map structure. Once the target resource has been selected, you can also target specific elements within that resource. Depending on the context where it is invoked, the action inserts one of the following two elements:

- `xref` - Used to link to other topics or another location within the same topic and points to the target using the `href` or `keyref` attribute.
- `fragref` - A logical reference to a fragment element within a syntax diagram and points to the target using the `href` or `keyref` attribute.

File Reference

Opens a dialog box that allows you to insert a link to a target non-DITA file resource at the current location within a document. The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. It inserts an `xref` element with either an `href` attribute or a `keyref` attribute. If you select **Location** for the target, the link is expressed in an `href` attribute. If you select **Key** for the target, keys will be used to express the link in a `keyref` attribute. You can select a key from the drop-down list or click the **Choose Key Reference** button to use the **Choose Key** dialog box.

Web Link

Opens a dialog box that allows you to insert a link to a target web-related resource at the current location within a document. The target resource can be a URL or a key that is already defined in your *DITA map* structure. It inserts an `xref` element with either an `href` attribute or a `keyref` attribute. If you select **URL** for the target resource, the link is expressed in an `href` attribute. If you select **Key** for the target, keys will be used to express the link in a `keyref` attribute. You can select a key from the drop-down list or click the **Choose Key Reference** button to use the **Choose Key** dialog box.

Related Link to Topic

Opens the **Cross Reference (xref)** dialog box that allows you to insert a link to a target DITA resource in a related links section that is typically at the bottom of your topic (although this depends on the behavior of the output transformation). The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource. If a related links section does not already exist, this action creates one. Specifically, it inserts a `link` element inside a *related-links* element.

Related Link to File

Opens a dialog box that allows you to insert a link to a target non-DITA file resource in a related links section that is typically at the bottom of your topic (although this depends on the behavior of the output transformation). The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. Specifically, it inserts a `link` element inside a *related-links* element. If you select **Location** for the target, the link is expressed in an `href` attribute. If you select **Key** for the target, keys will be used to express the link in a `keyref` attribute. You can select a key from the drop-down list or click the **Choose Key Reference** button to use the **Choose Key** dialog box.

Related Link to Web Page

Opens the **Web Link** dialog box that allows you to insert a link to a target web-related resource in a related links section that is typically at the bottom of your topic (although this depends on the behavior of the output transformation). The target resource can be a URL or a key that is already defined in your *DITA map* structure. If a related links section does not already exist, this action creates one. Specifically, it inserts a `link` element inside a *related-links* element. If you select **URL** for the target resource, the link is expressed in an `href` attribute. If you select **Key** for the target, keys will be used to express the link in a `keyref` attribute. You can

select a key from the drop-down list or click the **Choose Key Reference** button to use the **Choose Key** dialog box.

Cross Reference (xref) Dialog Box

The **Cross Reference (xref)** dialog box is displayed when you insert a **Cross Reference** or **Related Link to Topic** (from the **Link** drop-down menu). It allows you to insert a link to a target resource at the current location within a document (for a **Cross Reference** link) or in a related links section (for a **Related Link to Topic**). The target resource can be the location of a file or a key that is already defined in your *DITA map* structure. Once the target resource has been selected, you can also target specific elements within that resource.

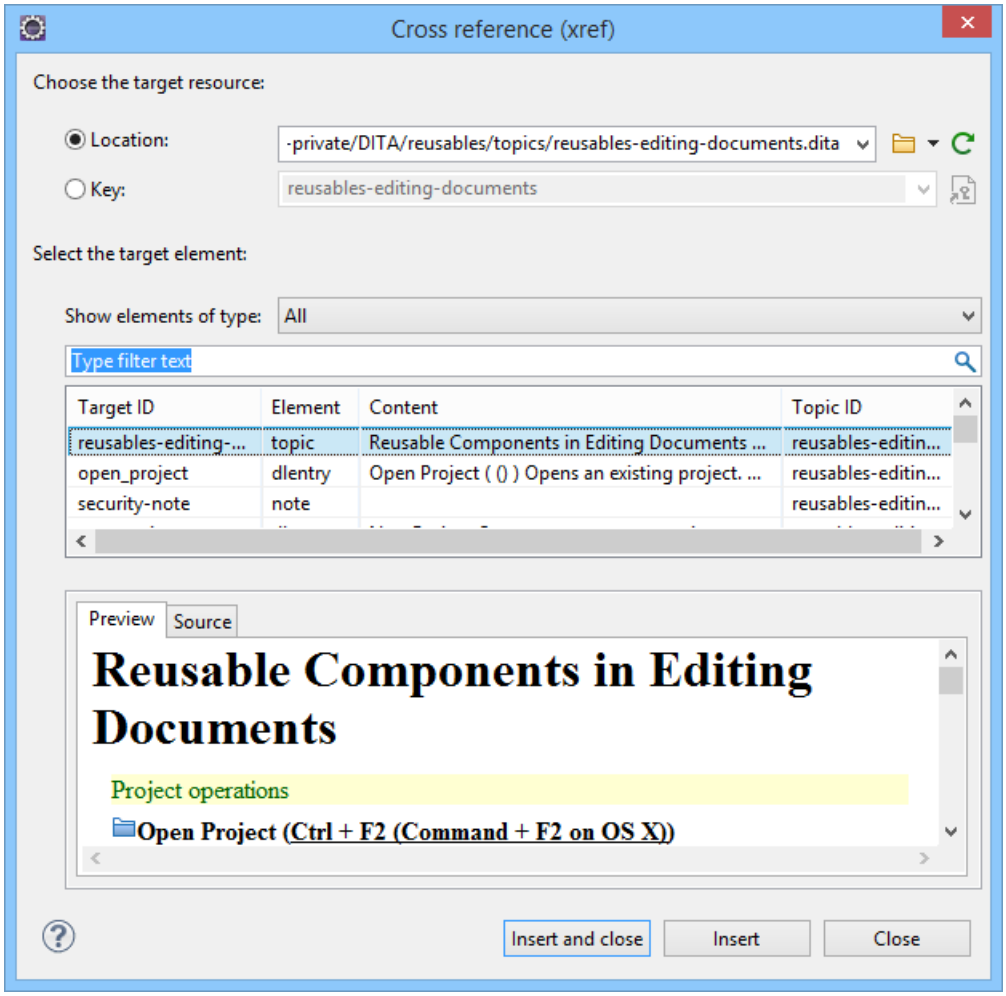


Figure 751: Cross Reference (xref) Dialog Box

This dialog box includes the following sections and fields:

Choose the Target Resource Section

Location

If you select **Location** for the target, the link is expressed in an `href` attribute.

Key

If you select **Key** for the target, keys will be used to express the link in a `keyref` attribute. You can use the **Choose Key Reference** button to open the **Choose Key** dialog box that allows you to select one from a list of all the keys that are gathered from the *root map* (you can also select one from the drop-down list in the **Key** field).

Tip: You can also use the **DITA Reusable Components** view for similar purposes.

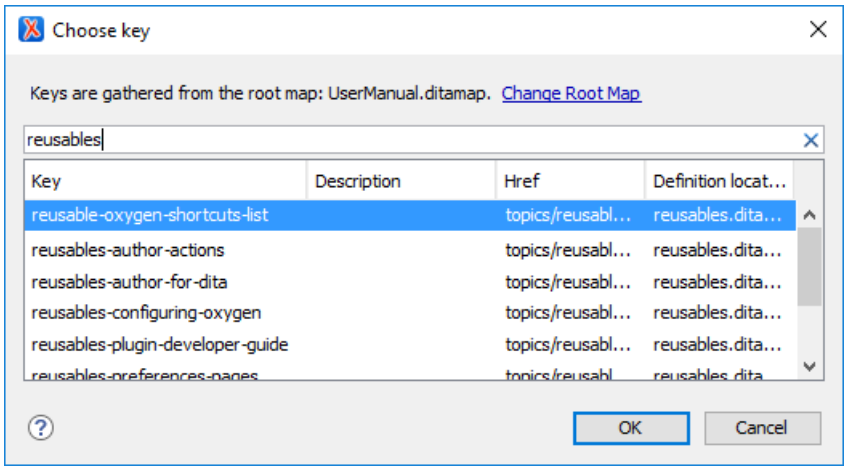


Figure 752: Choose Key Dialog Box

The **Choose Key** dialog box includes the following:

- **Change Root Map** - Opens a small dialog box that allows you to select a *root map*.
- **Search Filter** - You can enter text in the filter field at the top of the dialog box to filter the list and search for a specific keys.
- **Sortable Columns** - The dialog box includes the following columns that can be sorted by clicking on the heading:
  - **Key** - The name of the key.
  - **Description** - The description of the key that is obtained from the definition of the key (for example, the description for a *keydef* would be found in the `keyword` element inside *topicmeta*, or the description for a *topicref* would be found in a `navitle` element). For more information about where the data in this column is collected, see this note.
  - **Href** - The value of the *href* where the key points to.
  - **Definition Location** - The name of the *DITA map* where the key is defined.
- **Group by Definition Location** - A contextual menu action that can be used to group (and sort) all the keys based upon the value in the **Definition Location** column.

Select the Target Element Section

This section can be used to target a specific element inside the target resource.

Show elements of type

You can use this drop-down list to select specific types of elements to be displayed in the subsequent table. This can help you narrow down the list of possible source elements that you can select.

Text Filter Field

You can also use the text filter field to narrow down the list of possible source elements to be displayed in the subsequent table.

Element Table

Presents all the element IDs defined in the source topic. Use this table to select the **Target ID** of the element that you want to reference.

Preview Pane

Displays the content that will be references.

Source Pane

Displays the XML source code of the element to be referenced.

Once you click **Insert** or **Insert and close**, the configured cross reference is inserted into your document.

Tip: You can easily insert multiple cross references by keeping the dialog box opened, using the **Insert** button.

Using Copy/Paste Actions to Insert a Cross Reference

Oxygen XML Editor plugin also includes support for inserting cross references with simple copy/paste actions. The copied content must be an entire DITA XML element with an ID attribute or a `topicref`. Also, the location in the document where you paste the link must be valid, although as long as the **Smart paste and drag and drop** option is selected in the **Schema Aware** preferences page, if you try to paste it in an invalid location, Oxygen XML Editor plugin will attempt to place it in a valid location, and may prompt you with one or more choices for where to place it. You can paste the link as a cross reference with the link expressed in an `href` attribute or in a `keyref` attribute.

To insert a cross reference link (expressed in an `href` attribute) using copy/paste actions, follow these steps:

1. Copy an entire DITA element that has an ID attribute assigned to it or a `topicref`.
2. Place the cursor at a location, where you want to insert the link.
3. Select the **Paste as Link** action from the **Paste Special** submenu from the contextual menu.

To insert a cross reference link (expressed in a `keyref` attribute) using copy/paste actions, follow these steps:

1. In the **DITA Maps Manager** view, make sure that the **Root map** combo box points to the correct map that stores the keys.
2. Make sure the topic that contains the content you want to reference has a key assigned to it. To assign a key, right-click the topic with its parent map opened in the **DITA Maps Manager**, select **Edit Properties**, and enter a value in the **Keys** field.
3. Copy an entire DITA element that has an ID attribute assigned to it from a topic with an assigned key, or a `topicref` from a *DITA map*.
4. Place the cursor at a location, where you want to insert the link.
5. Select the **Paste as Link (keyref)** action from the **Paste Special** submenu from the contextual menu.

Related Information:

Defining Keys in DITA Maps on page 1486
DITA Reusable Components View on page 1558

Linking with Relationship Tables in DITA

A relationship table is used to express relationships between topics outside of the topics themselves. The DITA publishing scripts can then create links between related topics when the content is published.

The reason for using a relationship table is to help make topics easier to reuse. If a topic links directly to another topic, this creates a dependency between the topics. If one topic is reused in a publication where the other is not used, the link is broken. By defining relationships between topics in a relationship table, you avoid creating this dependency.

To create an appropriate set of links between topics in multiple publications, you can create a separate relationship table for each publication. If you are creating multiple publications by applying profiling conditions to a single map, you can also profile your relationship table.

To create a relationship table, follow these steps :

1. If the map is currently open in the **DITA Maps Manager**, double-click the map icon () to open the map in **Author** mode. If it opens in **Text** mode, click **Author** at the bottom left to switch to **Author** mode.
2. Move the insertion point inside the *map* root element (usually `map`, but it might be `bookmap`, or another specialization of the `map` element). The easiest way to do this is to click below the title of the map in the editor and then press the up arrow once. Confirm that you are inside the *map* root element by checking the breadcrumbs at the top left of the editor window. You should only see the name of the *map* root element.
3. Select the **Insert Relationship Table** action on the toolbar or from the **Relationship Table** submenu of the contextual menu.
   The **Insert Relationship Table** dialog box is displayed.
4. Set the number of rows, the number of columns, a table title (optional), and select whether or not you want a table header. Click **Insert**.
5. Enter the type of the topics in the header of each column.

The header of the table (the `relheader` element) already contains a `relcolspec` element for each table column. You should set the value of the attribute `type` of each `relcolspec` element to a value such as *concept*, *task*, or *reference*. When you click in the header cell of a column (that is a `relcolspec` element), you can see all the attributes of that `relcolspec` element, including the `type` attribute in the **Attributes** view. You can edit the attribute type in this view.

6. To insert a topic reference in a cell, place the cursor in a table cell and select **Insert Reference** from the contextual menu or the **DITA Map** toolbar.
7. To add a new row to the table or remove an existing row use **Insert Relationship Row**/**Delete Relationship Row** from the contextual menu or the **DITA Map** toolbar.
8. To add a new column to the table or remove an existing column, use **Insert Relationship Column**/**Delete Relationship Column** contextual menu or the **DITA Map** toolbar. If you double-click the relationship table (or select it and press **Enter**, or choose **Open** from the contextual menu) the *DITA map* is opened in the editor with the cursor positioned inside the corresponding relationship table.
9. To add topic references to your relationship table, drag and drop topics from the **DITA Maps Manager** or the **Navigator** view into the appropriate cell in the relationship table.

   See the DITA documentation for a full explanation of the relationship table format and its options. Note that you can change all the selections that you make here later by using the actions on the toolbar (or in the **Relationship Table** submenu of the contextual menu) or by editing the underlying XML in **Text** mode.
10. Save the *DITA map*.
    Relationship tables are also displayed in the **DITA Maps Manager** view, along with the other elements in its *DITA map*.

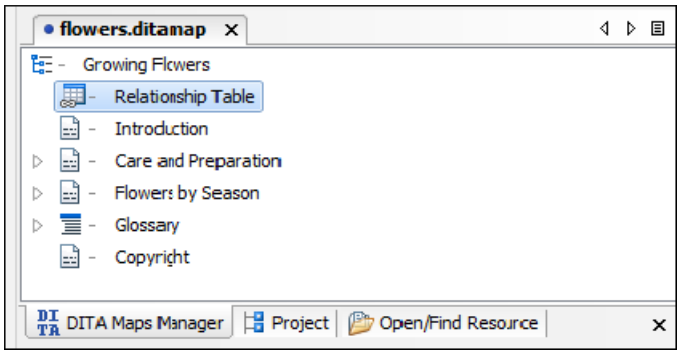


Figure 753: Relationship Table

You can open the DITA map to edit the relationship table by doing one of the following:

- Double-click the appropriate relationship table in the **DITA Maps Manager**.
- Select the relationship table in the **DITA Maps Manager** and press **Enter**.
- Select **Open** from the contextual menu of the relationship table in the **DITA Maps Manager**.

Publishing DITA Output

As a structured writing format, DITA produces structured content (content that is annotated with specific structural and semantic information rather than with formatting information). To create a publication, your *DITA map* and its associated topics must be processed by a transformation script. That script is responsible for how the structural and semantic information in the DITA files is converted into formatting information for display.

This means that you can display the same DITA content in multiple ways, types of media, or publications. It also means that you cannot control every aspect of the presentation of your content in your DITA files. The only way to change the formatting is to change the transformation routines that create it.

Therefore, to create output from your DITA content you have to run a transformation on your content. Transformations for various types of output are provided by the DITA Open Toolkit. Oxygen XML Editor plugin provides a mechanism called transformation scenarios to help you configure and run transformations.

Note: Oxygen XML Editor plugin does not create any output formats itself. Oxygen XML Editor plugin runs externally defined transformations that produce output, and displays the result in the appropriate application, but the output itself is produced by the external transformation, not by Oxygen XML Editor plugin.

Running a Transformation Scenario

To select and run a transformation scenario on your map, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button on the **DITA Maps Manager** toolbar. The **Configure Transformation Scenario(s)** dialog box appears. This dialog box lists all the transformation scenarios that have been configured in your project. Oxygen XML Editor plugin provides a default set of transformation scenarios, but the people in charge of your DITA system may have provided others that are specifically configured for your needs.
2. Select the transformation scenario you want to run and click **Apply Associated**. The transformation scenario runs in the background. You can continue to work in Oxygen XML Editor plugin while the transformation is running. If there are errors or warnings, Oxygen XML Editor plugin displays them when the transformation is complete. If the transformation is successful, Oxygen XML Editor plugin opens the output in the appropriate application.
3. To rerun the same scenario again, click the **Apply Transformation Scenario(s)** button.

Transforming DITA Content

Oxygen XML Editor plugin uses the DITA Open Toolkit (DITA-OT) to transform *DITA maps* and topics into an output format. For this purpose, both the DITA Open Toolkit and Ant come bundled in Oxygen XML Editor plugin. For more information about the DITA Open Toolkit, see DITA Open Toolkit Documentation.

This section includes information about the built-in DITA transformation scenarios, how to create a DITA OT transformation, and how to customize DITA transformations.

Related Information:

Transforming Documents on page 884

DITA Map Transformation Scenarios

Built-in transformation scenarios allow you to transform *DITA maps* to a variety of outputs, such as WebHelp, PDF, ODF, XHTML, EPUB, CHM, Kindle, and MS Word. Oxygen XML Editor plugin also includes a special **Run DITA-OT Integrator** that can be used to integrate a DITA-OT plugin and a **DITA Map Metrics Report** transformation that generates a statistics report for your DITA map. All of them are listed in the **DITA Map** section in the **Configure Transformation Scenario(s)** dialog box.

A variety of transformations scenarios are available for *DITA maps*:

- Predefined transformation scenarios allow you to transform a *DITA map* to a variety of outputs, such as WebHelp, PDF, ODF, XHTML, EPUB, CHM, Kindle, and MS Word.
- **Run DITA-OT Integrator** - Use this transformation scenario if you want to integrate a DITA-OT plugin. This scenario runs an Ant task that integrates all the plugins from the DITA-OT/plugins directory.
- **DITA Map Metrics Report** - Use this type of transformation scenario if you want to generate a *DITA map* statistics report. They contain information such as the number of processed maps and topics, content reuse percentage, number of elements, attributes, words, and characters used in the entire *DITA map* structure, DITA conditional processing attributes used in the *DITA maps*, and more.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Applying Associated Transformation Scenarios on page 982

DITA Map to WebHelp Responsive Transformation

DITA content can be transformed into several types of WebHelp Responsive systems.

WebHelp Responsive Output

To publish a *DITA map* as **WebHelp Responsive** output, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Templates Tab - This tab contains a set of predefined publishing templates that you can use for the layout of your WebHelp system output. You can also create your own publishing templates or edit existing ones.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to process the transformation.

   When the **DITA Map WebHelp Responsive** transformation is complete, the output is automatically opened in your default browser.

