XMLmind XML Editor - DITA Support

Hussein Shafie

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XMLmind Software

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1. About DITA support in XMLmind XML Editor

DITA 1.3 support

Out of the box, XMLmind XML Editor (XXE for short) allows to edit topics, maps and bookmaps conforming to the DITA 1.0, 1.1, 1.2 DTD and W3C XML Schema.

As of version 7.2, XXE allows to create, edit and convert DITA documents conforming to the ***DITA 1.3*** DTD, W3C XML Schema or RELAX NG schema.

In fact, when XXE v7.2+ is used, DITA 1.2 documents are automatically “upgraded” to DITA 1.3. This is caused by the fact that the following `<!DOCTYPE>` means "use latest version of the DITA DTD":

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE topic PUBLIC "-//OASIS//DTD DITA Topic//EN" "topic.dtd">
<topic id="MyTopic">
...
</topic>
```

This should not be a problem as DITA 1.3 is a superset of DITA 1.2. However if for any reason, you prefer to stick to DITA 1.2 elements, please download and install the XXE add-on called "*Keep using DITA 1.2*". This is done using menu item **Options** → **Install Add-ons**.

Technical content only

XMLmind XML Editor only supports "Technical content elements". This includes machinery task and the task requirements domain but excludes classification elements. Other vocabularies such as "Learning and training elements" are not supported.

DITAVAL conditional processing profiles and subject scheme maps are also supported.

Using the DITA W3C XML Schema or RELAX NG schema rather than the DITA DTD

By default, a DITA document created using XMLmind XML Editor (e.g. **File** → **New**) conform to the DITA DTD and not to the W3C XML Schema or to the RELAX NG schema.

This can be easily changed by uncommenting out the alternative documents templates found in *`XXE_install_dir`*`/addon/config/dita/topic.xxe`, `map.xxe`, `bookmap.xxe`, `ditaval.xxe`, `subjectScheme.xxe`.[1]. Excerpts from *`XXE_install_dir`*`/addon/config/dita/topic.xxe`:

```
<!-- Same templates but using a RELAX NG schema rather than a DTD ==========
<template name="Concept" location="template/rng/concept.dita"
          category="DITA" order="510" />
<template name="Task (Strict)" location="template/rng/strictTask.dita"
          category="DITA" order="520" />
...
<template name="Multiple Topics" location="template/rng/dita.dita"
          category="DITA" order="600" />
========================================================================== -->
```

[1] Or better, by customizing the DITA configuration as explained in *XMLmind XML Editor - Configuration and Deployment*.

XMLmind DITA Converter, a serious alternative to the DITA Open Toolkit

Unlike its competitors, XMLmind XML Editor does not leverage the DITA Open Toolkit to convert DITA documents to formats such as XHTML, Web Help, PDF, RTF, etc. Instead XXE embeds, free, open source, *XMLmind DITA Converter*.

XMLmind DITA Converter (ditac for short) has exactly the same level of DITA support as XMLmind XML Editor.

Note that ditac has no problem processing a DITA document pointing to a RELAX NG schema, rather than to a DTD or W3C XML Schema:

```
<?xml version="1.0" encoding="UTF-8"?>
<?xml-model href="urn:oasis:names:tc:dita:rng:topic.rng"?>
<topic id="MyTopic">
...
</topic>
```

The `<?xml-model?>` processing-instruction used in the above example is the standard way to associate a document to a RELAX NG schema. See "*Associating Schemas with XML documents 1.0*".

1.1. Lightweight DITA support

As of version 8.2, thanks to XMLmind DITA Converter, XMLmind XML Editor fully supports Lightweight DITA (AKA LwDITA) support, whether XDITA (very small subset of DITA XML, plus new `<audio>` and `<video>` elements), HDITA (topics and maps written in HTML5) or MDITA Extended Profile (topics and maps written in Markdown). More information in "Lightweight DITA support".

MDITA support

Out of the box, XMLmind XML Editor supports a so-called MDITA Extended Profile. However there are many “flavors” of Markdown, that's why this Extended Profile may be customized.

This is done by defining a system property called "`ditac.load.options`" containing one or more `load.mdita.`*`XXX`* options. These options are all documented in "MDITA support".

The "`ditac.load.options`" system property is best defined in a `customize.xxe` configuration file. Example:

```
<property name="ditac.load.options">
  load.mdita.autolink true
</property>
```

More information about the `<property>` configuration element and the `customize.xxe` configurations files in *XMLmind XML Editor - Configuration and Deployment*.

2. DITA map reference

2.1. DITA map menu

When a DITA map is opened in XMLmind XML Editor, the **XML** menu becomes the **Map** menu and this menu is populated with items which are specific to DITA maps. This reference contains a description of such menu items.

What's described in this section also applies to DITA bookmaps.

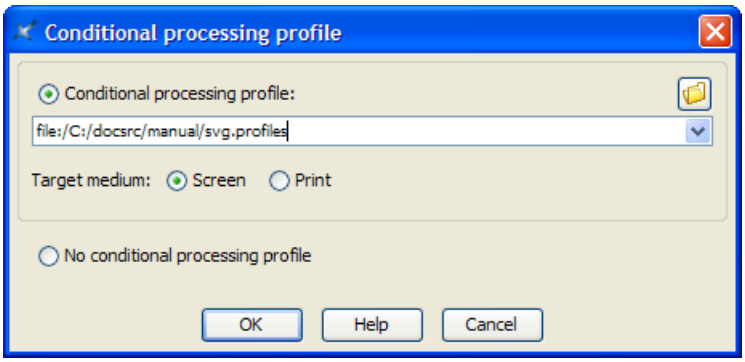
Check map

Conditional Processing Profile

Displays a dialog box allowing to specify a conditional processing profile (a `.ditaval` file) which is to be applied to the map being edited and also the medium targeted by this map. The conditional processing profile is used by the **Check Map** command and also by all the **Convert** commands found in the **Convert Document** menu.

The target medium specified in this dialog box is used only by the **Check Map** command. If you specifically target a print form (PDF, PostScript, RTF, etc) for your deliverable, check **Print**. In any other case, check **Screen**.

*Figure 1. The dialog box displayed by menu item "**Conditional Processing Profile**"*



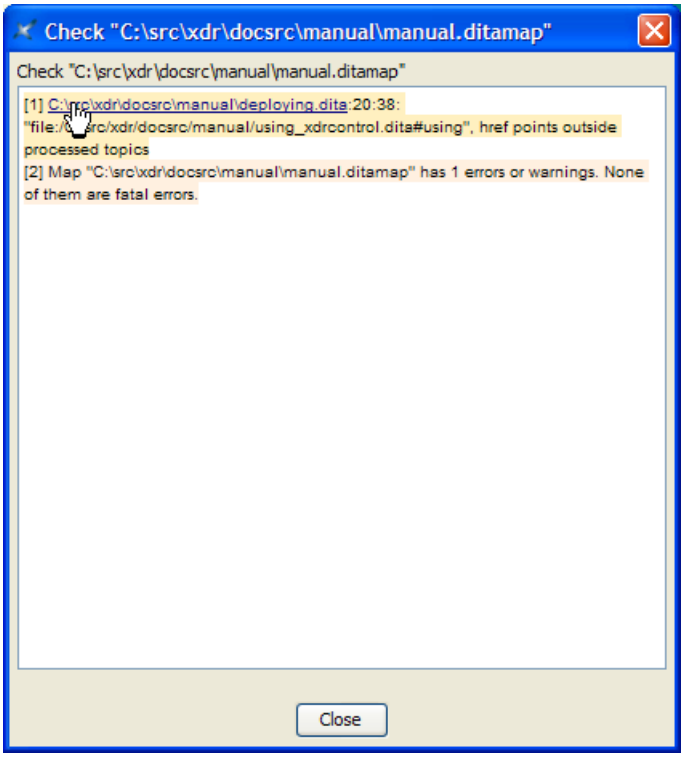
Remember

Note that the values specified in the above dialog box are remembered for use during subsequent editing sessions. For example, in the case of the above screenshot, if you reopen the same map later, this map will still be filtered by `print.ditaval` and its target medium will still be `Print`, and this even if you do not explicitly use menu item **Map** → **Conditional Processing Profile** during the new editing session.

Check Map

Extensively check the map being edited. This task which can be lengthy is run in background. While this task is running, a non-modal dialog box displays all the errors and warnings found in the map being edited, its submaps and all the topics referenced by these maps. If no errors or warnings are found, the dialog box is automatically closed. Otherwise it stays opened allowing you to review each error or warning. After you are done, you'll have to close the dialog box by clicking **Close** if you want to be able to re-run **Check Map**.

*Figure 2. The dialog box displayed by menu item "**Check Map**"*



As you can see it in the above screenshot, clicking on an underlined filename or URL opens the corresponding topic or map in XMLmind XML Editor and selects the element having the error or a warning.

Convert Document menu

Note

The "**Convert to RTF**", **WML**, **DOCX**, **ODT**, entries documented below are absent in XMLmind DITA Editor. They are found only in XMLmind XML Editor.