WebHelp Responsive with Feedback Output

To publish a *DITA map* as a **WebHelp Responsive with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Responsive with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Templates Tab - This tab contains a set of predefined publishing templates that you can use for the layout of your WebHelp system output. You can also create your own publishing templates or edit existing ones.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.
4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Responsive with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

Parameters for Customizing WebHelp Responsive Output

To customize a transformation scenario, you can edit various parameters, including the following most commonly used ones:

args.default.language

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

clean.output

Deletes all files from the output folder before the transformation is performed (only no and `yes` values are valid and the default value is no).

editlink.remote.ditamap.url

Use this parameter in conjunction with `editlink.web.author.url` to add an *Edit* link next to the topic title in the WebHelp output. When a user clicks the link, the topic is opened in Oxygen XML Web Author where they can make changes that can be saved to a file server. The value should be set as the custom URL of the *main DITA map*. For example, a GitHub custom URL might look like this: `https://getFileContent/oxyengxml/userguide/master/UserGuide.ditamap`.

editlink.web.author.url

This parameter needs to be used in conjunction with `editlink.remote.ditamap.url` to add an *Edit* link next to the topic title in the WebHelp output. When a user clicks the link, the topic is opened in Oxygen XML Web Author where they can make changes that can be saved to a file server. The value should be set as the URL of the Web Author installation. For example: `https://www.oxygenxml.com/oxygen-xml-web-author/`.

editlink.present.only.path.to.topic

When this parameter is set to "true", the DITA topic path is displayed to the right of each topic title in the WebHelp Responsive output. Also, when this parameter is used, the **editlink.remote.ditamap.url** and **editlink.web.author.url** parameters are ignored.

fix.external.refs.com.oxygenxml (Only supported when the DITA OT transformation process is started from Oxygen XML Editor plugin)

The DITA Open Toolkit usually has problems processing references that point to locations outside of the directory of the processed *DITA map*. This parameter is used to specify whether or not the application should try to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references. The fix has no impact on your edited DITA content. Allowed values: `true` or `false` (default).

force.unique

When set to `true` (default value), the transformation will be forced to create unique output files for each instance of a resource when a map contains multiple references to a single topic.

use.stemming

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

webhelp.custom.resources

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

webhelp.favicon

The file path that points to an image to be used as a *favicon* in the WebHelp output.

webhelp.reload.stylesheet

Set this parameter to `true` if you have out of memory problems when generating WebHelp. It will increase processing time but decrease the memory footprint. The default value is `false`.

webhelp.search.custom.excludes.file

The path of the file that contains name patterns for HTML files that should not be indexed by the WebHelp search engine. Each exclude pattern must be on a new line. The patterns are considered to be relative to the output directory, and they accept wildcards such as `'*'` (matches zero or more characters) or `'?'` (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

webhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

webhelp.search.enable.pagination

Specifies whether or not search results will be displayed on multiple pages. Allowed values are `yes` or no.

webhelp.search.page.numberOfItems

Specifies the number of search results items displayed on each page. This parameter is only used when the **webhelp.search.enable.pagination** parameter is enabled.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.show.changes.and.comments

When set to `yes`, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

webhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

webhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq` element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

webhelp.sitemap.priority

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

Parameters Specific to WebHelp Responsive Output

webhelp.default.collection.type.sequence

Specifies if the **sequence** value will be used by default when the `collection-type` attribute is not specified. This option is helpful if you want to have *Next* and *Previous* navigational buttons generated for all HTML pages. Allowed values are **no** (default) and **yes**.

webhelp.enable.search.autocomplete

Specifies if the *Autocomplete* feature is enabled in the WebHelp search text field. The default value is `yes`.

webhelp.fragment.after.body

In the generated output it displays a given XHTML fragment after the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.logo_and_title

In the generated output it displays a given XHTML fragment after the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.main.page.search

In the generated output it displays a given XHTML fragment after the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.toc_or_tiles

In the generated output it displays a given XHTML fragment after the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.after.top_menu

In the generated output it displays a given XHTML fragment after the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.body

In the generated output it displays a given XHTML fragment before the page body. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.logo_and_title

In the generated output it displays a given XHTML fragment before the logo and title. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.main.page.search

In the generated output it displays a given XHTML fragment before the search field. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.toc_or_tiles

In the generated output it displays a given XHTML fragment before the table of contents or tiles in the main page. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.before.top_menu

In the generated output it displays a given XHTML fragment before the top menu. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.footer

In the generated output it displays a given XHTML fragment as the page footer. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.head

In the generated output it inserts a given XHTML fragment in the `<head>` element. The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.fragment.welcome

In the generated output it displays a given XHTML fragment as a welcome message (or title). The value of the parameter can be either an XHTML fragment or a path to a file that contains a well-formed XHTML fragment.

webhelp.merge.nested.topics.related.links

Specifies if the related links from nested topics will be merged with the links in the parent topic. Thus the links will be moved from the topic content to the related links component and all of the links from the same group (for example, *Related Tasks*, *Related References*, *Related Information*) are merged into a single group. The default value is `yes`.

webhelp.show.breadcrumb

Specifies if the breadcrumb component will be presented in the output. The default value is `yes`.

webhelp.show.child.links

Specifies if child links will be generated in the output for all topics that have subtopics. The default value is `no`.

webhelp.show.indexterms.link

Specifies if an icon that links to the index will be presented in the output. The default value is `yes`.

webhelp.show.main.page.tiles

Specifies if the tiles component will be presented in the main page of the output. For a *tree* style layout, this parameter should be set to `no`.

webhelp.show.main.page.toc

Specifies if the table of contents will be presented in the main page of the output. The default value is `yes`.

webhelp.show.navigation.links

Specifies if navigation links will be presented in the output. The default value is `yes`.

webhelp.show.print.link

Specifies if a print link or icon will be presented within each topic in the output. The default value is `yes`.

webhelp.show.related.links

Specifies if the related links component will be presented in the WebHelp Responsive output. The default value is `yes`. The `webhelp.merge.nested.topics.related.links` parameter can used in conjunction with this one to merge the related links from nested topics into the links in the parent topic.

webhelp.show.publication.toc

Specifies if a table of contents will be presented on the left side of each topic in the output. The default value is `yes`.

webhelp.show.topic.toc

Specifies if a topic table of contents will be presented on the right side of each topic in the output. This table of contents contains links to each section within the current topic and the section corresponding to the current scroll position is highlighted. The default value is `yes`.

webhelp.show.top.menu

Specifies if a menu will be presented at the topic of the main page in the output. The default value is `yes`.

webhelp.publication.toc.hide.chunked.topics

Specifies if the table of contents will contain links for *chunked* topics. The default value is `yes`.

webhelp.publication.toc.links

Specifies which links will be included in the table of contents. The possible values are:

- **chapter** (default) - The TOC will include links for the current topic, its children, its siblings, and its direct ancestor (including the direct ancestor's siblings), and the parent chapter.
- **topic** - The TOC will only include links for the current topic and its direct children.
- **all** - The TOC will include all links.

webhelp.publication.toc.tooltip.position

By default, if a topic contains a `shortdesc` element, its content is displayed in a tooltip when the user hovers over its link in the table of contents. This parameter controls whether or not this tooltip is displayed and its position relative to the link. The possible values are:

- **left** (default)
- **right**
- **top**
- **bottom**
- **hidden** - The tooltip will not be displayed.

webhelp.top.menu.depth

Specifies the maximum depth level of the topics that will be included in the top menu. The default value is `3`. A value of `0` means that the menu has unlimited depth.

webhelp.topic.collapsible.elements.initial.state

Specifies the initial state of collapsible elements (tables with titles, nested topics with titles, sections with titles, index term groups). The possible values are `collapsed` or `expanded` (default value).

Related Information:

Customizing the WebHelp Responsive Output on page 1083
WebHelp Responsive Output Layout and Features on page 1040

DITA Map to WebHelp Classic Transformation

DITA content can be transformed into several types of WebHelp Classic systems.

WebHelp Classic Output

To publish a *DITA map* as a **WebHelp Classic** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Skins Tab - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.

- Filters Tab - This tab allows you to filter certain content elements from the generated output.
- Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
- Output Tab - This tab allows you to configure options that are related to the location where the output is generated.

4. Click **Apply associated** to process the transformation.

   When the **DITA Map WebHelp Classic** transformation is complete, the output is automatically opened in your default browser.

WebHelp Classic with Feedback Output

To publish a *DITA map* as a **WebHelp Classic with Feedback** system, follow these steps:

1. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar.
2. Select the **DITA Map WebHelp Classic with Feedback** scenario from the **DITA Map** section.
3. If you want to configure the transformation, click the **Edit** button.

   Step Result: This opens an **Edit scenario** configuration dialog box that allows you to configure various options in the following tabs:

   - Skins Tab - This tab contains a set of predefined skins that you can use for the layout of your WebHelp system output.
   - Parameters Tab - This tab includes numerous parameters that can be set to customize your WebHelp system output. See the Parameters section below for details about the most commonly used parameters for WebHelp Responsive transformations.
   - Filters Tab - This tab allows you to filter certain content elements from the generated output.
   - Advanced Tab - This tab allows you to specify some advanced options for the transformation scenario.
   - Output Tab - This tab allows you to configure options that are related to the location where the output is generated.

4. Click **Apply associated** to begin the transformation.
5. Enter the documentation product ID (value for the `webhelp.product.id` parameter) and the documentation version (value for the `webhelp.product.version` parameter).

   When the **DITA Map WebHelp Classic with Feedback** transformation is complete, your default browser opens the `installation.html` file. This file contains information about the output location, system requirements, installation instructions, and deployment of the output. Follow the instructions to complete the system deployment.

For more information about the feedback-enabled WebHelp system, watch our video demonstration:

https://www.youtube.com/embed/eoQ2uxHvppE

Parameters for Customizing WebHelp Classic Output

To customize a transformation scenario, you can edit various parameters, including the following most commonly used ones:

args.default.language

This parameter is used if the language is not detected in the *DITA map*. The default value is `en-us`.

clean.output

Deletes all files from the output folder before the transformation is performed (only `no` and `yes` values are valid and the default value is `no`).

fix.external.refs.com.oxygenxml (Only supported when the DITA OT transformation process is started from Oxygen XML Editor plugin)

The DITA Open Toolkit usually has problems processing references that point to locations outside of the directory of the processed *DITA map*. This parameter is used to specify whether or not the application should try to fix such references in a temporary files folder before the DITA Open Toolkit is invoked on the fixed references. The fix has no impact on your edited DITA content. Allowed values: `true` or `false` (default).

force.unique

When set to `true` (default value), the transformation will be forced to create unique output files for each instance of a resource when a map contains multiple references to a single topic.

use.stemming

Controls whether or not you want to include stemming search algorithms into the published output (default setting is `false`).

webhelp.body.script

URL value that specifies the location of a well-formed XHTML file containing the custom script that will be copied in the `<body>` section of every WebHelp page.

webhelp.copyright

Adds a small copyright text that appears at the end of the **Table of Contents** pane.

webhelp.custom.resources

The file path to a directory that contains resources files. All files from this directory will be copied to the root of the WebHelp output.

webhelp.favicon

The file path that points to an image to be used as a *favicon* in the WebHelp output.

webhelp.footer.file

Path to an XML file that includes the footer content for your WebHelp output pages. You can use this parameter to integrate social media features (such as widgets for Facebook™, Twitter™, Google Analytics, or Google+™). The file must be well-formed, each widget must be in separate `div` or `span` element, and the code for each `script` element is included in an XML comment (also, the start and end tags for the XML comment must be on a separate line). The following code exert is an example for adding a Facebook™ widget:

```
<div id="facebook">
  <div id="fb-root"/>
  <script>
    <!-- (function(d, s, id) { var js, fjs = d.getElementsByTagName(s)[0];
      if (d.getElementById(id)) return;
      js = d.createElement(s); js.id = id;
      js.src = "//connect.facebook.net/en_US/sdk.js#xfbml=1&version=v2.0";
      fjs.parentNode.insertBefore(js, fjs); }
       (document, 'script', 'facebook-jssdk')); -->
    </script>
    <div data-share="true" data-show-faces="true" data-action="like"
       data-layout="standard" class="fb-like"/>
</div>
```

webhelp.footer.include

Specifies whether or not to include footer in each WebHelp page. Possible values: `yes`, no. If set to no, no footer is added to the WebHelp pages. If set to `yes` and the `webhelp.footer.file` parameter has a value, then the content of that file is used as footer. If the `webhelp.footer.file` has no value then a default **Oxygen** footer is inserted in each WebHelp page.

webhelp.google.search.results

A file path that specifies the location of a well-formed XHTML file containing the Google Custom Search Engine element `gcse:searchresults-only`. You can use all supported attributes for this element. It is recommend to set the `linkTarget` attribute to `frm` for frameless (*iframe*) version of WebHelp or to `contentWin` for the frameset version of WebHelp. The default value for this attribute is `_blank` and the search results will be loaded in a new window. If this parameter is not specified, the following code will be used `<gcse:searchresults-only linkTarget="frm"></gcse:searchresults-only>`

webhelp.google.search.script

A file path that specifies the location of a well-formed XHTML file containing the Custom Search Engine script from Google.

webhelp.head.script

URL value that specifies the location of a well-formed XHTML file containing the custom script that will be copied in the `<head>` section of every WebHelp page.

webhelp.logo.image.target.url

Specifies a target URL that is set on the logo image. When you click the logo image, you will be redirected to this address.

webhelp.logo.image

Specifies a path to an image displayed as a logo in the left side of the output header.

webhelp.reload.stylesheet

Set this parameter to `true` if you have out of memory problems when generating WebHelp. It will increase processing time but decrease the memory footprint. The default value is `false`.

webhelp.search.custom.excludes.file

The path of the file that contains name patterns for HTML files that should not be indexed by the WebHelp search engine. Each exclude pattern must be on a new line. The patterns are considered to be relative to the output directory, and they accept wildcards such as `'*'` (matches zero or more characters) or `'?'` (matches one character). For more information about the patterns, see https://ant.apache.org/manual/dirtasks.html#patterns.

webhelp.search.japanese.dictionary

The file path of the dictionary that will be used by the *Kuromoji* morphological engine for indexing Japanese content in the WebHelp pages.

webhelp.search.ranking

If this parameter is set to `false` then the 5-star rating mechanism is no longer included in the search results that are displayed on the **Search** tab (default setting is `true`).

webhelp.show.changes.and.comments

When set to `yes`, user comments, replies to comments, and tracked changes are published in the WebHelp output. The default value is no.

webhelp.sitemap.base.url

Base URL for all the `loc` elements in the generated `sitemap.xml` file. The value of a `loc` element is computed as the relative file path from the `href` attribute of a `topicref` element from the *DITA map*, appended to this base URL value. The `loc` element is mandatory in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `sitemap.xml` file is not generated.

webhelp.sitemap.change.frequency

The value of the `changefreq` element in the generated `sitemap.xml` file. The `changefreq` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `changefreq` element is not added in `sitemap.xml`. Allowed values: <empty string> (default), `always`, `hourly`, `daily`, `weekly`, `monthly`, `yearly`, `never`.

webhelp.sitemap.priority

The value of the `priority` element in the generated `sitemap.xml` file. It can be set to any fractional number between 0.0 (least important priority) and 1.0 (most important priority). For example, 0.3, 0.5, or 0.8. The `priority` element is optional in `sitemap.xml`. If you leave this parameter set to its default empty value, then the `priority` element is not added in `sitemap.xml`.

Related Information:

Customizing WebHelp Classic Output on page 1009

WebHelp Classic Output Layout and Features on page 989

DITA Map to PDF Transformation

Oxygen XML Editor plugin comes bundled with the DITA Open Toolkit that provides a mechanism for converting *DITA maps* to PDF output.

Creating a DITA Map to PDF Transformation Scenario

To create a *DITA Map to PDF* transformation scenario, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF** and click the **Edit** button (or use the **Duplicate** button if your *framework* is read-only).

3. Use the various tabs to configure the transformation scenario. In the **Parameters** tab, you can use a variety of parameters to customize the output. For example, the following parameters are just a few of the most commonly used ones:
   - `show.changes.and.comments` - If set to `yes`, user comments, replies to comments, and *tracked changes* are published in the PDF output.
   - `customization.dir` - Specifies the path to a customization directory.
4. Click **OK** and then the **Apply Associated** button to run the transformation scenario.

Related Information:
DITA Map to PDF Output Customization on page 1117

DITA Map to PDF WYSIWYG Transformation

Oxygen XML Editor plugin comes bundled with a **DITA-OT CSS Publishing to PDF plugin** that allows you to convert *DITA maps* to PDF using a CSS layout processor. Oxygen XML Editor plugin also comes bundled with a built-in CSS-based PDF processing engine called **Oxygen PDF Chemistry**. For those who are familiar with CSS, this makes it very easy to style and customize the PDF output of your DITA projects without having to work with *xsl:fo* customizations. Oxygen XML Editor plugin also supports a few third-party processors.

The following processors are supported:

- **Oxygen PDF Chemistry** - A built-in processor that is bundled with Oxygen XML Editor plugin. For more information, see the Oxygen PDF Chemistry User Guide.
- **Prince Print with CSS** (not included in the Oxygen XML Editor plugin installation kit) - A third-party component that needs to be purchased from http://www.princexml.com.
- **Antenna House Formatter** (not included in the Oxygen XML Editor plugin installation kit) - A third-party component that needs to be purchased from http://www.antennahouse.com/antenna1/formatter/.

The **DITA-OT CSS Publishing to PDF plugin** is located in the following directory: *`DITA-OT-DIR`*`/plugins/com.oxygenxml.pdf.css`. Although it includes a set of CSS files in its `css` subfolder, when this plugin is used in Oxygen XML Editor plugin, the CSS files located in the `${frameworks}` directory take precedence.

Creating the Transformation Scenario

To create an **DITA Map to PDF WYSIWYG** transformation scenario, follow these steps:

1. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
2. Select **DITA Map PDF - WYSIWYG**.
3. In the **CSS Processor** tab, choose the processor type. You can select between **Oxygen PDF Chemistry**, **Prince XML**, or **Antenna House**.
4. In the **Parameters** tab, configure any of the following parameters (if applicable):
   - **css.processor.path.chemistry** (if you are using the **Oxygen PDF Chemistry** processor) - Specifies the path to the **Oxygen PDF Chemistry** executable file that will be run to generate the PDF. If this parameter is not set, your system's PATH environment variable will be used to find and start the **Oxygen PDF Chemistry** processor.
   - **css.processor.path.prince** (if you are using the **Prince Print with CSS** processor) - Specifies the path to the Prince executable file that will be run to produce the PDF. If you installed Prince using its default settings, you can leave this blank.
   - **css.processor.path.antenna-house** (if you are using the **Antenna House Formatter** processor) - Specifies the path to the Antenna House executable file that will be run to produce the PDF. If you installed Antenna House using its default settings, you can leave this blank.
   - **show.changes.and.comments** - When set to `yes`, user comments, replies to comments, and *tracked changes* are published in the PDF output. The default value is no.
   - **dita.css.list** - Allows you to specify a list of CSS URLs to be used by the PDF processor (instead of the default CSS files). The files must have URL syntax and be separated using semicolons. If the value is empty, the CSS associated with the current selection from the **Styles** drop-down menu is used.
   - **args.css** - Allows you to specify a path to a custom CSS to be used in addition to those specified in the `dita.css.list` parameter OR in addition to the CSS that is currently selected in the **Styles** drop-down

menu. The files must have URL syntax and be separated using semicolons. Also, the `dita.css.list` parameter must be left empty to use these files in addition to the selection in the **Styles** drop-down menu.

5. Click **OK** and run the transformation scenario.

Customizing the Output

The **DITA-OT CSS Publishing to PDF plugin** makes it very easy to style and customize the PDF output of your DITA projects without having to work with *xsl:fo* customizations. You can style the PDF output by simply using a custom CSS to change the styling and then re-running the transformation scenario until you get the desired result.

For more information, see the Customization CSS section. It offers numerous tips and examples for customizing the CSS for the PDF output.

Changing the Style of an Element

To change the style of a particular element, you need to create an additional CSS file that will store the customization rules. Once you have created this file, you need to instruct the editor how to use this additional CSS. This can be done in two ways:

- Specify the path to your custom CSS using the `args.css` parameter:
  1. Edit a **DITA map to PDF WYSIWYG** transformation scenario.
  2. In the **Parameters** tab, specify the path to your custom CSS files in the `args.css` parameter.
  3. Click **OK** and run the transformation scenario.

  This method is appropriate if you just want to apply the styling customization to the output.
- Create an alternate CSS for the DITA document type:
  1. Follow the procedure for adding an alternate CSS file in Customizing the Main CSS of a Framework on page 1297.
  2. Once you have configured your CSS as an additional layer, you can select it from the **Styles** drop-down menu (on the toolbar).
  3. Run the **DITA Map PDF - WYSIWYG** transformation scenario and the customization rules from the additional CSS will be visible in the produced PDF.

  This method allows you to have many customization CSS files and simply select the one that you need at any time for both the output and the rendering in **Author** mode.

Using the CSS Inspector to See the Style Associated with an Element

To find the styles associated with an element, follow this procedure:

1. Open a document in the editor and select **Inspect Styles** from the contextual menu. This opens the **CSS Inspector** view that shows all the CSS rules that apply to the selected element.
2. Click the particular link for the CSS selector that you need to change and Oxygen XML Editor plugin will open the CSS file and position the cursor at that selector.
3. After you identify the source of the styles you want to modify, copy the CSS rule in your customization CSS file and modify it according to your needs.

   To see the changes in **Author** mode, press **F5** to reload the document.

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Configuring and Managing Multiple CSS Styles on page 1315
CSS Inspector View on page 209
Oxygen PDF Chemistry User Guide
Customization CSS on page 899

DITA Map to MS Office Word Transformation

Oxygen XML Editor plugin comes bundled with a transformation scenario that allows you to convert *DITA maps* to Microsoft Office Word documents. It utilizes the **DITA to Word plugin** created by Jarno Elovirta. This *plugin* contains a Word document named **Normal.docx** (located in: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/DITA-OT2.x/plugins/com.elovirta.ooxml/resources`) that is used by the transformation scenario as a template to generate the final Word document.

Tip: You can make general modifications to the **Normal.docx** template file to alter the published output.

Configuring the Transformation Scenario

To configure an **DITA Map to MS Office Word** transformation scenario, follow these steps:

1. Open the DITA map in the **DITA Maps Manager**.
2. Click the **Configure Transformation Scenario(s)** button from the **DITA Maps Manager** toolbar.
3. Select **DITA Map MS Office Word**.
4. For advanced customizations, in the **Parameters** tab you can use any of the following parameters that are unique to this transformation scenario to specify paths to files that affect the output in various ways:
   - `dotx.file` - Specifies the path to a Word template file (`.docx`) that will be used in the transformation to generate the final Word document. Set this parameter if you want to use a different template file other than the **Normal.docx** file that is used by default.
   - `document.flat.xsl` - Specifies the path to a pre-process clean-up stylesheet.
   - `core.xsl` - Specifies the path to a core metadata stylesheet.
   - `custom.xsl` - Specifies the path to a custom metadata stylesheet.
   - `document.xsl` - Specifies the path to a main document stylesheet.
   - `comments.xsl` - Specifies the path to a comments stylesheet.
   - `numbering.xsl` - Specifies the path to a list and title numbering stylesheet.
   - `footnotes.xsl` - Specifies the path to a footnote stylesheet.
   - `document.xml.xsl` - Specifies the path to a document relations metadata stylesheet.
   - `inkscape.exec` - Specifies the path to an Inkscape (open-source vector graphics editor) executable file.
5. Click **OK** and run the transformation scenario.