Attention

The items of this menu are all disabled if the document being edited needs to be saved to disk.

Convert to XHTML
Convert to XHTML [one page]
: Converts the document being edited to multi page or single page XHTML 1.0.

Convert to Web Help
: Converts the document being edited to *Web Help* containing XHTML 5 pages.

Convert to HTML Help
: Converts the document being edited to a `.chm` file. This command is disabled on platforms other than Windows.

  Requires:

1. Download and install Microsoft®'s HTML Help Workshop.
2. Declare the HTML Help compiler, `hhc.exe`, as the helper application associated to files having a "`hhp`" extension. This can be specified by using the **Preferences** dialog box, **Helper Applications** section.

Convert to Eclipse Help
: Converts the document being edited to a directory containing various files for use by the Eclipse Help system.

Convert to EPUB
: Converts the document being edited to an `.epub` file.

Convert to RTF (Word 2000+)
: Converts the document being edited to RTF (Rich Text Format) using. The document generated by this command can be edited and printed using Microsoft® Word 2000 and above.

Convert to WordprocessingML (Word 2003+)
: Converts the document being edited to WordprocessingML. The document generated by this command can be edited and printed using Microsoft® Word 2003 and above.

Convert to Office Open XML (Word 2007+)
: Converts the document being edited to Office Open XML (.docx file) . The document generated by this command can be edited and printed using Microsoft® Word 2007 and above.

Convert to OpenDocument (OpenOffice.org 2+)
: Converts the document being edited to OpenDocument (.odt file). The document generated by this command can be edited and printed using OpenOffice.org 2.

Convert to PDF
: Convert the document being edited to PDF.

Changing the look and contents of the files generated by the Convert Document menu

There are three ways to change the look and contents of the files generated by the items of the **Convert Document** menu.

1. Specifying custom XSLT stylesheet parameters. This is done by selecting any of the items of menu "**Convert Document**" and then, when the URL chooser dialog box is displayed, clicking "**Document conversion parameters**" to expand the conversion parameters pane.

   For example, adding parameter `center` with value "`fig table`" allows to center figures and tables in the generated files.

   The reference manual of the parameters of the XSLT stylesheets used to perform the conversion is found in XMLmind DITA Converter Manual - XSLT stylesheets parameters. This reference manual can be directly accessed from the "**Document conversion parameters**" pane.