Result: The result of the transformation will automatically be opened in your system's default word processing application (such as Microsoft Word).

Related Information:

Editing a Transformation Scenario on page 980
Configure Transformation Scenario(s) Dialog Box on page 982
Migrating MS Office Documents to DITA on page 1616

DITA Map to CHM (Compiled HTML Help) Transformation

To perform a *Compiled HTML Help (CHM)* transformation, Oxygen XML Editor plugin needs `Microsoft HTML Help Workshop` to be installed on your computer. Oxygen XML Editor plugin automatically detects `HTML Help Workshop` and uses it.

Note: `HTML Help Workshop` might fail if the files used for transformation contain accents in their names, due to different encodings used when writing the *.hhp* and *.hhc* files. If the transformation fails to produce the CHM output but the *.hhp* (HTML Help Project) file is already generated, you can manually try to build the CHM output using `HTML Help Workshop`.

Changing the Output Encoding

Oxygen XML Editor plugin uses the `htmlhelp.locale` parameter to correctly display specific characters of different languages in the output of the *Compiled HTML Help (CHM)* transformation. By default, the **DITA Map CHM** transformation scenario that comes bundled with Oxygen XML Editor plugin has the `htmlhelp.locale` parameter set to `en-US`.

To customize this parameter, follow this procedure:

1. Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the toolbar or the **XML** menu.
2. Select the **DITA Map CHM** transformation scenario and click the **Edit** button.
3. In the **Parameter** tab, search for the `htmlhelp.locale` parameter and change its value to the desired language tag.

   Note: The format of the `htmlhelp.locale` parameter is `LL-CC`, where `LL` represents the language code (en, for example) and `CC` represents the country code (US, for example). The language codes are contained in the `ISO 639-1` standard and the country codes are contained in the `ISO 3166-1` standard. For further details about language tags, go to http://www.rfc-editor.org/rfc/rfc5646.txt.

DITA Map to Kindle Transformation

Oxygen XML Editor plugin requires *KindleGen* to generate Kindle output from *DITA maps*. To install *KindleGen* for use by Oxygen XML Editor plugin, follow these steps:

1. Go to www.amazon.com/kindleformat/kindlegen and download the zip file that matches your operating system.
2. Unzip the file on your local disk.
3. Start Oxygen XML Editor plugin and open a *DITA map* in the **DITA Maps Manager** view.
4. Click the **Configure Transformation Scenario(s)** button.
5. Select the **DITA Map Kindle** transformation and press the **Edit** button to edit it.
6. Go to **Parameters** tab and set the **kindlegen.executable** parameter as the path to the *KindleGen* directory.
7. Accept the changes.

Creating or Editing a DITA OT Transformation

Creating a DITA OT Transformation Scenario

To create a **DITA OT Transformation** scenario, use one of the following methods:

- Use the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the **DITA Maps Manager** toolbar, main toolbar, or the **XML** menu. Then click the **New** button and select **DITA OT Transformation**.
- Go to **Window** > **Show View** and select **Transformation Scenarios** to display this view. Click the **New Scenario** drop-down menu button and select **DITA OT Transformation**.

Both methods open the **DITA Transformation Type** dialog box that presents the list of possible outputs.

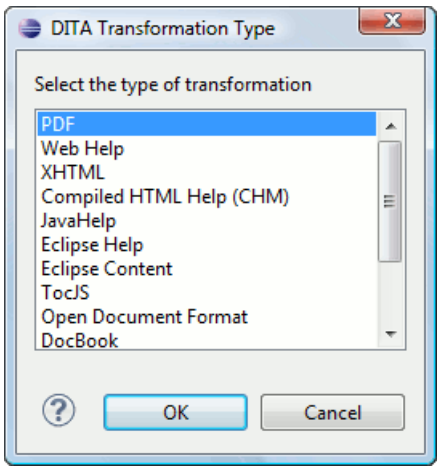


Figure 754: DITA Transformation Type Dialog Box

Select the desired type of output and click **OK**. This opens the **New Scenario** dialog box.

The upper part of the dialog box allows you to specify the **Name** of the transformation scenario.

The lower part of the dialog box contains several tabs that allow you to configure the options that control the transformation. Some of these tabs are only available for certain output types (for example, a **Skins** tab is only available for **WebHelp Classic** and **WebHelp Classic with Feedback** output types, a **Templates** tab is available only for **WebHelp Responsive** and **WebHelp Responsive with Feedback**, and a **FO Processor** tab is available for PDF output).

Editing a DITA OT Transformation Scenario

Editing a transformation scenario is useful if you need to configure some of its parameters.

To configure an existing transformation scenario, follow these steps:

1. Select the **Configure Transformation Scenario(s) (Alt + Shift + T, C (Command + Alt + T, C on OS X))** action from the **DITA Maps Manager** toolbar, main toolbar, or the **XML** menu.

   Step Result: The **Configure Transformation Scenario(s)** dialog box is opened.
2. Select the particular transformation scenario and click the **Edit** button at the bottom of the dialog box or from the contextual menu.

   Note: Since transformation scenarios that are associated with predefined *frameworks* are read-only, these scenarios will prompt you to use the **Duplicate** button and then edit the duplicated scenario.

Result: This will open an **Edit scenario** configuration dialog box that contains several tabs that allow you to configure the options that control the transformation. Some of these tabs are only available for certain output types (for example, a **Skins** tab is only available for **WebHelp Classic** and **WebHelp Classic with Feedback** output types, a **Templates** tab is available only for **WebHelp Responsive** and **WebHelp Responsive with Feedback**, and a **FO Processor** tab is available for PDF output).

Related Information:

Creating a DITA OT Plugin on page 1609
Installing a DITA-OT Plugin on page 1608
DITA Open Toolkit Documentation

Skins Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Skins** tab is available for DITA OT transformations with **WebHelp Classic** or **WebHelp Classic with Feedback** output types and it provides a set of predefined skins that you can use as a base for your WebHelp system output.

A *skin* is a collection of CSS properties that can alter the look of the output by changing colors, font types, borders, margins, and paddings. This allows you to rapidly adapt the look and feel of your output.

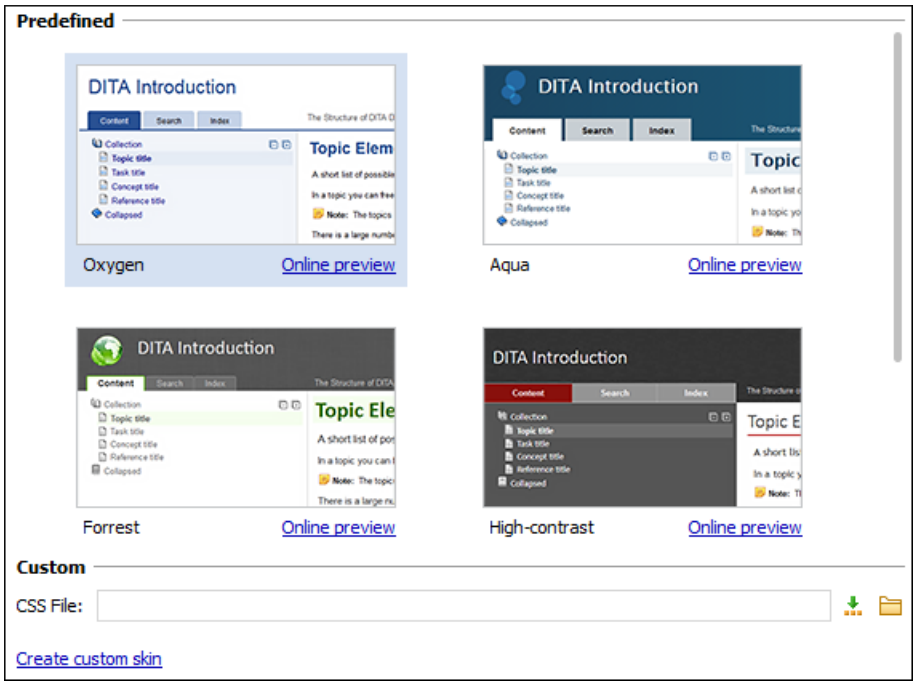


Figure 755: Skins Tab

The **Skins** tab includes the following sections:

Predefined Skins

This sections presents the predefined skins that are included in Oxygen XML Editor plugin. The predefined skins cover a wide range of chromatic themes, ranging from a very light one to a high-contrast variant. To see how the *skin* looks when applied on a sample documentation project that is stored on the Oxygen XML Editor plugin website, press the **Online preview** link.

Custom Skins

You can use this section to customize the look of the output.

CSS File

You can set this field to point to a custom CSS stylesheet or customized skin. A custom CSS file will overwrite a skin selection.

Note: The output can also be styled by setting the `args.css` parameter in the **Parameters tab**. The properties taken from the stylesheet referenced in this parameter take precedence over the properties declared in the skin set in the **Skins tab**.

Create custom skin

Use this link to open the **WebHelp Skin Builder** tool.

Templates Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Templates** tab is available for DITA OT transformations with **WebHelp Responsive** or **WebHelp Responsive with Feedback** output types and it provides a set of predefined publishing templates. You can use one of them to publish your documentation or as a starting point for a new publishing template.

There are two main types of templates, *Tiles* and *Tree* and each of the built-in templates includes of version of each type. You can click on the tags at the top of the pane to filter the templates and narrow your search. You can filter them by either **tiles** or **tree** and then various color schemes. Each built-in template also includes an **Online preview** link that opens a webpage in your default browser that provides a sample of how the main page will look when that particular template is used to generate the output.

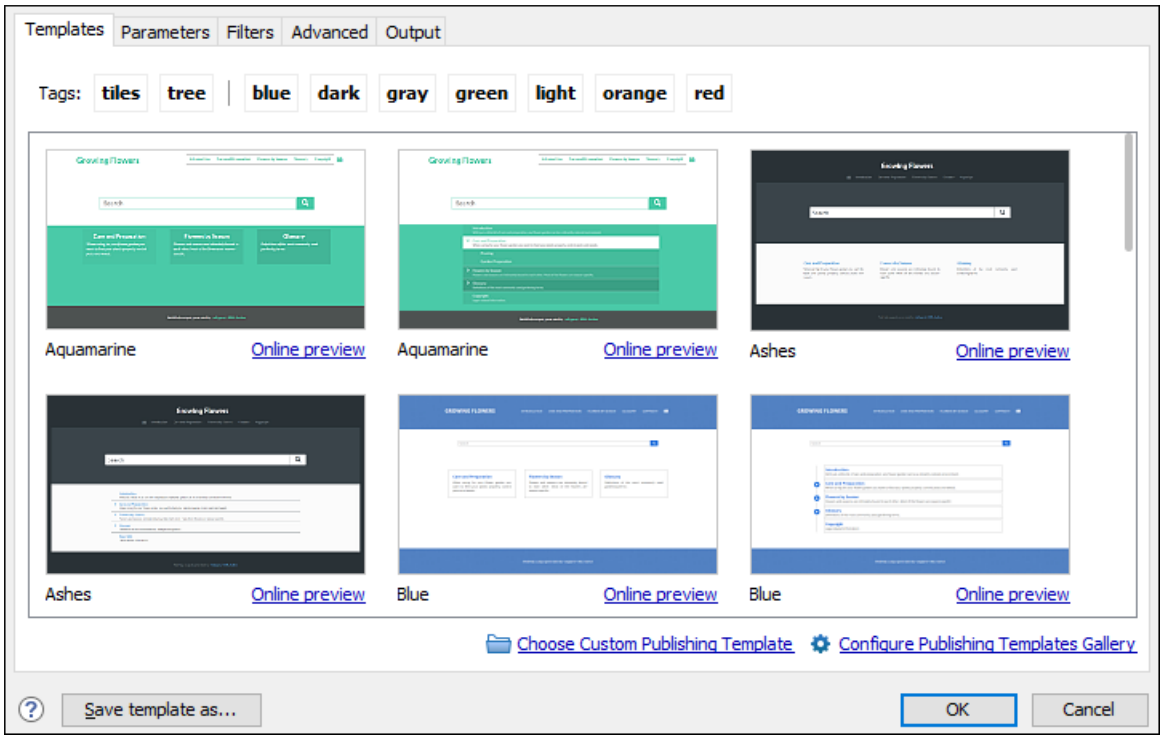


Figure 756: Templates Tab

The two main types of layouts:

Tiles

The main page in the WebHelp output presents a tile for each main topic (chapter) of the documentation. Each tile includes a link to the topic and a short description.

Tree

The main page in the WebHelp output presents a tree-like table of contents with links to the first and second level topics in the publication.

Built-in Templates Location

All built-in templates are stored in the following directory: *DITA-OT-DIR*`/plugins/com.oxygenxml.webhelp.responsive/templates`.

Save Template As Button

You can use the **Save template as** button (at the bottom-left of the transformation dialog box) to export the currently selected template into a new template package that can be used as a starting point to create your own custom template. Clicking this button will open a template package configuration dialog box that contains some options and displays the parameters that will be exported to your template package.

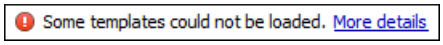
Selecting Custom Templates

Once you are finished configuring your template, you can click the **Choose Custom Publishing Template** link to select your template.

You can also add your custom templates to the list of templates displayed in the **Templates** tab. To do this, store them in a directory, then click the **Configure Publishing Templates Gallery** link and add that directory to the list. All the templates contained in your template directory will be displayed in the preview pane along with all the built-in templates.

Template Errors

When the **Templates** tab is opened, all templates (built-in and custom) are loaded and validated. Specifically, certain elements in the template descriptor file are checked for validity. If errors are encountered that prevents the template from loading, the following message will be displayed toward the bottom of the dialog box:



If you click the **More details** link, a window will open with more information about the encountered error. For example, it might offer a hint for which element is missing from the expected descriptor file structure.

Also, if a template could be loaded, but certain elements could not be found in the descriptor file, a warning icon (⚠) will be displayed on the template's image (in the **Templates** tab of the transformation dialog box). For example, this happens if a valid preview-image element cannot be found.

Sharing Publishing Template

To share a publishing template with others, following these steps:

1. Copy your template in a new folder.
2. Go to **Options** > **Preferences** > **DITA** > **Publishing** and add that new folder to the list.
3. Switch the option as the bottom of that preferences page to **Project Options**.
4. Share your project file (`.xpr`).

Related Information:

Publishing Templates on page 1055
Working with Publishing Templates on page 1083

FO Processor Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **FO Processor** tab is available for DITA OT transformations with a **PDF** output type.

This tab allows you to select an FO Processor to be used for the transformation.

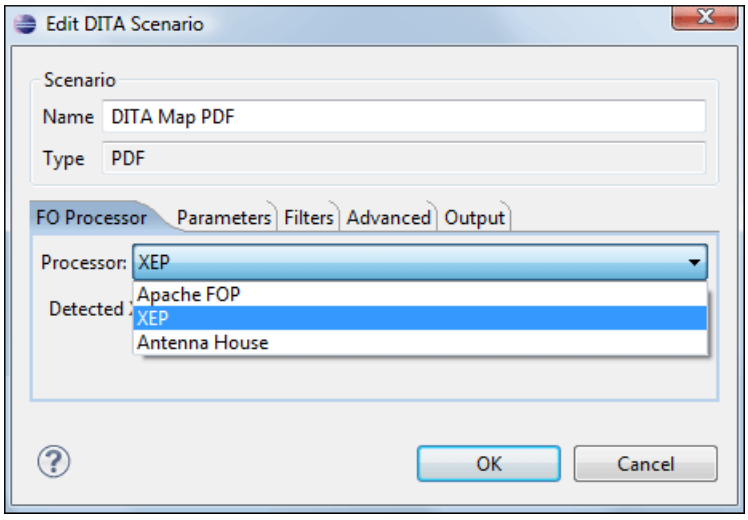


Figure 757: FO Processor Configuration Tab

You can choose one of the following processors:

Apache FOP

The default processor that comes bundled with Oxygen XML Editor plugin.

XEP

The RenderX XEP processor. If XEP is already installed, Oxygen XML Editor plugin displays the detected installation path under the drop-down menu. XEP is considered installed if it was detected in one of the following sources:

- XEP was configured as an external FO Processor in the **FO Processors** option page.
- The system property *com.oxygenxml.xep.location* was set to point to the XEP executable file for the platform (for example: `xep.bat` on Windows).
- XEP was installed in the *`DITA-OT-DIR`*`/plugins/org.dita.pdf2/lib` directory of the Oxygen XML Editor plugin installation directory.

Antenna House

The Antenna House (AH Formatter) processor. If Antenna House is already installed, Oxygen XML Editor plugindisplays the detected installation path under the drop-down menu. Antenna House is considered installed if it was detected in one of the following sources:

- Environment variable set by Antenna House installation (the newest installation version will be used).
- Antenna House was added as an external FO Processor in the Oxygen XML Editor plugin preferences pages.

To further customize the PDF output obtained from the Antenna House processor, follow these steps:

1. **Edit** the transformation scenario.
2. Open the **Parameters** tab.
3. Add the `env.AXF_OPT` parameter and point to the Antenna House configuration file.

Related Information:

FO Processors Preferences on page 111
Generating PDF Output Using an XSL-FO Processor on page 1123

Parameters Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Parameters** tab allows you to configure the parameters sent to the DITA-OT build file.

The table in this tab displays all the parameters that the DITA-OT documentation specifies as available for each chosen type of transformation (for example, XHTML or PDF), along with their description and current values. You can find more information about each parameter in the DITA OT Documentation. You can also add, edit, and remove parameters, and you can use the text box to filter or search for a specific term in the entire parameters collection. Note that edited parameters are displayed with their name in bold.

Depending on the type of a parameter, its value can be one of the following:

- A simple text field for simple parameter values.
- A combo box with some predefined values.
- A file chooser and an editor variable selector to simplify setting a file path as the value of a parameter.

Note: To input parameter values at runtime, use the *ask* editor variable in the **Value** column.

Below the table, the following actions are available for managing parameters:

New

Opens the **Add Parameter** dialog box that allows you to add a new parameter to the list. You can specify the **Value** of the parameter by using the **Insert Editor Variables** button or the **Browse** button.

Unset

Resets the selected parameter to its default value. Available only for edited parameters with set values.

Edit

Opens the **Edit Parameter** dialog box that allows you to change the value of the selected parameter or its description.

Delete

Removes the selected parameter from the list. It is available only for new parameters that have been added to the list.

WebHelp Responsive Parameters Contributed by an Oxygen Publishing Template

WebHelp Responsive transformation parameters that are defined in an *Oxygen Publishing Template* descriptor file are displayed in italics. After creating a publishing template and adding it to the templates gallery, when you select the template in the **Templates** tab, the **Parameters** tab will automatically be updated to include the parameters defined in the template descriptor file.

Related Information:

DITA Open Toolkit Documentation

Filters Tab (DITA Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Filters** tab allows you to add filters to remove certain content elements from the generated output.

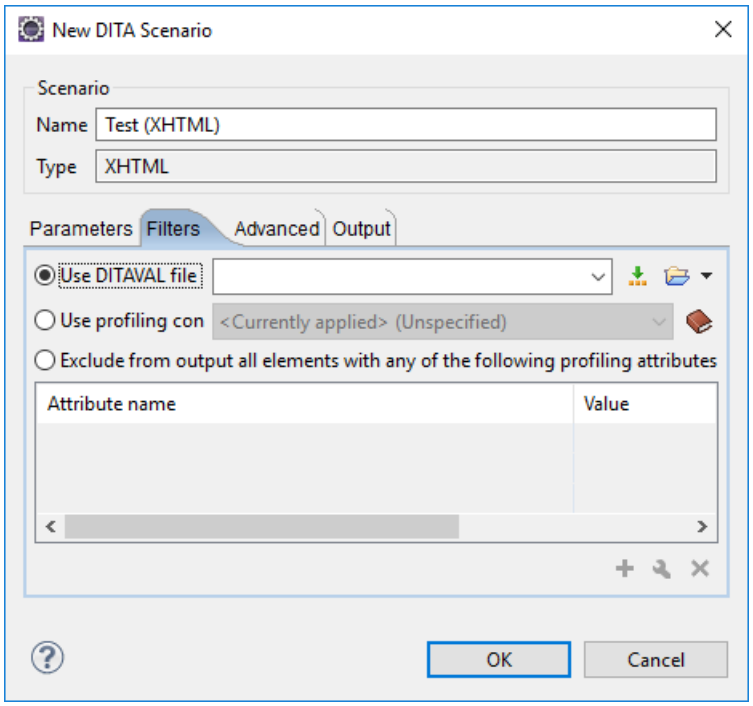


Figure 758: Edit Filters Tab

You can choose one of the following options to define filters:

Use DITAVAL file

If you already have a *DITAVAL* file associated with the *DITA map*, you can specify the file to be used when filtering content. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list. You can find out more about constructing a *DITAVAL* file in the DITA Documentation.

Attention: If a filter file is specified in the `args.filter` parameter (in the **Parameters** tab), that file takes precedence over a *DITAVAL* file specified here.

Use profiling condition set

Sets the profiling condition set that will be applied to your transformation.

Exclude from output all elements with any of the following attributes

By using the **New**, **Edit**, or **Delete** buttons at the bottom of the pane, you can configure a list of attributes (name and value) to exclude all elements that contain any of these attributes from the output.

Advanced Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Advanced** tab allows you to specify advanced options for the transformation scenario.

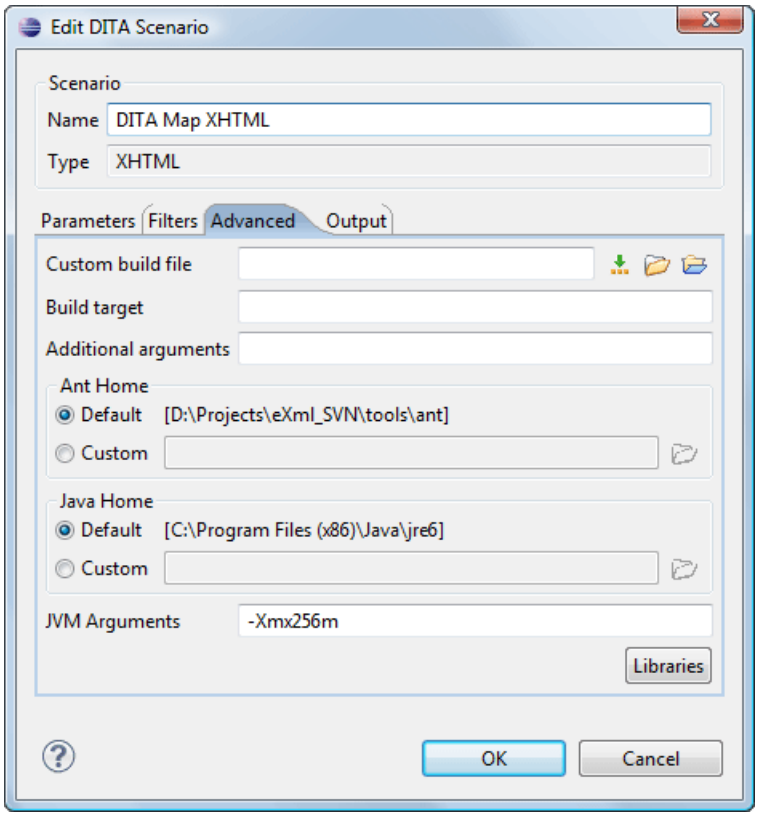


Figure 759: Advanced Settings Tab

You can specify the following parameters:

Custom build file

If you use a custom DITA-OT build file, you can specify the path to the customized build file. If empty, the `build.xml` file from the `dita.dir` parameter that is configured in the **Parameters** tab is used. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Build target

Optionally, you can specify a build target for the build file. If no target is specified, the default `init` target is used.

Additional arguments

You can specify additional command line arguments to be passed to the transformation (such as `-verbose`).

Ant Home

You can choose between the default or custom Ant installation to run the transformation.

Java Home

You can choose between the default or custom Java installation to run the transformation. The default path is the Java installation that is used by Oxygen XML Editor plugin.

Note: It may be possible that the used Java version is incompatible with the DITA Open Toolkit engine. For example, DITA-OT 2.0 and newer requires Java 1.7 or newer. Thus, if you encounter related errors running the transformation, consider installing a Java VM that is supported by the DITA OT publishing engine and using it in the **Java Home** text field.

JVM Arguments

This parameter allows you to set specific parameters for the Java Virtual Machine used by Ant. For example, if it is set to **-Xmx384m**, the transformation process is allowed to use 384 megabytes of memory. When performing a large transformation, you may want to increase the memory allocated to the Java Virtual Machine. This will help avoid *Out of Memory* error messages (**OutOfMemoryError**).

Libraries

By default, Oxygen XML Editor plugin adds libraries (as high priority) that are not transformation-dependent and also patches for certain DITA Open Toolkit bugs. You can use this button to specify additional libraries (*JAR* files or additional class paths) to be used by the Ant transformer.

Tip: You can specify the path to the additional libraries using wildcards (for example, `${oxygenHome}/lib/*.jar`).

Output Tab (DITA OT Transformations)

When you create a new transformation scenario or edit an existing one, a configuration dialog box allows you to customize the transformation with various options in several tabs.

The **Output** tab allows you to configure options that are related to the location where the output is generated.

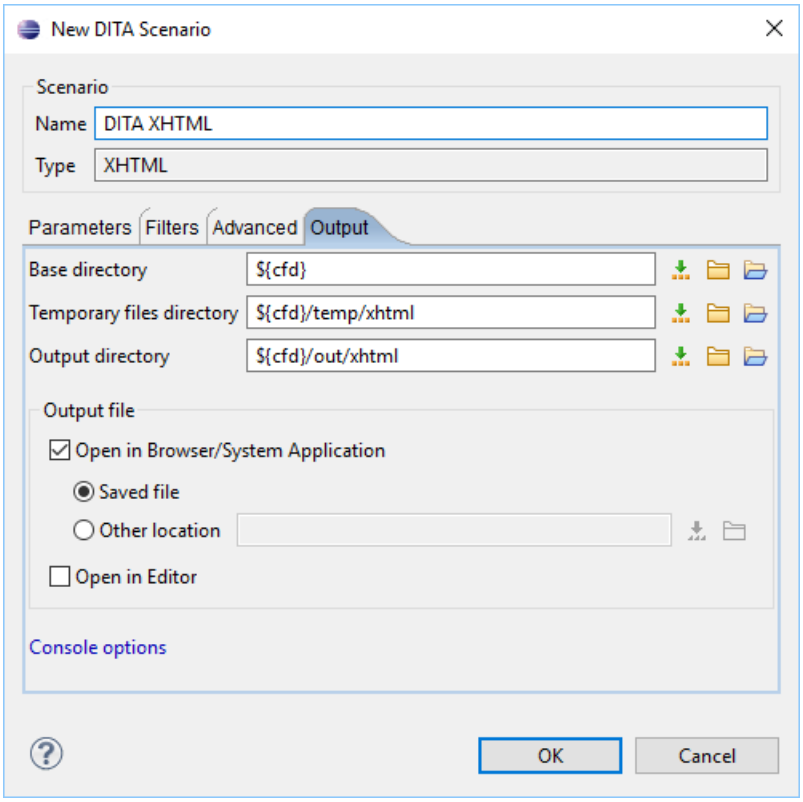


Figure 760: Output Settings Tab

You can specify the following parameters:

Base directory

All the relative paths that appear as values in parameters are considered relative to the base directory. The default value is the directory where the transformed map is located. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Temporary files directory

This directory is used to store pre-processed temporary files until the final output is obtained. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Output directory

The folder where the content of the final output is stored. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Note: If the *DITA map* or topic is opened from a remote location or a ZIP file, the parameters must specify absolute paths.

Open in Browser/System Application

If selected, Oxygen XML Editor plugin automatically opens the result of the transformation in a system application associated with the file type of the result (for example, in Windows *PDF* files are often opened in *Acrobat Reader*).

Note: To set the web browser that is used for displaying HTML/XHTML pages, go to **Window** > **Preferences** > **General** > **Web Browser** and specify it there.

- **Output file** - When **Open in Browser/System Application** is selected, you can use this button to automatically open the default output file at the end of the transformation.
- **Other location** - When **Open in Browser/System Application** is selected, you can use this option to open the file specified in this field at the end of the transformation. You can specify the path by using the text field, the **Insert Editor Variables** button, or the **Browse** button.

Open in editor

When this is option is selected, at the end of the transformation, the default output file is opened in a new editor panel with the appropriate built-in editor type (for example, if the result is an XML file it is opened in the built-in XML editor, or if it is an XSL-FO file it is opened with the built-in FO editor).

Customizing DITA Transformations

You can customize the appearance of any of the output types by customizing the output transformations. There are several ways to do this:

- Most transformations are configurable by passing parameters to the transformation script. Oxygen XML Editor plugin allows you to set parameters on a transformation scenario and you can save and share them with others. You can also use the **${ask}** editor variable in the **Parameters** tab to instruct Oxygen XML Editor plugin to prompt you for a particular parameter whenever a transformation scenario is run. You can set up multiple transformation scenarios for a given output type, allowing you to maintain several customized transformation scenarios for multiple types of output configurations.
- If you want to customize an output in a way not supported by the built-in customization options, you can create a modified version of the transformation code and execute it using a custom build file. Sometimes the transformation code exports specific forms of extensions or customizations. You should consult the DITA Open Toolkit for the transformation type that you are interested in to see what customization options are supported. Oxygen XML Editor plugin provides full editing and debugging support from XSLT and CSS stylesheets, which you can use to modify transformation code.
- You can also write your own transformation code (and execute it using a custom build file) to produce a type of output not supported by the DITA Open Toolkit. Oxygen XML Editor plugin provides a full source editing environment for developing such transformations. You can create Oxygen XML Editor plugin transformation scenarios to run these scripts once they are complete.

There are also many other ways to customize specific types of output generated from DITA transformations:

- **WebHelp** - For information about customizing WebHelp output, see the WebHelp Output section.
- **PDF** - For information about customizing PDF output generated from DITA content, see DITA Map to PDF Output Customization on page 1117.

Related Information:

Transforming DITA Content on page 1569

DITA Open Toolkit Documentation

Using a Custom Build File

You can use a *Custom Build File* to customize transformation scenarios.

To use a custom build file in a DITA-OT transformation, follow these steps:

1. Use the **Configure Transformation Scenario(s)** action to open the **Configure Transformation Scenario(s)** dialog box.
2. Select the transformation scenario and click **Edit**.
3. Go to the **Advanced** tab and change the **Custom build file** path to point to the custom build file.

As an example, if you want to call a custom script before running the DITA OT, your custom build file would have the following content:

```
<project basedir="." default="dist">
<!--The DITA OT default build file-->
 <import file="build.xml"/>
 <target name="dist">
  <!-- You could run your script here -->
  <!--<exec></exec>-->
   <!--Call the DITA OT default target-->
   <antcall target="init"/>
 </target>
</project>
```

Note: If you use the built-in Ant 1.9.8 build tool that comes bundled with Oxygen XML Editor plugin, it is located in the *[OXYGEN_INSTALL_DIR]*`/tools/ant` directory. Any additional libraries for Ant must be copied to the Oxygen XML Editor plugin Ant `lib` directory.

Adding a Watermark in DITA Map to XHTML Output

To add a watermark to the XHTML output of a *DITA map* transformation, follow these steps:

1. Create a custom CSS stylesheet that includes the watermark image, as in the following example:

   ```
   body {
    background-image: url(MyWatermarkImage.png);
   }
   ```

2. Edit a **DITA Map XHTML** transformation scenario and in the **Parameters** tab set the value of the `args.css` parameter as the path to your watermark image.
3. Set the value of the `args.copycss` parameter to **yes**.
4. Apply the transformation scenario.
5. Copy the watermark image in the output directory of the transformation scenario, next to the CSS file created in step 1.

Related Information:

Adding a Watermark to PDF Output on page 1118

DITA Profiling / Conditional Text

DITA offers support for conditionally profiling content by using profiling attributes. With Oxygen XML Editor plugin, you can define values for the DITA profiling attributes and they can be easily managed to filter content in the published output. You can switch between profile sets to see how the edited content looks like before publishing.

Oxygen XML Editor plugin includes a **Profiling/Conditional Text** preferences page where you can create and manage profiling attributes and condition sets. Oxygen XML Editor plugin also offers convenient support for customizing and controlling profiling attribute values with a subject scheme or DITAVAL file.

Profiling Attributes

You can profile content elements or map elements by adding one or more of the default DITA profiling attributes (`product`, `platform`, `audience`, `rev`, `props`, and `otherprops`). You can also create your own custom profiling attributes and profiling condition sets. The profiling attributes may contain one or more tokens that represent conditions to be applied to the content when a publication is built.

For example, you could define a section of a topic that would only be included for a publication related to the Windows platform by adding the `platform` profiling attribute:

```
<section platform="windows">
```

For information about creating and editing profiling attributes, see Creating and Editing Profiling Attributes in DITA on page 1592.

Profiling Conditions

DITA allows you to conditionally profile parts of a topic so that certain parts of the topic are displayed when certain profiling conditions are set. Profiling conditions can be set both within topics and in maps. When set in a topic, they allow you to suppress an element (such as paragraph), step in a procedure, item in a list, or even a phrase within a sentence. When set in a map, they allow you to suppress an entire topic or group of topics. You can then create a variety of publications from a single map by applying profiling conditions to the build.

For information about creating and editing condition sets, see Creating and Editing Profiling Condition Sets in DITA on page 1595 .

For more information about DITA profiling, watch our video demonstration:

https://www.youtube.com/embed/Gfyd4TkRQAw

Creating and Editing Profiling Attributes in DITA

You can filter DITA content or the structure of a document by using profiling attributes or profiling conditions sets.

Defining Profiling Attributes for DITA Content

To define or edit profiling attributes for filtering DITA content, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling / Conditional Text**.
2. In the **Profiling Attributes** section, there are already some default attributes for DITA documents (`audience`, `platform`, `product`, `otherprops`, and `rev`), although if a *Subject Scheme Map* is used for profiling your content, you will see the attributes defined in your *subject scheme map* instead. You can add new attributes and values by clicking the **New** button at the bottom of the table, or customize existing attributes and their values by selecting an attribute and clicking the **Edit** button.

   Step Result: This opens a **Profiling Attribute** configuration dialog box that allows you to define attributes that exist in your schema.
3. In this configuration dialog box, use the **New**, **Edit**, **Delete** buttons to add, edit, or delete possible values of the selected attribute. You can also specify an optional description for each attribute value and you can choose whether the attribute accepts a **Single value** or **Multiple values separated by** a delimiter (DITA only accepts *space* as delimiters for attribute values).
4. Click **OK** to accept your changes.

Result: You should see your changes in the **Profiling Attribute** table.

You can also use the **Profiling Condition Sets** section to apply more complex filters on you DITA content.

Editing Profiling Attribute Values

There are several ways to add values to existing profiling attributes.

- Use the procedure in Defining Profiling Attributes for DITA Content on page 1592 to edit an existing attribute and use the **Profiling Attribute** configuration dialog box to add, edit, or delete values for existing profiling attributes.
- You can add values directly to the existing profiling attributes in a document using the In-Place Attributes Editor in **Author** mode, the **Attributes** view, or in the source code in **Text** mode. However, this just adds them to the document and does not change the conditional text configuration. If you invoke the **Edit Profiling Attributes** action (from the contextual menu in **Author** mode) on the new value, the **Profiling Values Conflict**

dialog box will appear and it includes an **Add these values to the configuration** action that will automatically add the new value to the particular profiling attribute. It also includes an **Edit the configuration** action that opens the **Profiling / Conditional Text** preferences page where you can edit the profiling configuration. The action selected by default is to preserve the current configuration.

Note: If the **Allow additional profiling attribute values collected from the document** option is not selected in the **Profiling / Conditional Text** preferences page, the **Profiling Values Conflict** dialog box will never appear, the current conditional text configuration will be preserved, and therefore the second method mentioned above will not be available.

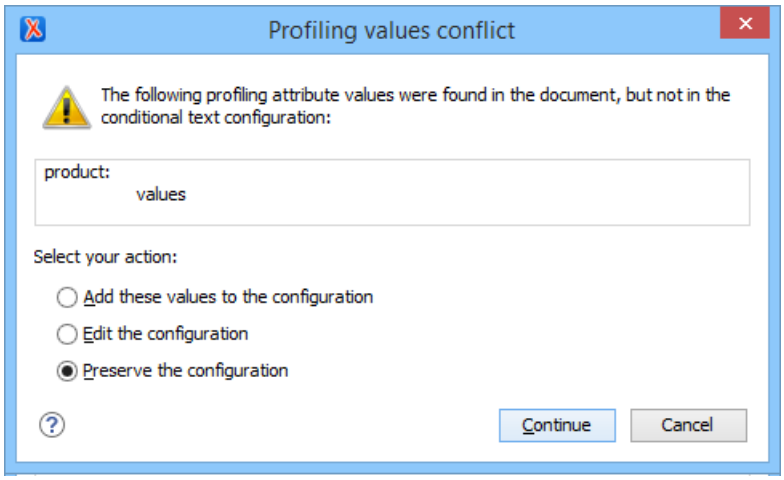


Figure 761: Profiling Values Conflict Dialog Box

Related Information:

Applying Profiling Attributes in DITA on page 1593
Creating and Editing Profiling Condition Sets in DITA on page 1595
Applying Profiling Condition Sets in DITA on page 1596
Showing and Filtering Profiled Content in DITA on page 1598
Customizing Colors and Styles for Rendering Profiling in Author Mode on page 1600

Applying Profiling Attributes in DITA

Profiling attributes are applied on element nodes. You can apply profiling attributes on a text fragment (it will automatically be wrapped into a phrase-type element), on a single element, or on multiple elements in the same time. If there is no selection in your document, the profiling attributes are applied on the element at the cursor position.

You can apply defined DITA profiling attributes as follows:

DITA Topics

To profile DITA topics, right-click a topic reference in the **DITA Maps Manager**, select **Edit Properties** from the contextual menu, go to the **Profiling** tab, and select the appropriate values.

DITA Content

To profile DITA content in **Author** mode, highlight the content and select **Edit Profiling Attributes** from the contextual menu and select the appropriate values in the **Edit Profiling Attributes** dialog box.

DITA Elements

To profile specific XML elements in **Author** mode, position the cursor inside the element, right-click, select **Edit Profiling Attributes** (you can also right-click the element in the *breadcrumb* or **Outline** view), and select the appropriate values in the **Edit Profiling Attributes** dialog box. You can also use the **Attributes** view to set the profiling attributes on the element at the current cursor position.

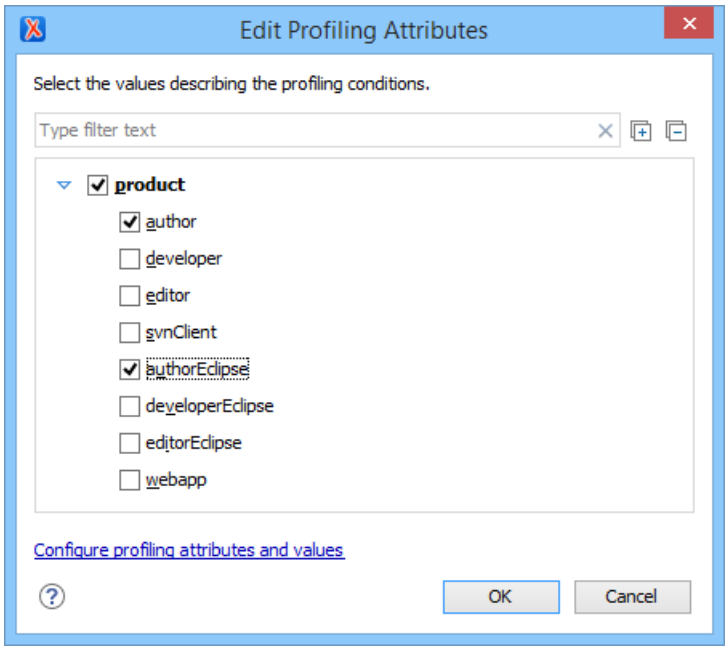


Figure 762: Edit Profiling Attributes Dialog Box

The profiling attributes, and their potential values, that appear in this dialog box depend on what has been configured in Oxygen XML Editor plugin. If you have a large list of profiling attributes, you can use the text filter field to search for attributes or values, and you can expand or collapse attributes by using the **Expand All**/**Collapse All** buttons to the right of the text filter or the arrow button to the left of the profiling attribute name.

The attributes and values that appear in the dialog box are determined as follows:

- If your *root map* references a DITA *subject scheme map* that defines values for the profiling attributes, those values are used. Oxygen XML Editor plugin collects all the profiling values from the *subject scheme map* that is referenced in the map that is currently opened in the **DITA Maps Manager** (or set as the *root map*). In the image above (taken from the Oxygen XML Editor plugin documentation project), you see values for eight products. They are the only values that are defined in the *subject scheme map* and thus, are the only ones that appear in the dialog box.
- If you have defined profiling attribute values for the DITA document type in the **Profiling/Conditional Text** preferences page, those values are displayed in the dialog box.
- Otherwise, a generic default set of profiling attributes and values are available.

If the **Show Profiling Attributes** option (available in the **Profiling / Conditional Text** toolbar menu) is selected, a green border is painted around profiled text in the **Author** mode and all profiling attributes set on the current element are listed at the end of the highlighted block. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

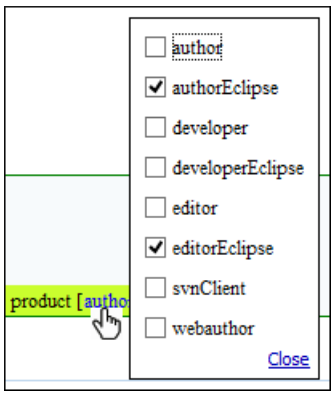


Figure 763: Profiling Attribute Value Form Control Pop Up

Related Information:

Creating and Editing Profiling Attributes in DITA on page 1592
Creating and Editing Profiling Condition Sets in DITA on page 1595
Applying Profiling Condition Sets in DITA on page 1596
Showing and Filtering Profiled Content in DITA on page 1598
Customizing Colors and Styles for Rendering Profiling in Author Mode on page 1600

Creating and Editing Profiling Condition Sets in DITA

In DITA, profiling conditions can be set both within topics and in maps. When set in a topic, they allow you to suppress an element (such as paragraph), step in a procedure, item in a list, or even a phrase within a sentence. When set in a map, they allow you to suppress an entire topic or group of topics.

Creating Profiling Condition Sets

To create a new profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, press the **New** button.

   Step Result: The **Condition Set** configuration dialog box is opened.

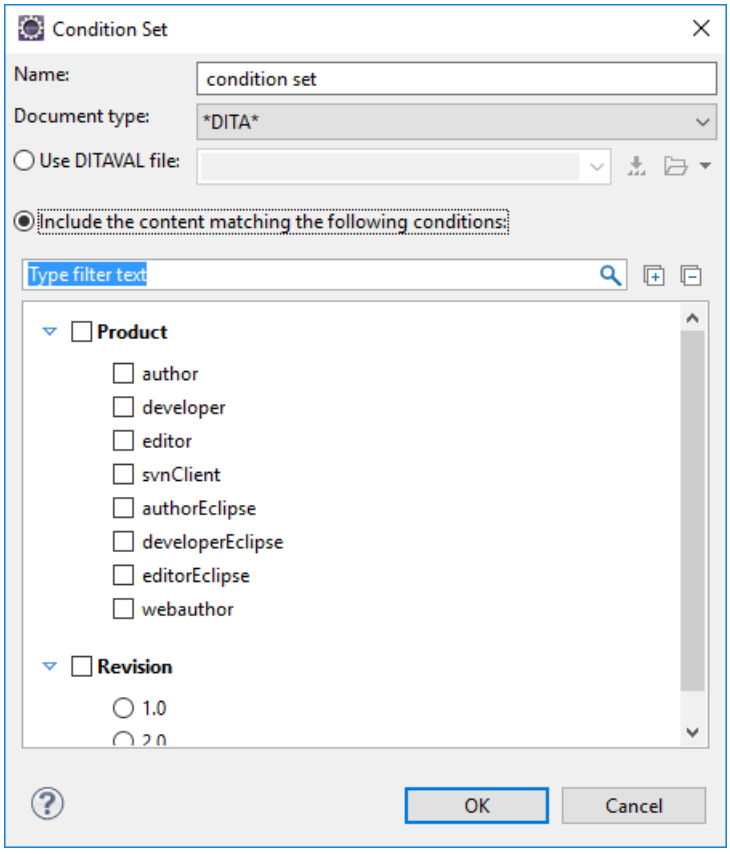


Figure 764: Condition Set Dialog Box

3. Configure your condition set as desired. The following options are available in this dialog box:

   Name

   The name of the new condition set.

   Document type

   Select the document type (*framework*) for which you have defined profiling attributes.

Use DITAVAL file

Select this option if you want the *Profiling Condition Set* to reference a DITAVAL file. You can specify the path by using the text field, its history drop-down, the **Insert Editor Variables** button, or the browsing tools in the **Browse** drop-down list.

Include the content matching the following conditions

You can select this option to define the combination of attribute values for your condition set by selecting the appropriate checkboxes for the values you want to be included in this particular condition set. If you have defined a lot of profiling attributes, you can use the **filter** text field to search for specific conditions.

4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save the condition set. All saved profiling condition sets are available in the **Profiling / Conditional Text** toolbar drop-down menu.

Editing Existing Profiling Condition Sets

To modify an existing profiling condition set, follow these steps:

1. Open the **Preferences** dialog box and go to **Editor** > **Edit modes** > **Author** > **Profiling/Conditional Text**.
2. In the **Profiling Condition Sets** section, the **Edit** button to modify an existing condition set (you can also use **Delete** button to remove a condition set or the **Up** and **Down** buttons to change their priority).

Step Result: If you use the **Edit** button, the **Condition Set** configuration dialog box is opened:

3. Modify your condition set as desired.
4. Click **OK** to confirm your selections and close the **Condition Set** configuration dialog box.
5. Click **Apply** to save your modifications.

Related Information:

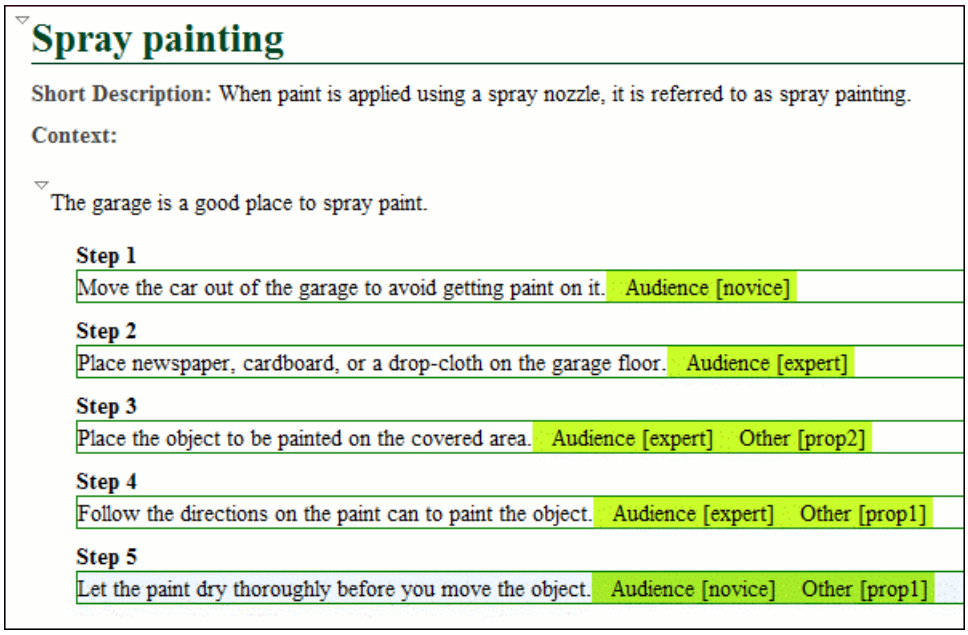
Applying Profiling Condition Sets in DITA on page 1596
Creating and Editing Profiling Attributes in DITA on page 1592
Applying Profiling Attributes in DITA on page 1593
Showing and Filtering Profiled Content in DITA on page 1598
Customizing Colors and Styles for Rendering Profiling in Author Mode on page 1600

Applying Profiling Condition Sets in DITA

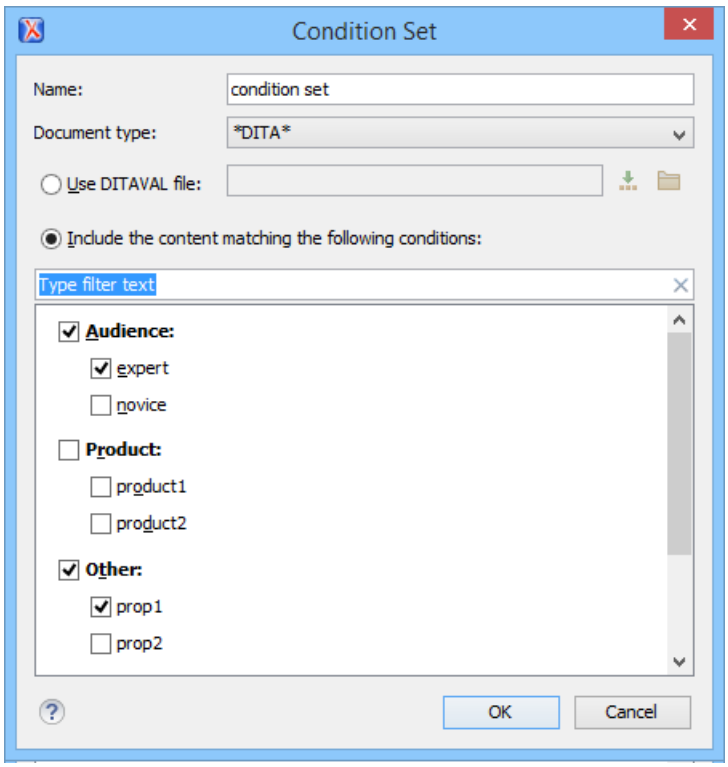
All defined Profiling Condition Sets are available as shortcuts in the **Profiling / Conditional Text** toolbar menu. Select a menu entry to apply the condition set. The filtered content is then grayed-out in the **Author** mode, **Outline** view, and **DITA Maps Manager** view (for DITA documents). Your selection will also be used as the default condition set in transformation scenarios. An element is filtered-out when one of its attributes is part of the condition set and its value does not match any of the value covered by the condition set.

EXAMPLE:

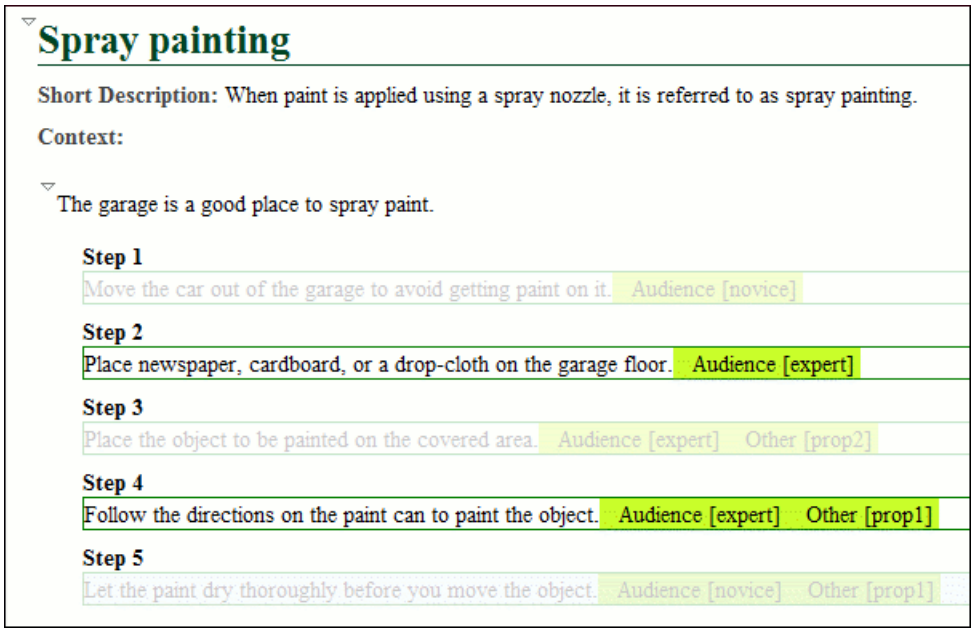
Suppose that you have the following document:



If you apply the following condition set, it means that you want to filter out the content to only include content written for an expert audience and content that has the *Other* attribute value of *prop1*.



This is how the document looks after you apply the condition set:



Related Information:

Creating and Editing Profiling Condition Sets in DITA on page 1595
Creating and Editing Profiling Attributes in DITA on page 1592
Applying Profiling Attributes in DITA on page 1593
Showing and Filtering Profiled Content in DITA on page 1598
Customizing Colors and Styles for Rendering Profiling in Author Mode on page 1600

Showing and Filtering Profiled Content in DITA

You can visualize the effect of profiling content by using the profiling tools in the **Profiling/Conditional Text** drop-down menu that is located on the **DITA Maps Manager** toolbar and on the main toolbar. This drop-down menu includes the following filtering options:

Show Profiling Colors and Styles

Select this option to show colors and styles for profiled content in **Author** mode and the **DITA Maps Manager**. You can configure the colors and styles or specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Colors and Styles** preferences page.

Show Profiling Attributes

Select this option to display the values of the profiling attributes at the end of profiled content in **Author** mode and next to the nodes in the **DITA Maps Manager**. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** > **Attributes Rendering** preferences page.

Show Excluded Content

Controls whether the content filtered out by a particular condition set is hidden or grayed-out in **Author** mode, the **DITA Maps Manager**, and the **Outline** view. When this option is selected and a condition set is selected in this drop-down menu, the filtered content is grayed-out. If this option is not selected and a condition set is selected in this drop-down menu, the filtered content is hidden. You can specify whether or not this option is selected by default in the **Profiling/Conditional Text** preferences page.

Choose Condition Set (Available if more than 15 condition sets are defined)

This option is available if you have more than 15 conditions sets defined. It opens a dialog box that makes it easier to find and select condition sets that are not displayed in this drop-down menu.

List of Defined Condition Sets

Up to 15 defined condition sets are listed and you can toggle each one of them on to filter the content in **Author** mode and the **DITA Maps Manager** to only show content that will appear in the output for that particular condition set. If there are more than 15 defined condition sets, the rest of them can be accessed

in the **More** submenu or by using the **Choose Condition Set** option to access a dialog box that presents all of them.

Profiling Settings

Opens the **Profiling/Conditional Text** preferences page where you can add and edit profiling attributes and condition sets.

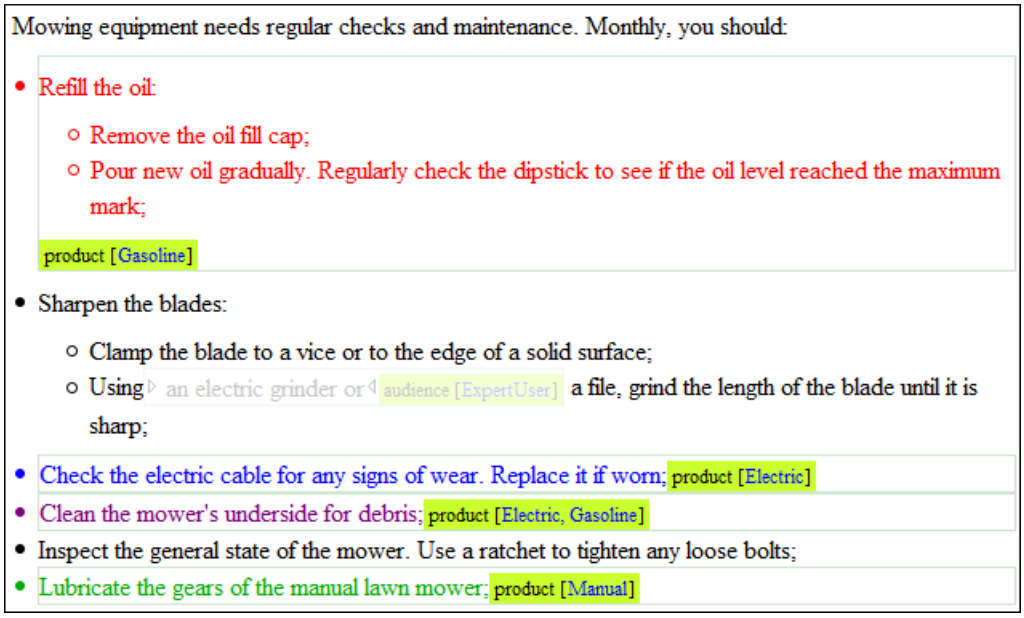


Figure 765: Example: Profiling Controls in Author Mode

If the **Show Profiling Attributes** option is selected, a green border is painted around profiled text in the **Author** mode. Also, all profiling attributes set on the current element are listed at the end of the highlighted block and in its tooltip message. To edit the attributes of a profiled fragment, click one of the listed attribute values. A form control pops up and allows you to add or remove attribute values.

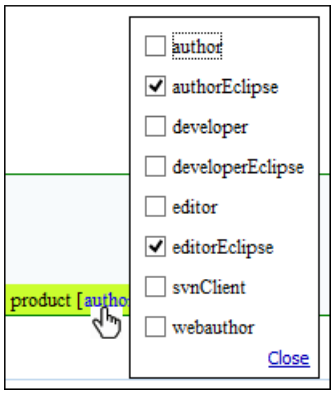


Figure 766: Profiling Attribute Value Form Control Pop Up

Also, the following icons are used to mark profiled and non-profiled topics in the **DITA Maps Manager**:

- - The topic contains profiling attributes.
- - The topic inherits profiling attribute from its ancestors.
- - The topic contains and inherits profiling attributes.
- - (dash) - The topic neither contains, nor inherits profiling attributes.

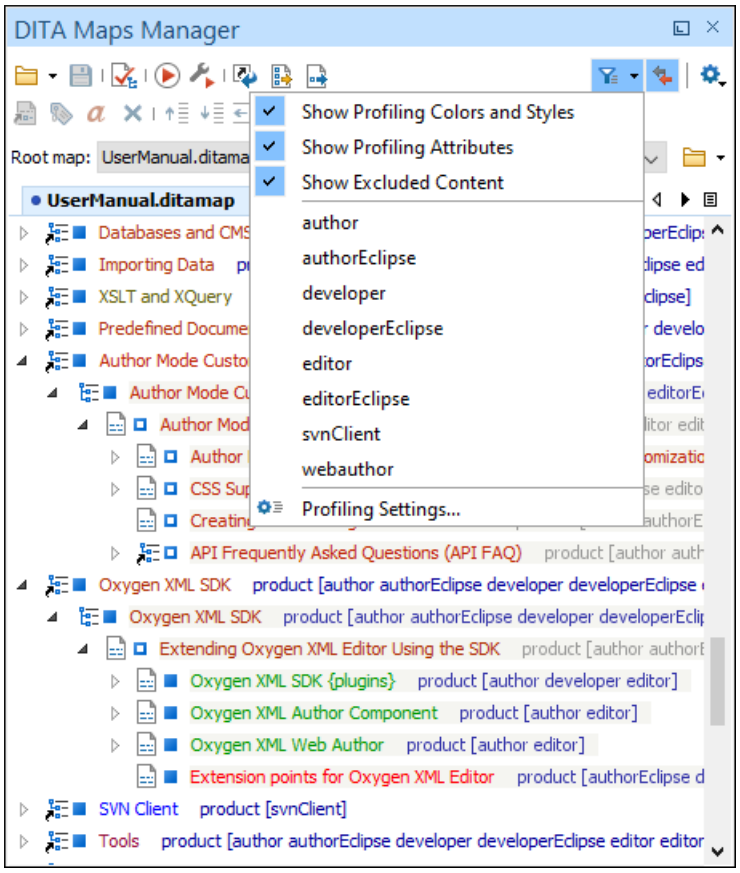


Figure 767: Rendering Profiled Topics in DITA Maps Manager

Related Information:

Creating and Editing Profiling Condition Sets in DITA on page 1595
Applying Profiling Attributes in DITA on page 1593
Creating and Editing Profiling Attributes in DITA on page 1592
Applying Profiling Condition Sets in DITA on page 1596
Customizing Colors and Styles for Rendering Profiling in Author Mode on page 1600

Customizing Colors and Styles for Rendering Profiling in Author Mode

By applying profiling colors and styles, you can mark profiled content in **Author** mode and the **DITA Maps Manager** so that you can instantly spot differences between multiple variants of the output. This allows you to preview the content that will go into the published output. The excluded text is grayed-out or hidden in **Author** mode and excluded nodes are grayed-out or hidden in the **DITA Maps Manager**.

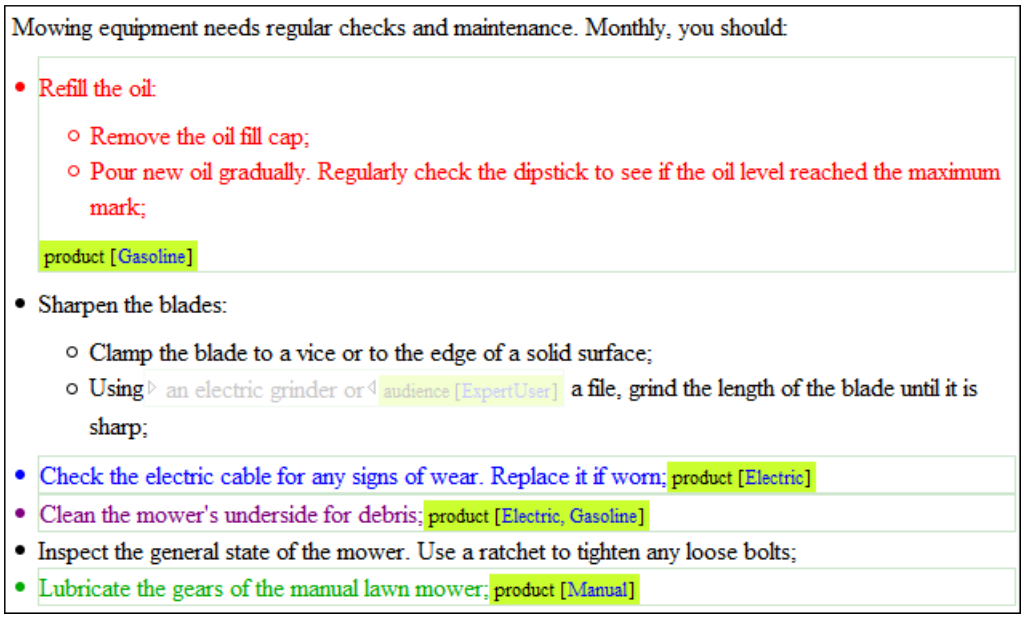


Figure 768: Example: Profiling Colors and Styles in Author Mode

Choosing the right style for a specific profiling attribute is a matter of personal taste, but be aware of the following:

- If the same block of text is profiled with two or more profiling attributes, their associated styles combine. Depending on the styling, this might result in an excessively styled content that may prove difficult to read or work with.
- It is recommended that you only profile the differences. There is no need to profile common content, since excessive profiling can visually pollute the document.
- A mnemonic associated with a style will help you instantly spot differences in the types of content.

Styling Profiling Attribute Values

To set colors and styles for profiling attribute values, follow these steps:

1. Select the **Show Profiling Colors and Styles** option from the **Profiling / Conditional Text** toolbar drop-down menu.
2. Select **Profiling Settings** from the **Profiling / Conditional Text** toolbar drop-down menu. This is a shortcut to the **Profiling/Conditional Text** preferences page.
3. Go to the **Colors and Styles** preferences page to configure the colors and styling for the profiling attributes.
4. Go to the **Attributes Rendering** preferences page to configure how you want the profiling attributes to appear in Oxygen XML Editor plugin.

Result: The styling is now applied in the **Author** editing mode, the **Outline** view, and in the **DITA Maps Manager** view. Also, to help you more easily identify the profiling you want to apply in the current context, the styling is applied in the **Edit Profiling Attributes** dialog box and in the inline form control pop up that allows you to quickly set the profiling attributes.

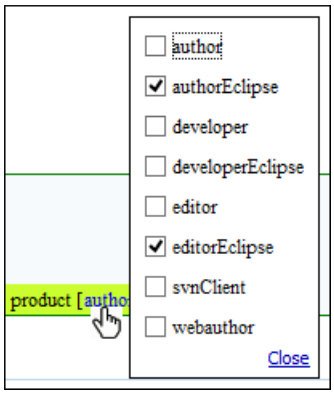


Figure 769: Profiling Attribute Value Form Control Pop Up

Alternate Method with a DITAVAL File: If you are using a DITAVAL filter file to control the filtering of profiled content in DITA topics, you can use a flag filter to define the colors and styles that will be used when rendering the profiling. For detailed information about this alternate method, see the procedure in the Styling the Rendering of Profiled Content Using a DITAVAL File on page 1607 topic.

Related Information:

Creating and Editing Profiling Condition Sets in DITA on page 1595
Applying Profiling Attributes in DITA on page 1593
Creating and Editing Profiling Attributes in DITA on page 1592
Applying Profiling Condition Sets in DITA on page 1596
Showing and Filtering Profiled Content in DITA on page 1598

Customizing Profiling Values with a Subject Scheme Map

A *subject scheme map* allows you to create and manage custom profiling values in DITA documents without having to write a DITA specialization. Ultimately, this allows you to filter and flag content in **Author** mode or in transformed output.

Advantages of Using a Subject Scheme Map

The advantages of using a subject scheme to control profiling attribute values include:

- You can create a hierarchy of profiling attribute values and use a DITAVAL file to filter or flag the tree of values.
- You can share the subject scheme files with others without having to share preferences or the entire project.
- The subject scheme offers validation support so you are notified if an undefined value is used.

Overview

Subject scheme maps use key definitions to define a collection of profiling values. You can also use *subject scheme maps* to filter out (reject) the values for certain attributes so that you only see the attributes or values that you want to use in **Author** mode or the transformed output.

The highest level of map (*main DITA map*) that uses the set of profiling values must reference the *subject scheme map* where the profiling values are defined and the `type` attribute needs to be set to `subjectScheme` for the reference, as in the following example:

```
<topicref href="test.ditamap" format="ditamap" type="subjectScheme"/>
```

Creating a Subject Scheme Map

To create and configure a *subject scheme map*, follow this procedure:

1. Use the **New Document** wizard to create a new **Subject Scheme** document (**New from Templates** > **Framework templates** > **DITA Map** > **map** > **Subject Scheme**).

2. Use the controls in **Author** mode to define the hierarchical tree of values for your *subject scheme* (see the Author mode example below) or switch to **Text** mode and define it there if you prefer (see the Text mode example below).

   Note: The pre-defined subject scheme template includes Navigation Titles (`navtitle` element). This element is not required, but if you use it, the text that you enter for the `navtitle` will be used (instead of the name of the value) in the various places where profiling attributes are presented in Oxygen XML Editor plugin. An example of when this might be helpful is if you want to use abbreviations for the name of a value, but you want to see its full name in Oxygen XML Editor plugin.
3. Bind the particular attribute to the key you define for the tree of values. Notice that in the examples below, the `audience` attribute is bound to the `audienceKey` value.
4. If you want to filter out (reject) values for certain attributes, bind the attributes to a blank value (as you see for the `props` and `otherprops` attributes in the examples below). This means that those attributes will not appear in the various places where profiling attributes are presented in Oxygen XML Editor plugin.
5. Save your *subject scheme* file.
6. Reference your *subject scheme* in the highest level of map (*main DITA map*) that will use the set of profiling values and set its type to `subjectScheme`. The easiest way to do this is:
   a. With your *subject scheme* file opened in the editor, go to the **DITA Maps Manager** view, right-click the *main DITA map*, and select **Append Child** > **Reference to the currently edited file**.
   b. In the **Insert Topic Reference** dialog box, go to the **Attributes** tab and in the **Type** field, enter or select **subjectScheme**.
   c. Click the **Insert and Close** button and save your main DITA map.

Using a Subject Scheme in Conjunction with a DITAVAL File

You can use a subject scheme to customize a hierarchy of profiling attribute values and then use it in conjunction with a DITAVAL file to filter or flag the entire tree of values. For example, suppose one of the values for the `audience` attribute in a hierarchical subject scheme is `surgeon` and it has two subordinate values of `neuro-surgeon` and `plastic-surgeon` (see the examples below). You could create a DITAVAL file with the following content:

```
<val>
     <prop action="exclude" att="audience" val="surgeon"/>
</val>
```

That DITAVAL file could then be used for a condition set to filter content in **Author** mode or during the transformation stage to filter content in the output and the `neuro-surgeon` and `plastic-surgeon` values would be excluded by the filter since the subject scheme defines them as subordinate values of the `surgeon` value.

Example: Subject Scheme Map that Defines Custom Values for the Audience Attribute

This example uses typical audience values for medical personnel (`therapist`, `oncologist`, `physicist`, `radiologist`, `surgeon`, and so on). The `audience` attribute is bound to the `audienceKey` value (which defines the tree of values). You can also see that it filters out all possible values for other attributes (`props` and `otherprops`) so that they won't be available in the various places where profiling attributes are presented in Oxygen XML Editor plugin.

Example using Author mode controls:

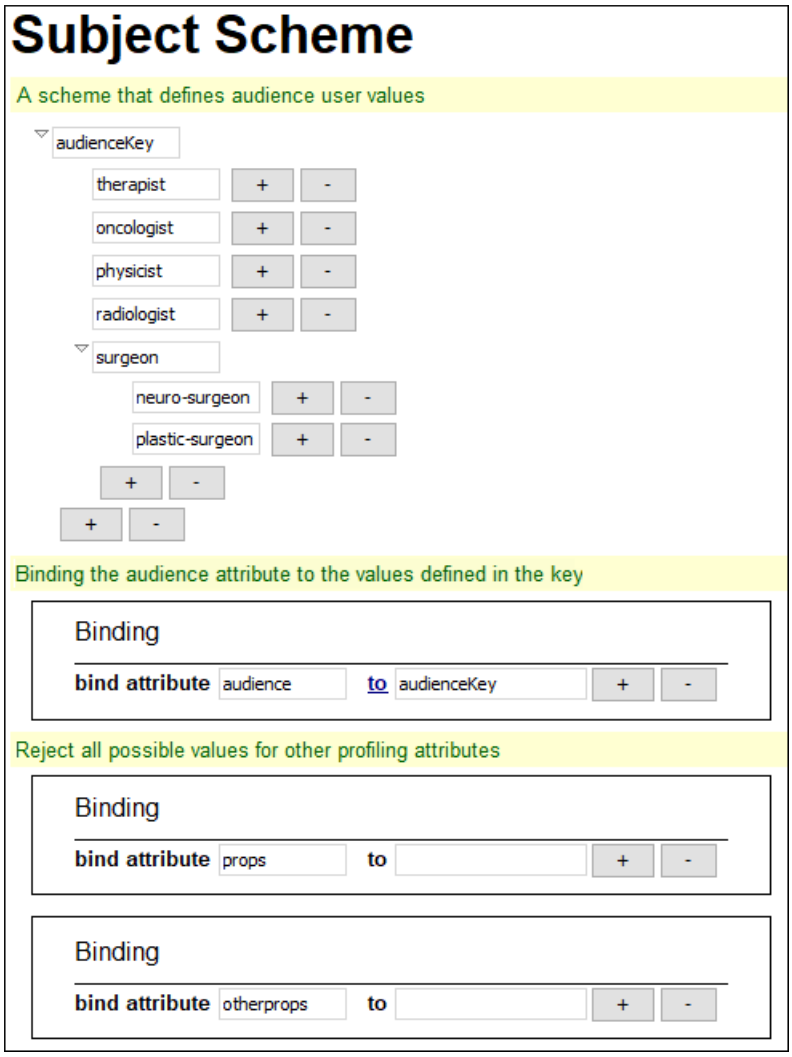


Figure 770: Subject Scheme Author Mode Controls

Example code in Text mode:

```
<subjectScheme>
  <!-- A scheme that defines audience user values -->
  <subjectdef keys="audienceKey">
    <subjectdef keys="therapist"/>
    <subjectdef keys="oncologist"/>
    <subjectdef keys="physicist"/>
    <subjectdef keys="radiologist"/>
    <subjectdef keys="surgeon">
      <subjectdef keys="neuro-surgeon"/>
      <subjectdef keys="plastic-surgeon"/>
    </subjectdef>
  </subjectdef>
  <!-- Binding the audience attribute to the values defined in the key -->
  <enumerationdef>
    <attributedef name="audience"/>
    <subjectdef keyref="audienceKey"/>
  </enumerationdef>

  <!--Reject all possible values for other profiling attributes-->
  <enumerationdef>
    <attributedef name="props"/>
    <subjectdef/>
  </enumerationdef>
  <enumerationdef>
    <attributedef name="otherprops"/>
    <subjectdef/>
  </enumerationdef>
</subjectScheme>
```

Where the Profiling Attributes are Available in Oxygen XML Editor plugin

When you edit a DITA topic in the **Text** or **Author** mode, Oxygen XML Editor plugin collects all the profiling values from the *subject scheme map* that is referenced in the map that is currently opened in the **DITA Maps Manager** (or set as the *root map*). The values of profiling attributes defined in a *Subject Scheme Map* are available in the following places in Oxygen XML Editor plugin (regardless of their mapping in the **Profiling/Conditional Text** preferences page):

- The **Profiling** tab of the **Edit Properties** dialog box.
- The **Edit Profiling Attribute** dialog box.
- The inline profiling controls in **Author** mode.
- The proposals for the attribute values in the *Content Completion Assistant*.

More Details

For more details about hierarchical filtering, defining controlled values, and using *subject scheme maps*, refer to the following resources:

- DITA 1.3 Specifications: Subject Scheme Maps
- Oxygen Video Tutorial: DITA Subject Scheme

Related Information:

Filtering Profiling Values with a DITAVAL File on page 1605

Filtering Profiling Values with a DITAVAL File

You can use a DITAVAL filter file to control the filtering or flagging of profiled content or to identify which values are to be used for conditional processing during a particular output.

DITAVAL Filtering Use-Case

Suppose that a medical publication uses the `audience` attribute to profile the content for the following types of users: *therapist*, *physician*, and *surgeon*. Suppose that in the output, you want to exclude any content that is profiled as `surgeon` value for the `audience` attribute.

You could use a DITAVAL filter file to exclude anything that is profiled as `surgeon`:

```
<val>
     <prop action="exclude" att="audience" val="surgeon"/>
</val>
```

If you then transform the main *DITA map* and specify the DITAVAL filter file in the transformation scenario, the output will exclude anything that is profiled as `surgeon`).

DITAVAL Filter File Editor in Author Mode

The **Author** editing mode in Oxygen XML Editor plugin offer a simple and intuitive editor for creating or modifying DITAVAL files. It provides a series of drop-down menus and text fields that allow you to easily define the filters.

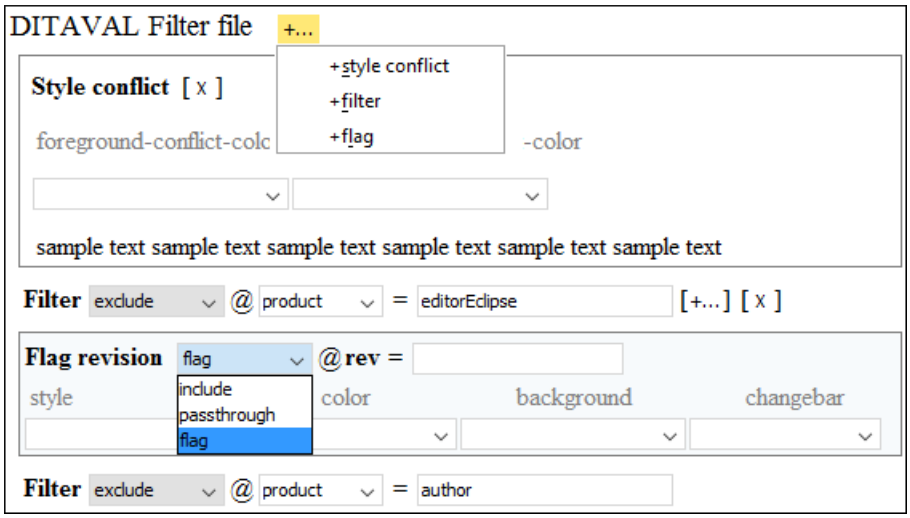


Figure 771: DITAVAL File Editor in Author Mode

Use the **+...** button to display a drop-down list that contains elements that you can add at that particular location in the DITAVAL file. Clicking this button at the top (next to the **DITAVAL FILTER File** title, allows you to insert the following elements:

- **Style Conflict** - Inserts a *style-conflict* element that declares behavior to be used when one or more flagging methods collide on a single content element. You can use the simple drop-down menus to select values for the `foreground-conflict-color` and `background-conflict-color` attributes.
- **Filter** - Inserts a *prop* element that identifies an attribute to apply a filtering action on. The possible actions that you can select are *include*, *exclude*, *passthrough*, and *flag*. If you select the *flag* action, you can use the drop-down menus to select values for the `style`, `color`, and `background` attributes.
- **Flag** - Inserts a *revprop* element that Identifies a value in the `rev` attribute that should be flagged in some manner. The allows actions are *include*, *passthrough*, and *flag*. If you select the *flag* action, you can use the drop-down menus to select values for the `style`, `color`, `background`, and `changebar` attributes.

See the DITAVAL Element Specifications for more details about the allowed filters and flags.

How to Create a DITAVAL Filter File

To create a DITAVAL filter file, follow these steps:

1. Go to **File** > **New**.
2. Scroll to the **Framework templates** > **DITAVAL** folder.
3. Select the **Filter** template file and click **Create**.
4. Define your filters in the DITAVAL file (in **Text** or **Author** mode).
5. Save the DITAVAL file.

Result: The DITAVAL filter file can now be used for all of the following:

- To apply a reference to the DITAVAL file in a *Profiling Condition Set* using the **Use DITAVAL File** option in the **Condition Set** configuration dialog box.
- You can use the **Import from DITAVAL** option in the **Profiling/Conditional Text** preferences page to use the DITAVAL file to define profiling attributes.
- You can use the DITAVAL file to apply the filters to the output by specifying the DITAVAL file in the transformation scenario.
- You can use the filter file in the **DITA Map Completeness Check** dialog box when validating your *DITA map*.
- DITAVAL files are also used when working with the DITA 1.3 *Branch Filtering* mechanism. For more details, see: Working with DITA 1.3 Branch Filtering on page 1557.
- You can define the colors and styles to be used for rendering profiled condition sets in **Author** mode and the **DITA Maps Manager** view by using a **Flag** filter in the DITAVAL file.

Related Information:

DITAVAL Element Specifications

Working with DITA 1.3 Branch Filtering on page 1557
Customizing Profiling Values with a Subject Scheme Map on page 1602
Styling the Rendering of Profiled Content Using a DITAVAL File on page 1607

Styling the Rendering of Profiled Content Using a DITAVAL File

If you are using a DITAVAL filter file to control the filtering of profiled content, you can define the colors and styles to be used for rendering profiled condition sets in **Author** mode and the **DITA Maps Manager** by defining the styles in a flag filter that is set in a DITAVAL filter file.

How to Define a Flag for a Condition Set in a DITAVAL Filter File

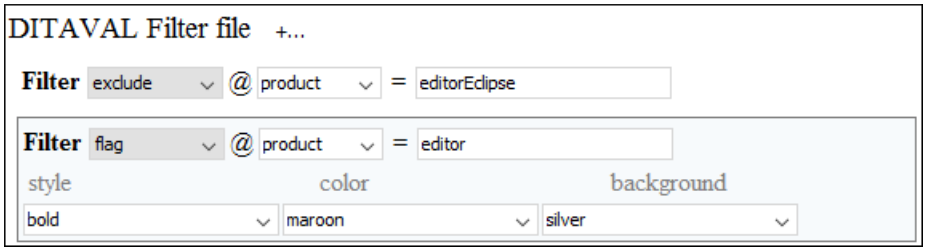
To define the colors and styles to be used for rendering profiled condition sets by using a flag filter in a DITAVAL filter file, follow these steps:

1. Create or edit your DITAVAL file to define your profiling condition set.
2. In **Author** mode, define the filters for your condition set.
3. Select **Flag** from the drop-down menu on in a particular **Filter** or **Flag Revision** to present additional drop-down menus that allow you to configure the colors and styles for the particular condition set.
4. Save the DITAVAL file.

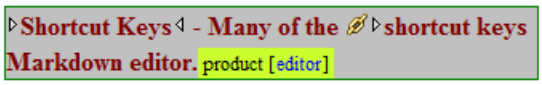
Result: Test your changes by opening profiled content in **Author** mode or the **DITA Maps Manager** and use the options in the **Profiling / Conditional Text** drop-down menu to see how the changes in your DITAVAL flag are rendered.

EXAMPLE:

Using a **Flag** on a **Filter** to define the styling for a condition set like this:



will render the styling of the profiled content in **Author** mode to look like this:



and will render the styling in the **DITA Maps Manager** view to look like this:

Related Information:

Filtering Profiling Values with a DITAVAL File on page 1605

Publishing Profiled DITA Content

You can create a variety of publications or versions of your documentation from a single map by applying profiling conditions to the build.

Oxygen XML Editor plugin includes preconfigured transformation scenarios for DITA. By default, these scenarios take the current profiling condition set into account during the transformation, as defined in the **Filters** tab when creating a DITA transformation. You can also specify a DITAVAL file that defines filters for your profiled content.

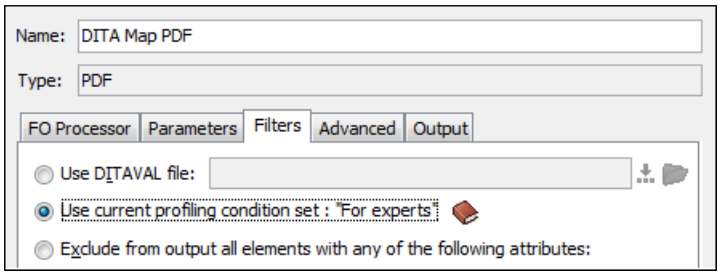


Figure 772: Profiling Option in the Filters Tab (DITA OT Transformations)

DITA Open Toolkit Support

Oxygen XML Editor plugin includes support for the DITA Open Toolkit. This section includes information about how to install and create a DITA OT *plugin*, and how to use an external instance of the DITA Open Toolkit.

Related Information:

DITA Open Toolkit Documentation

Installing a DITA-OT Plugin

Oxygen XML Editor plugin comes bundled with various DITA-OT *plugins*, but the architecture of the **DITA Open Toolkit** also allows you to install additional *plugins* that can be found from various sources (for example, *Oxygen's* public GitHub repository includes some DITA-OT plugins).

Installing a DITA-OT Plugin

To install a DITA-OT plugin, following this procedure:

1. Copy the additional *plugin* to the location of the DITA OT version you are using (by default, *`DITA-OT-DIR`*`\plugins` directory).

   Note: If the *plugin* is only supported in DITA-OT 2.5.4 version, make sure that you copy the *plugin* to the *`[OXYGEN_INSTALL_DIR]`*`/frameworks/dita/DITA-OT2.x` directory.
2. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar (you could also use the same action on the main toolbar or open the **Transformation Scenarios** view).
3. Select the **Run DITA-OT Integrator** transformation scenario. If the *integrator* is not visible, select the **Show all scenarios** option that is available in the **Settings** drop-down menu.

   Important: The folder where the **DITA OT** is located needs to have full write access permissions set to it. For example, in **Windows**, if you are integrating *plugins* in the **DITA OT** folder bundled with Oxygen XML Editor plugin and your application is installed in the **Program Files** folder, you can start the Oxygen XML Editor plugin main executable with administrative rights for the integrator process to be able to modify resources in the **DITA OT** folder.
4. Apply the scenario.
5. Check the **Results** panel at the bottom of the application to make sure the build was successful.

Details About the Transformation Type (transtype)

Starting with version 17.0, if the DITA-OT plugin declares a **transtype** (transformation type), Oxygen XML Editor plugin detects that transformation type declaration from the **DITA OT** *plugin* and presents descriptions (contributed in the `transtype` declarations) in the **DITA Transformation Type** dialog box. Oxygen XML Editor plugin also shows the contributed parameters from the **DITA OT** *plugin* in the transformation scenario's **Parameters** tab.

If the *plugin* contributed a new transformation type that is not detected (for instance, if you are using a previous version of Oxygen XML Editor plugin that does not detect the `transtype` declarations), you can set the transformation type by following this procedure:

1. Create a new **DITA OT** transformation scenario with a predefined type that is similar to the new transformation type.
2. Edit the transformation scenario and in the **Parameters** tab, add a `transtype` parameter with the value of the new transformation type. Click **OK** to save your changes.

   Note: A transformation type can also extend another `transtype`. For example, the *pdf-prince* `transtype` extends a `commons` transformation type that contains all the common DITA OT parameters.

   Example:

```
<plugin id="com.oxygenxml.pdf.prince">
  <!-- extensions -->
  <feature extension="dita.conductor.transtype.check" value="pdf-prince"
 type="txt"/>
  <feature extension="dita.conductor.target.relative" value="integrator.xml"
 type="file"/>
  <feature extension="dita.transtype.print" value="pdf-prince"/>
  <transtype name="pdf-prince"extends="commons" desc="PDF (Prince XML)">
    <param name="princeExecPath" type="file" desc="Path to the Prince executable
 file that will produce the PDF"/>
  </ Transtype>
</plugin>
```

Related Information:

Creating a DITA OT Plugin on page 1609

Installing the DITA For Publishers Package

DITA Open Toolkit Documentation

Creating a DITA OT Plugin

Oxygen XML Editor plugin provides the ability to install additional **DITA Open Toolkit** *plugins* that can be found from various sources (for example, *Oxygen's* public GitHub repository includes some DITA-OT plugins). It is also possible to create your own *plugin*.

To create a DITA-OT *plugin*, follow these steps:

1. Create a new folder in the **plugins** folder located in your DITA OT directory (for example, if you are using DITA 2.5.4, the path would look like this: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/DITA-OT2.x/plugins/MyNewPlugin`).
2. Create a **plugin.xml** file in that same folder. This file will contain the extension points for the *plugin*. For example, references to the XSLT stylesheets that will be used to style the output.

   Note: You can easily create this file by using the **DITA OT Plugin** new document template that is included in Oxygen XML Editor plugin (from the **New from templates** wizard you can find this template in **Framework templates** > **DITA** > **plugin**.

   Example: A *plugin.xml* file for a syntax highlighting plugin.

```
<plugin id="com.oxygenxml.highlight">
  <feature extension="package.support.name" value="Oxygen XML Editor Support"/>
  <feature extension="package.support.email" value="support@oxygenxml.com"/>
  <feature extension="package.version" value="20.0"/>
  <feature extension="dita.xsl.xhtml" value="xhtmlHighlight.xsl" type="file"/>
  <feature extension="dita.xsl.xslfo" value="pdfHighlight.xsl" type="file"/>
  <feature extension="dita.conductor.lib.import" file="lib/xslthl-2.1.1.jar"/>
</plugin>
```

   Tip: For more information about extension points that are available to use in the *plugin.xml* file, see: http://dita-ot.sourceforge.net/1.5.3/dev_ref/extension-points.html.
3. Install the newly created DITA-OT *plugin* by running the predefined transformation scenario called **Run DITA-OT Integrator** from the **Apply Transformation Scenario(s)** or **Configure Transformation Scenario(s)** dialog box.

   Note: If the *integrator* is not visible, select the **Show all scenarios** option in the **Settings** drop-down menu.

You can share your new plugin with other users who have the same DITA-OT distribution by sending them your newly created folder along with the installation instructions.

Related Information:
DITA Open Toolkit Documentation

Example: Creating a Custom Syntax Highlighting DITA OT Plugin

To offer a detailed example of the steps required to create a new **DITA Open Toolkit** *plugin*, this topic uses an example of creating an **XSLT** customization *plugin* that provides syntax highlighting when publishing DITA `codeblock` elements to **HTML** and **PDF** output formats. This *plugin* (**com.oxygenxml.highlight**) is actually available in the **DITA Open Toolkit** distribution that comes bundled with the latest version of Oxygen XML Editor plugin, but these instructions show you how you could create it if it were not included.

The steps to help you to create the *plugin* are as follows:

1. Create a folder for your *plugin* in the DITA OT **plugins** folder (*DITA-OT-DIR*`/plugins/`).

   For example, if you are using DITA 1.8.5, the path would look like this:

   [OXYGEN_INSTALL_DIR]`/frameworks/dita/DITA-OT/plugins/com.oxygenxml.highlight`
2. Create a **plugin.xml** file (in the same *plugin* folder) that contains the extension points of the *plugin*.

   Note: You can easily create this file by using the **DITA OT Plugin** template that is included in Oxygen XML Editor plugin (from the **New from templates** wizard you can find this template in **Framework templates** > **DITA** > **plugin**).

   For example, our syntax highlighting plugin example contains the following:

   ```
   <plugin id="com.oxygenxml.highlight">
     <feature extension="package.support.name" value="Oxygen XML Editor Support"/>
     <feature extension="package.support.email" value="support@oxygenxml.com"/>
     <feature extension="package.version" value="1.0.0"/>
     <feature extension="dita.xsl.xhtml" value="xhtmlHighlight.xsl" type="file"/>
     <feature extension="dita.xsl.xslfo" value="pdfHighlight.xsl" type="file"/>
   </plugin>
   ```

   The most important extensions in it are the references to the XSLT stylesheets that will be used to style the HTML and PDF outputs.

   You can find other **DITA OT** *plugin* extension points here: http://dita-ot.sourceforge.net/1.5.3/dev_ref/extension-points.html
3. Create an XSLT stylesheet to customize the output types. In our example, to customize the HTML output we need to create an XSLT stylesheet called **xhtmlHighlight.xsl** (in the same *plugin* folder).

   Tip: You can find an XSLT stylesheet with content that is similar to the desired output and use it as a template to overwrite parts of your stylesheet. In our example we want to overwrite the creation of the HTML content from a DITA **codeblock** element. Since a DITA `codeblock` element has the `class` attribute value `+ topic/pre pr-d/codeblock` we can take part of the class attribute value (**topic/pre**) and search the **DITA OT** resources for a similar stylesheet.

   Our search found the XSLT stylesheet *DITA-OT-DIR*`/org.dita.xhtml/xsl/xslhtml/dita2htmlImpl.xsl` that contains:

   ```
   <xsl:template match="*[contains(@class,' topic/pre ')]" name="topic.pre">
     <xsl:apply-templates select="."  mode="pre-fmt" />
   </xsl:template>
   ```

   We use it to overwrite our **xhtmlHighlight.xsl** stylesheet, which results in the following:

   ```
   <xsl:template match="*[contains(@class,' topic/pre ')]" name="topic.pre">
       <!-- This template is deprecated in DITA-OT 1.7.
            Processing will moved into the main element rule. -->
       <xsl:if test="contains(@frame,'top')"><hr /></xsl:if>
       <xsl:apply-templates select="*[contains(@class,' ditaot-d/ditaval-startprop ')]"
             mode="out-of-line"/>
       <xsl:call-template name="spec-title-nospace"/>
       <pre>
         <xsl:attribute name="class"><xsl:value-of select="name()"/></xsl:attribute>
         <xsl:call-template name="commonattributes"/>
         <xsl:call-template name="setscale"/>
         <xsl:call-template name="setidaname"/>
        <!--Here I'm calling the styler of the content inside the codeblock.-->
   ```

```
      <xsl:call-template name="outputStyling"/>
    </pre>
    <xsl:apply-templates select="*[contains(@class,' ditaot-d/ditaval-endprop ')]"
          mode="out-of-line"/>
    <xsl:if test="contains(@frame,'bot')"><hr /></xsl:if><xsl:value-of select="$newline"/>
  </xsl:template>
```

You could also use another XSLT template that applies the XSLTHL library as a Java extension to style the content.

4. Create additional XSLT stylesheets to customize all other desired output types. In our example, to customize the PDF output we need to create an XSLT stylesheet called **pdfHighlight.xsl** (in the same *plugin* folder).

   In this case we found an appropriate XSLT stylesheet *DITA-OT-DIR*`/plugins/legacypdf/xslfo/dita2fo-elems.xsl` to use as a template that we use to overwrite our **pdfHighlight.xsl** stylesheet, which results in the following:

```
<xsl:template match="*[contains(@class,' topic/pre ')]">
  <xsl:call-template name="gen-att-label"/>
  <fo:block xsl:use-attribute-sets="pre">
    <!-- setclass -->
    <!-- set id -->
    <xsl:call-template name="setscale"/>
    <xsl:call-template name="setframe"/>
    <xsl:apply-templates/>
  </fo:block>
</xsl:template>
```

   Note: You can edit the newly created stylesheets to customize multiple outputs in a variety of ways. For example, in our case you could edit the **xhtmlHighlight.xsl** or **pdfHighlight.xsl** stylesheets that we created to customize various colors for syntax highlighting.

5. To install the created *plugin* in the **DITA OT**, run the predefined transformation scenario called **Run DITA-OT Integrator** by executing it from the **Apply Transformation Scenario(s)** dialog box. If the integrator is not visible, select the **Show all scenarios** option that is available in the **Settings** drop-down menu. For more information, see Installing a DITA-OT Plugin on page 1608.

   Results of running the integrator using our example:

   XSLT content is applied with priority when publishing to both HTML and PDF outputs.

   a. For the HTML output, in the XSLT stylesheet *DITA-OT-DIR*`/xsl/dita2html-base.xsl` a new import automatically appeared:

```
<xsl:import href="../plugins/com.oxygenxml.highlight/xhtmlHighlight.xsl"/>
```

      This import is placed after all base imports and thus has a higher priority. For more information about imported template precedence, see: http://www.w3.org/TR/xslt#import.

   b. Likewise, for the PDF output, in the top-level stylesheet *DITA-OT-DIR*`/plugins/org.dita.pdf2/xsl/fo/topic2fo_shell_fop.xsl` a new import statement appeared:

```
<xsl:import href="../../../com.oxygenxml.highlight/pdfHighlight.xsl"/>
```

Now, you can distribute your *plugin* folder to anyone that has a DITA OT installation along with some simple installation notes. Your customization will work provided that the templates you are overwriting have not changed from one DITA OT distribution to the other.

Related Information:

DITA Open Toolkit Documentation

Using an External DITA Open Toolkit in Oxygen XML Editor plugin

Oxygen XML Editor plugin comes bundled with a DITA Open Toolkit, located in the *DITA-OT-DIR* directory. Starting with Oxygen XML Editor plugin version 17, if you want to use an external DITA OT for all transformations and validations, you can open the **Preferences** dialog box and go to the **DITA** page, where you can specify the DITA OT to be used. Otherwise, to use an external DITA Open Toolkit, follow these steps:

1. Edit your transformation scenarios and in the **Parameters** tab change the value for the **dita.dir** parameter to point to the new directory.

2. To make changes in the libraries that come with the DITA Open Toolkit and are used by the Ant process, go to the **Advanced** tab, click the **Libraries** button and deselect **Allow Oxygen to add high priority libraries to classpath**.
3. If there are also changes in the DTDs and you want to use the new versions for content completion and validation, go to the **Document Type Association** preferences page, edit the **DITA** and **DITA Map** document types and modify the catalog entry in the **Catalogs** tab to point to the custom catalog file `catalog-dita.xml`.

Related Information:

Editing a Transformation Scenario on page 980
Creating New Transformation Scenarios on page 936
DITA Open Toolkit Documentation

Built-in Third-Party DITA Open Toolkit Plugins

The DITA Open Toolkit 1.8.5 and 2.5.4 distributions that are bundled with Oxygen XML Editor plugin include some pre-installed third-party open-source *plugins* that add extra publishing formats and functionality.

The *plugins* that come bundled with Oxygen XML Editor plugin include:

- **DITA For Publishers** (installed only in DITA OT 1.8.5) - These *plugins* allow DITA content to be published to additional formats, such as EPUB 2.0 and Kindle.
- **DITA to Word** (installed only in DITA OT 2.5.4) - This *plugin* allows users to publish DITA content to MS Word.
- **DITA Markdown** (installed only in DITA OT 2.5.4) - This *plugin* allows users to publish DITA content to *Markdown*, or to publish *DITA maps* that reference *Markdown* resources.
- **Lightweight DITA** (installed only in DITA OT 2.5.4) - This *plugin* allows users to create, edit, and validate *Lightweight* DITA topics and *maps*.
- **DITA Community** (installed only in DITA OT 2.5.4) - These *plugins* allow support for DITA 1.3 with embedded or referenced MathML and SVG images.

DITA Specialization Support

DITA is designed to let you design new markup and new document types that allow any general-purpose DITA processor to process documents that use the new markup. This in turn enables blind interchange of DITA documents from any source. In particular, in the context of a map, you can combine topics of any type and get usable results from any general-purpose DITA processor. Specialization is the one truly unique and distinguishing aspect of DITA. Even if you have no use for any aspect of DITA modularity or reuse, you still have a use for specialization simply because it enables reliable interchange in a way that no other XML application does.

For detailed information and step-by-step tutorials about DITA specializations, see DITA 4 Practitioners: DITA Configuration and Specialization Tutorials.

In addition, the topics in this section contain information about using DITA specializations in Oxygen XML Editor plugin.

Integrating a DITA Specialization

A DITA specialization can have its document type defined with any of the following::

- **DTD** - For configuration and specialization tutorials, see http://dita4practitioners.github.io/dita-specialization-tutorials/.
- **XSD** - For configuration and specialization tutorials, see http://dita4practitioners.github.io/dita-specialization-tutorials/.
- **Relax NG** - For more information, see the following presentation: Creating DITA-OT Constraint/Specialization Plugins. For Relax NG coding requirements, see https://www.oxygenxml.com/dita/1.3/specs/archSpec/base/relax-ng-requirements.html.

A DITA specialization may optionally include specialized processing, that is new XSLT template rules that match the extension part of the `class` attribute values of the new elements, and thus extend the default processing available in the DITA Open Toolkit.

To integrate a DITA specialization into Oxygen XML Editor plugin, use one of the following methods:

DITA-OT Plugin Method

If the DITA specialization is available as a DITA Open Toolkit plugin, follow this procedure:

1. Copy the additional *plugin* to the location of the DITA OT version you are using (by default, *`DITA-OT-DIR`*`\plugins` directory).

   Important: The application needs to have full write access permissions to the DITA OT directory.
2. If Oxygen XML Editor plugin was installed in the default location, you may need to restart and run it as an administrator.
3. Select the **Configure Transformation Scenario(s)** action from the **DITA Maps Manager** toolbar (you could also use the same action on the main toolbar or open the **Transformation Scenarios** view).
4. Select the **Run DITA-OT Integrator** transformation scenario.

   Tip: If you don't see that scenario in the **Configure Transformation Scenario(s)** dialog box or **Transformation Scenarios** view, click the **Settings** button and select the **Show all scenarios** option, but don't forget to change it back to **Show only the scenarios available for the editor** after you are finished with this procedure.
5. Apply the scenario.
6. Check the **Results** panel at the bottom of the application to make sure the build was successful.
7. Restart Oxygen XML Editor plugin with your normal permissions.

Tip: Oxygen XML Editor plugin detects new document templates contributed by the DITA OT plugin as long as you do the following:

1. Create a new folder called **template_folders** inside the *`DITA-OT-DIR`*`\plugins` directory.
2. Create one or more subfolders inside the **template_folders** directory that contain the new document templates. The new document templates found in those subfolders will be available in the **New** document wizard.

Alternative Methods

If the DITA specialization is not available as a DITA OT plugin, you have the following options:

- If the DTDs that define the extension elements are located in a folder outside the DITA Open Toolkit folder, add new rules to the DITA OT catalog file. These rules are meant for resolving the DTD references from the DITA files that use the specialized elements to that folder. This allows for correct resolution of DTD references to your local DTD files and is needed for both validation and transformation of the *DITA maps* or topics. The DITA OT catalog file is called `catalog-dita.xml` and is located in the root folder of the DITA Open Toolkit.
- If there is specialized processing provided by XSLT stylesheets that override the default stylesheets from DITA OT, these new stylesheets must be called from the DITA OT Ant build scripts.

  Important: If you are using DITA specialization elements in your DITA files, it is recommended that you activate the **Enable DTD/XML Schema processing in document type detection** option in the **Document Type Association** preferences page.
- You could create your own document templates, store them in a custom direction, then add that directory to the list of template directories that Oxygen XML Editor plugin uses by adding the directory to the list in the Document Templates Preferences on page 97.

Related Information:

DITA Configuration and Specialization Tutorials

Editing DITA Map Specializations

In addition to recognizing the default *DITA map* formats (`map` and `bookmap`), the **DITA Maps Manager** view can also be used to open and edit specializations of *DITA maps*.

All advanced edit actions available for the map (such as insertion of topic refs, heads, properties editing) allow you to specify the element in an editable combo box. Moreover the elements that appear initially in the combo are all the elements that are allowed to appear at the insert position for the given specialization.

The topic titles rendered in the **DITA Maps Manager** view are collected from the target files by matching the `class` attribute and not a specific element name.

When editing DITA specializations of maps in the main editor the insertions of topic reference, topic heading, topic group and conref actions should work without modification. For the table actions, you have to modify each action manually to insert the correct element name at cursor position. You can go to the **DITA Map** document type from the **Document Type Association** preferences page and edit the table actions to insert the element names as specified in your specialization. See Adding/Editing a Framework (Document Type) on page 1237 for more details.

Related Information:

DITA Configuration and Specialization Tutorials

Integrating a DITA Specialization on page 1612

Editing DITA Topic Specializations

In addition to recognizing the default DITA topic formats, topic specializations can also be edited in the **Author** mode.

The content completion should work without additional modifications and you can choose the tags that are allowed at the cursor position.

The CSS styles in which the elements are rendered should also work on the specialized topics without additional modifications.

The toolbar/menu actions should be customized to insert the correct element names. You can go to the `DITA` document type from the **Document Type Association** preferences page and edit the actions to insert the element names, as specified in your specialization. See Adding/Editing a Framework (Document Type) on page 1237 for more details.

Related Information:

DITA Configuration and Specialization Tutorials

Integrating a DITA Specialization on page 1612

Master Files Support in DITA

Oxygen XML Editor plugin includes a feature that allows you to define *Master Files* at project level. This feature is typically used in Oxygen XML Editor plugin for XML documents to determine the context for operations such as validation, content completion, refactoring, searches, or displaying components collected from various modules. For DITA projects, this feature has a more limited purpose in Oxygen XML Editor plugin since it is mainly used to provide the means for updating references to moved or renamed resources.

Since you can move or rename DITA resources (such as topics and maps) in the **DITA Maps Manager**, the *root map* is used as the scope to update all the references to the moved or renamed resources. However, you do not have this option for non-DITA resources (such as folders, images, html files, audio, video, text files, Markdown documents) since they do not appear in the **DITA Maps Manager**. Also, when moving DITA resources in the **DITA Maps Manager**, you have to do it one at a time.

You can use the *Master Files* support in DITA to update all the references to moved or renamed resources in the scope of the *Master Files*, and since the *root map* will be set as the *Master File*, you achieve the same result as if you were moving or renaming them in the **DITA Maps Manager**. It also allows you to move multiple DITA resources (or entire folders) at once in the **Navigator** view, instead of the **DITA Maps Manager**, while still giving you the option of updating all the references.

How to Enable Master Files Support in DITA

To use the *Master Files* support in DITA, follow these steps:

1. Go to the **Navigator** view and select **Enable Master Files Support** from the contextual menu of the project root folder.
2. Add the main DITA map (*root map*) to the Master Files folder by doing one of the following:
   - Right-click the project root folder or the *Master Files* folder and select **Detect Master Files from Project**.
   - Manually add the *root map* to the *Master Files* folder by right-clicking a file from your project and selecting **Add to Master Files** from the contextual menu (or simply drag and drop it into the *Master Files* folder).

   Tip: You can set multiple maps in the *Master Files* folder and all of them will automatically be added to the list of root maps you can select from the drop-down menu in the **DITA Maps Manager** toolbar.

Moving or Renaming Non-DITA Resources and Updating the References to Them

With the *Master Files* support enabled, you can move or rename non-DITA resources (such as folders, images, html files, audio, video, text files, Markdown documents) or move multiple normal DITA resources (or entire folders) in the **Navigator** view and Oxygen XML Editor plugin will offer the option of updating all the references to the moved or renamed resources in the scope of the *Master Files* (in this case, the *main DITA map (root map)*).

To move or rename non-DITA resources (or move multiple DITA resources) and update the references to them, follow these steps:

1. Enable *Master Files* support and add your *root DITA map* to the *Master Files* folder as described in the How to Enable Master Files Support in DITA on page 1614 section above.
2. Go to the **Navigator** view, and use one of the following methods to move or rename the resources:

   Moving Resources

   To move resources in the **Navigator** view, do one of the following:

   - Simply drag and drop the resource to the new location in the tree structure.
   - Use the **Move** action (or **Copy** and **Paste** actions) from the contextual menu.
   - Right-click the resource and select **Refactoring** > **Move resource** action from the contextual menu. Note that this method also allows you to specify a new name and destination path in the **Move resource** dialog box.

   Result: In all cases, a **Move resource** dialog box will be presented.

   Renaming Resources

   To rename resources in the **Navigator** view, do one of the following:

   - Select the resource and press **F2**, or simply left-click again, until the in-place editor allows you to change the title.
   - Right-click the resource and select **Rename** or **Refactoring** > **Rename resource** .

   Result: In all cases, a **Rename resource** dialog box will be presented.
3. Make sure the **Update references of the moved resource(s)** option is selected in the resulting **Move** or **Rename** dialog box and keep the scope as **master files** to make sure all the references to the moved or renamed resource are updated.

Metadata

Metadata is a broad concept that describes data that explains or identifies other data. Metadata can be used for many purposes, from driving automation of document builds to enabling authors and readers to find content more easily. DITA provides numerous types of metadata, each of which is used and created differently. Some of the most important forms of metadata in DITA are topic and taxonomy.

Topic Metadata

Topic metadata describes the topic and what it is about. Topic metadata can be inserted in the `prolog` element of a topic or inside the `topicref` element that points to a topic from a map. In other words, metadata about the topic can be asserted by the topic itself, or can be assigned to it by the map that includes it in the build. This

allows multiple maps to assign different metadata to the same topic. This may be appropriate when you want to describe a topic differently in various documents.

Taxonomy and Subject Scheme

A taxonomy is a controlled vocabulary. It can be used to standardize how many things in your content and metadata are named. This consistency in naming can help ensure that automated processes work correctly, and that consistent terminology is used in content, and in metadata. In DITA, taxonomies are created using *subject scheme maps*. When you are authoring, many of the values you choose from have been defined in *subject scheme maps*.

Migrating MS Office Documents to DITA

Oxygen XML Editor plugin integrates the entire DITA for Publishers plugins suite and includes some helpful tools that allows you to migrate content from Microsoft Office® Word (and other similar types of documents) to DITA. Migration from proprietary formats to XML is rarely perfect and manual changes may need to be made to the converted content, but the methods described below should help you find the best approach for your particular case:

Method 1

1. Open the document in MS Office (or other similar application), select all the content, and copy it.
2. Open Oxygen XML Editor plugin and create a new DITA topic.
3. Paste the selected content in **Author** mode. The *Smart Paste* functionality will attempt to convert the content to DITA.

Method 2

1. Save your document as HTML.
2. Once you have converted it to HTML, you have two possibilities:
   - In Oxygen XML Editor plugin, select **File** > **Import** > **HTML File** to import it as XHTML. Then, open the XHTML in Oxygen XML Editor plugin and use one of the **XHTML to DITA** Transformation Scenarios to convert the content to DITA.
   - Open the HTML file in any Web browser, select all of its content, and copy it. Then, open Oxygen XML Editor plugin, create a new **DITA** topic and paste the selected content in **Author** mode. The *Smart Paste* functionality will attempt to convert the HTML content to DITA.

Method 3

1. Open the document in the free *Libre Office* application and save it as **DocBook**.
2. Open the **DocBook** document in Oxygen XML Editor plugin.
3. Run the predefined transformation scenario called **DocBook to DITA**.
4. You may need to make some manual adjustments for elements that couldn't be mapped.

Method 4

1. If the document is in the MS Word DOCX format, you can open it in the **Archive Browser** view in Oxygen XML Editor plugin and then open the **document.xml** file contained in the archive.
2. Run the predefined transformation scenario called **DOCX DITA**. This scenario runs a build file over the DOCX archive and should produce a DITA project that contains a *DITA map* and multiple topics.
3. You may need to do some manual reconfiguration to map DOCX styles to DITA content.

Related Information:

Smart Paste Mechanism on page 457
Importing Data on page 1195
Working with Archives on page 1134

DITA 1.3 Support

Starting with version 17.1, Oxygen XML Editor plugin includes support for some DITA 1.3 features.

To enable DITA 1.3 support in Oxygen XML Editor plugin and use the DITA Open Toolkit 2.5.4 for publishing, open the **Preferences** dialog box , go to **DITA**, and select the **Built-in DITA OT 2.x** radio button.

The Oxygen XML Editor plugin publication of the full DITA 1.3 specifications can be found at https://www.oxygenxml.com/dita/1.3/specs/index.html#introduction/dita-release-overview.html.

The following table is a list of DITA 1.3 features and their implementation status in Oxygen XML Editor plugin:

Table 74: DITA 1.3 Features Implementation Status

Feature	Editing	Publishing [DITA Open Toolkit 2.5.4 is used]
DITA 1.3 DTD, XML Schema, and Relax NG-based maps/topics/tasks/ references, etc.	New DITA 1.3 document templates. By default, DITA topics and maps that do not specify version in the DOCTYPE declaration are also considered to be DITA 1.3 Specific annotations presented in the content completion assistance window and documentation tooltips for all new DITA 1.3 elements	N/A
Learning Object and Group maps	New document templates	No specific support implemented
Troubleshooting specialization	Create and edit new troubleshooting topics	No specific support implemented
XML markup domain	Validation and Content Completion	Special rendering in PDF and XHTML-based outputs
Equation and MathML domain	Validation and content completion Display and Insert equations	Special rendering in PDF and XHTML-based outputs
SVG domain	Validation and content completion Display referenced SVG content	Special rendering in PDF and XHTML-based outputs
Other new DITA 1.3 elements (**div**, **strike-through**, **overline**, etc)	Validation and Content Completion	Special rendering in PDF and XHTML-based outputs
Release management domain	Validation and Content Completion	No specific support implemented
Scoped keys	Define key scopes Validate and check for completeness Resolve **keyrefs** and **conkeyrefs** taking key scopes into account Key scope information is displayed in a tooltip when hovering over an item in the **DITA Maps Manager**	Partially implemented (Various issues may still be encountered)

Feature	Editing	Publishing [DITA Open Toolkit 2.5.4 is used]
Branch filtering	Display, create, and edit **ditavalref** elements	Partially implemented (Various issues may still be encountered)
Key-based cross deliverable addressing	Special display for references to *DITA maps* with **scope="peer"** and a defined **keyscope** Gather and present keys from peer maps	Not implemented.
Shorthand to address syntax that identifies elements in the same topic	Properly resolved for validation, links, and conrefs	Implemented
Various table attributes (**orientation**, **rotation**, **scope**, and **headers** on cells)	Not implemented in the Table Properties action support. However, attributes can be changed from the Attributes view	Not implemented
New Map **topicref** attributes (**cascade**, **deliveryTarget**)	Allow setting new attributes, propose proper values for them	Implemented

Related Information:

Watch our DITA 1.3 video tutorial for more information about key scopes and branch filtering.

Glossary

21

Topics:

- Active Cell
- Alternate CSS Style
- Anchor
- Apache Ant
- Block Element
- Bookmap
- Callout
- Canonicalize
- Content Completion Assistant
- Dockable
- Document Fragment
- Document Type Association
- DITA Map
- DITA Open Toolkit
- DITA-OT-DIR
- Foldable Element
- Framework
- IDML
- Inline Element
- Java Archive
- Key Space
- Keystore
- Main CSS Style
- Master File
- Named User
- Perspective
- Plugin
- Pretty-Print
- QName
- Quick Assist
- Quick Fix
- Root Map
- Space-Preserved Element
- Subject Scheme Map
- Track Changes
- WebHelp Output Directory
- Working Set
- XML Catalog

Active Cell

Active cell refers to the selected cell where data is entered when you begin typing. Only one cell is active at a time. The *active cell* is bounded by a heavy border.

Alternate CSS Style

The ***Alternate CSS Style*** refers to the choices in the bottom half of **Styles** drop-down menu (on the toolbar) that makes it easy to apply style changes to your documents as they appear in **Author** mode and the output without having to edit the CSS stylesheets. By default, the *alternate styles* are applied like layers, they are merged sequentially with the *main CSS style*, and you can activate any number of them. However, if you deselect the **Enable multiple selection of alternate CSSs** option in the **CSS** subtab of the **Document Type** configuration dialog box, the *alternate styles* are treated like *main CSS styles* and you can only select one at a time.

For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Anchor

An ***Anchor*** is used in various types of links to take the user to a specific location within the target document. It is designated in a URL or in the value of the `href` attribute with a *#* symbol followed by the anchor that is defined in a target ID (for example `href="MyTopic.dita#anchor`).

Apache Ant

Apache Ant (Another Neat Tool) is a software tool for automating software build processes.

Block Element

A ***block element*** is intended to be visually separated from its siblings, usually vertically. For instance, paragraphs and list items are *block elements*. It is distinct from a *inline element*, which has no such separation.

Bookmap

A ***bookmap*** is a specialized *DITA map* used for creating books. A *bookmap* supports book divisions such as chapters and book lists such as indexes.

Callout

A ***callout*** is a string of text inside a graphic and is connected to a specific location in a document by a line. Oxygen XML Editor plugin uses callouts to present comments and other types of review modifications.

Canonicalize

To ***canonicalize*** something means to convert it to a standard format that everyone generally uses. When using the term with regards to XML, it refers to the process of converting data that has more than one possible representations into a standardization that conforms to the specification of an XML document or document subset. It is helpful for applications that require the ability to test whether or not the content of an XML document or subset has been changed.

Content Completion Assistant

The ***Content Completion Assistant*** refers to a very helpful mechanism in Oxygen XML Editor plugin that offers a list of proposed items that could be inserted at the current location, depending on the current context, editing mode, and type of document. It also tries to determine the most logical choice in the current editing context and displays that proposal at the beginning of the list.

For more information about this feature and how to invoke it, depending on your editing context, see the following:

- Content Completion Assistant in Author Mode on page 459
- Content Completion Assistant in Text Mode on page 412
- Content Completion Assistant in Grid Mode on page 441
- Content Completion in XSLT Stylesheets on page 625
- Content Completion in XML Schema on page 689
- Content Completion in XQuery on page 722
- Content Completion Assistance in WSDL Documents on page 736
- Content Completion in CSS Stylesheets on page 754
- Content Completion in Relax NG Schemas on page 761
- Content Completion in NVDL Schemas on page 774
- Content Completion in JavaScript Documents on page 785
- Content Completion in Schematron Documents on page 791
- Content Completion in SQF on page 807

Dockable

A ***Dockable*** window is one that can be moved and resized, and either floated or pinned to a location, allowing you to configure the workspace according to your preferences.

Document Fragment

A ***document fragment*** represents a portion of an XML document's tree of nodes or content.

Document Type Association

In general terms, a ***Document Type Association*** is a set of rules that associate a document type with a *framework*. In Oxygen XML Editor plugin, ***Document Type Association*** also specifically refers to a preferences page where you can create new custom *frameworks* or edit existing ones. Note that predefined *frameworks* (document types) are read-only, but you can **Extend** or **Duplicate** them to configure them as custom *frameworks*.

DITA Map

A ***DITA map*** is a component of the DITA *framework* that provides the means for a hierarchical collection of DITA topics that can be processed to form an output. Maps do not contain the content of topics, but only references to them. These are known as topic references. Usually the maps are saved on disk or in a CMS with the extension `.ditamap`.

Maps can also contain relationship tables that establish relationships between the topics contained within the map. Relationship tables are also used to generate links in your published document.

You can use your map or *bookmap* to generate a deliverable using an output type such as XHTML, PDF, HTML Help, or Eclipse Help.

DITA Open Toolkit

DITA Open Toolkit is an open-source publishing engine for content authored in the Darwin Information Typing Architecture. It is a vendor-independent, open-source implementation of the DITA standard, released under the Apache License, Version 2.0.

The toolkit supports all versions of the OASIS DITA specification, including 1.0, 1.1, 1.2, and 1.3.

DITA-OT
Related Information:

DITA-OT-DIR

DITA_OT_DIR refers to the default directory that is specified for your DITA Open Toolkit distribution in the **Window** > **Preferences** > **Oxygen XML Editor plugin** > **DITA** preferences page.

For example, if you are using DITA OT 2.5.4 with Oxygen XML Editor plugin, the default directory is: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/DITA-OT2.x` (or if you are using DITA OT 1.8.5, the default directory is: *[OXYGEN_INSTALL_DIR]*`/frameworks/dita/DITA-OT`). You can also specify a custom directory.

Foldable Element

A ***foldable element*** refers to elements that can be collapsed and expanded in Oxygen XML Editor plugin. *Foldable elements* are marked with a small triangle (/) on the left side of the editor panel and you can use that triangle to quickly collapse or expand them. This feature is helpful when you are working with large documents and you want to temporarily hide blocks of content. You can right-click the triangle to access additional collapse and expand actions (**Collapse Other Folds**, **Collapse Child Folds**, **Expand Child Folds**, **Expand All**).

Framework

A ***framework*** refers to a package that contains resources and configuration information to provide ready-to-use support for an XML vocabulary or document type. Oxygen XML Editor plugin includes a **Document Type Configuration Dialog Box** that allows you to define a set of rules and customize various authoring mechanisms for new or existing *frameworks*.

For advanced details about customizing your own *framework*, see the Advanced Framework Customization on page 1230 section.

IDML

IDML is an abbreviation for Adobe InDesign Markup files.

Inline Element

An ***inline element*** is intended to be displayed in the same line of text as its siblings or the surrounding text. For instance, strong and emphasis in HTML are *inline elements*. It is distinct from a *block element*, which is visually separated from its siblings.

Java Archive

Java Archive (JAR) is an archive file format. *JAR* files are built on the ZIP file format and have the `.jar` file extension. Computer users can create or extract *JAR* files using the `jar` command or an archive tool.

Key Space

The concept of a ***Key Space*** in DITA refers to a set of all possible keys that can be used in a *DITA map* structure. A ***Key Space*** is established when a *root map* defines a set of effective key bindings. When Oxygen XML Editor plugin processes key references, it determines the effective binding of a given key to a resource in the context of the specified *root map*.

Keystore

A ***Keystore*** is an encrypted file that contains private keys and certificates. There are two types of *keystores* that are supported in Oxygen XML Editor plugin:

- **Java Key Store (JKS)**
- **Public-Key Cryptography Standards version 12 (PKCS-12)**

Main CSS Style

The ***Main CSS Style*** refers to the selection in the top half of the **Styles** drop-down menu (on the toolbar) that makes it easy to quickly change the look of your documents as they appear in **Author** mode and the output without having to edit the CSS stylesheets. The *main CSS* applies to the whole document and you can also select one or more *alternate styles* (listed in the bottom half of the drop-down menu) that behave like layers and are merged sequentially with the *main CSS style*.

For more information, see Configuring and Managing Multiple CSS Styles on page 1315.

Master File

A ***Master File*** typically refers to the root of an imported or included tree of modules and this support helps you simplify the configuration and development of XML projects. For more information, see the Master Files Support on page 381 section.

Named User

Named User is defined as an individual full or part-time employee who is authorized by *You* (the individual or entity who owns the rights to Oxygen XML Editor plugin) to use the software regardless of whether or not the individual is actively using the software at any given time. To avoid any doubt, *Named User* licenses cannot be shared amongst multiple individuals and separate *Named User* licenses must be purchased for each individual user.

A *Named User* license may not be reassigned to another employee except in the following circumstances:

- (a) Upon termination of the *Named User's* employment with your company.
- (b) Permanent reassignment of a *Named User* to a position that does not involve the use of the Software.

For example, suppose Jane has been assigned an *Oxygen* license and she leaves your company. When she leaves, you can simply reassign her license to John, her replacement. In the event that you do reassign the *Named User* license in accordance with the restrictions above, you do not need to notify Syncro of such a reassignment.

Note: This definition is taken from the Oxygen XML Editor plugin End User License Agreement.

Perspective

In Oxygen XML Editor plugin, a ***perspective*** refers to an interface layout geared towards a specific editing environment. Each *perspective* includes a unique set of interface objects, toolbars, views, and features. You can change the *perspective* by selecting the *perspective* from the **Window** > **Open Perspective** menu.

The *perspectives* that are available in Oxygen XML Editor plugin are:

- **Editor** - The most commonly used *perspective* and it is used to edit XML documents.
- **XSLT Debugger** - Used to detect problems in an XSLT transformation by executing the process step by step in a controlled environment.
- **XQuery Debugger** - Used to detect problems in an XQuery transformation process by executing the process step by step in a controlled environment
- **Database** - Used to browse and manage databases.

Plugin

A ***plugin*** (also referred to as *add-on* or *extension*) is a component that adds specific features to an existing application. Oxygen XML Editor plugin supports *plugins* to enable numerous customizations.

Pretty-Print

Pretty-print refers to formatting and indenting the source code in **Text** mode to make the content easier to view and analyze. The formatting actions that are available in Oxygen XML Editor plugin include:

- **Format and Indent Element** - Available in the **Source** submenu of the contextual menu for the current element.
- **Format and Indent** - Available on the toolbar for the entire currently opened document.
- **Format and Indent** - Available in the contextual menu of the **Text** view and applies to all the content in that view.
- **Format and Indent Files** - Available in the contextual menu of the **Navigator** view for one or more selected files.

QName

QName stands for "qualified name" and defines a valid identifier for elements and attributes. *QNames* are used as URI references to reference particular elements or attributes within XML documents.

Quick Assist

The ***Quick Assist*** feature gives you easy access to some of the most commonly used actions for the specific type of document you are editing. If one or more actions are available in the current context, they are accessible via a yellow bulb help ( ) placed at the current line in the stripe on the left side of the editor in **Text** mode. You can also invoke the quick assist menu by using the **Ctrl + 1** (**Meta 1** on Mac OS X) keyboard shortcuts.

Quick Fix

The ***Quick Fix*** support in Oxygen XML Editor plugin helps you resolve errors that appear in an XML document by offering proposals to fix problems such as missing required attributes or invalid elements. *Quick Fixes* are available in **Text** mode and **Author** mode and they can be presented and activated in several ways.

- When hovering over an area of text where a validation error or warning occurs, the *Quick Fix* proposals can be presented as links in a tooltip pop-up window.
- When hovering over an error or warning in **Author** mode, the *Quick Fix* proposals are presented in a small drop-down menu.

- If you place the cursor in the highlighted area where a validation error or warning occurs, a *Quick Fix* icon ( ) is displayed in the stripe on the left side of the editor. Clicking that icon will allow you select from the available proposals.
- If you place the cursor in the highlighted area where a validation error or warning occurs, you can also access the *Quick Fix* menu by pressing **Ctrl + 1 (Command + 1 on OS X)** on your keyboard.

Oxygen XML Editor plugin also provides support for defining and customizing a library of *Quick Fixes* using the Schematron language.

Root Map

A ***Root Map*** (or master map) specifies a *DITA map* that defines a hierarchical structure of submaps that are contained within the *root map*. Essentially, the *root map* defines a scope and provides the mechanism to allow your defined keys to be propagated throughout the entire map structure (this mechanism is also known as a *key space*).

In Oxygen XML Editor plugin, the **DITA Maps Manager** includes an option on its toolbar where you can easily specify the *root map*, but there are also several other ways to select or change the *root map*.

Space-Preserved Element

A ***spaced-preserved element*** refers to elements that require white spaces and line endings to be preserved (for example, DITA `codeblock` and `pre` elements).

Subject Scheme Map

A ***Subject Scheme Map*** allows you to create custom controlled attribute values and to manage metadata. *Subject scheme maps* use a key definition to define a collection of controlled values rather than a collection of topics. The highest level of map that uses the set of controlled values must reference the *subject scheme map* in which those controlled values are defined.

A controlled value is a keyword that can be used as a value in a metadata attribute. For example, the `@audience` metadata attribute may take a value that identifies the user group associated with a particular content unit (for medical equipment, that might include *therapist*, *oncologist*, *surgeon*, *radiologist*, and so on). In a *subject scheme map*, you can define a list of these audience values and you can then use these values to profile your content. For more information, see Customizing Profiling Values with a Subject Scheme Map on page 1602.

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Track Changes

The *Track Changes* feature allows you to review changes that you or other authors have made and then accept or reject them. You can also manage the visualization mode of the tracked changes, add comments to changes, and mark them as being done. These actions are easily accessible from contextual menus, the toolbar, or the **Review** view.

For more information about this feature, see Managing Tracked Changes on page 473.

WebHelp Output Directory

WebHelp_OUTPUT_DIR refers to the output directory where WebHelp transformation files will be generated.

The output directory can be specified using the **Output Directory** text field in the **Output** tab of the transformation scenario dialog box.

When running the WebHelp transformation from a command line, the output directory can be specified using the `-o` or `--output` option.

Working Set

A ***Working Set*** refers to a set of files that will be used for the scope of search and refactoring operations. Many of the search and refactoring wizards include a step where you can specify the scope for the operation and you can choose one or more *working sets* to restrict the scope to that specified set of files.

XML Catalog

An ***XML Catalog*** maps a system ID or a URI reference for a resource (stored either remotely or locally) to a local copy of the same resource. Whenever XML processing relies on external resources (such as referenced schemas and stylesheets), the use of an *XML Catalog* becomes a necessity when Internet access is not available or the connection is slow.

Oxygen XML Editor plugin includes default global catalogs as well as default catalogs for each of the built-in *frameworks*, and you can also create your own. Oxygen XML Editor plugin uses these *XML Catalogs* to resolve references for document validation and transformations. For more information, see Working with XML Catalogs on page 591.

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