2. Using menu item **Options** → **Customize Configuration** → **Customize Document Conversion Stylesheets** is also a relatively simple way to influence the layout and style of the deliverable (PDF, RTF, HTML, etc) which results from the document conversion.

   The document being edited is converted to other formats by the means of XSLT stylesheets. This menu item allows to:

   - select an XSLT stylesheet other the default one,
   - create a custom XSLT stylesheet on the fly,
   - invoke a specialized editor —XMLmind XSL Customizer— to modify a user-created XSLT stylesheet.

However, when the document being edited is converted to an HTML-based format (Web Help, EPUB, HTML Help, etc), the HTML pages which are automatically generated by the aforementioned XSLT stylesheets are styled mainly by *CSS stylesheets*. When this is the case, this menu item allows additionally to:

- select a CSS stylesheet other the default one,
- create a custom CSS stylesheet on the fly,
- invoke a helper application (generally, a text editor) to modify a user-created CSS stylesheet.

3. To a lesser extent, changing the options of the XMLmind DITA Convert (ditac) preprocessor. This is done by using **Options** → **Customize Configuration** → **Preprocessing Options**.

   For example, selecting option group "**Convert to PDF, PostScript**" and then selecting "**Generate as backmatter**" in the **Index** combobox allows to add an index at the end of the generated PDF files.

   More information about this facility in Section 6. Preprocessing options.

Note that a technical writer is not expected to know which parameter, option or style is to be specified to get the desired effect. Unless she/he is the local guru, a technical writer is expected to post a support request to the xmleditor-support public, moderated, mailing list in order to learn this. But at least the three above facilities allow her/him to customize her/his deliverables without having to hand edit configuration files.

2.2. DITA map tool bar

When a DITA map is opened in XMLmind XML Editor, buttons which are specific to this kind of document are automatically added to the tool bar. This reference contains a description of such buttons.

What's described in this section also applies to DITA bookmaps.

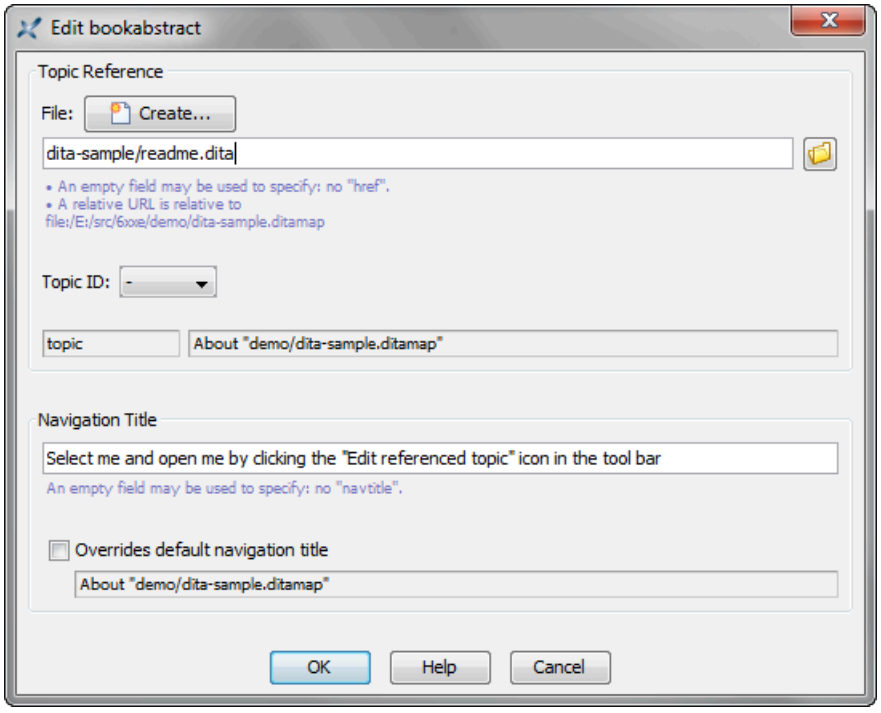
Button	Description
Insert Topicref Before	Insert a topicref before selected topicref. Displays a dialog box allowing to specify the `@href` attribute and/or the `@navtitle` of the topicref to be inserted.
Insert Topicref Into	Insert a topicref as the last child of selected topicref. Displays a dialog box allowing to specify the `@href` attribute and/or the `@navtitle` of the topicref to be inserted.
Insert Topicref After	Insert a topicref after selected topicref. Displays a dialog box allowing to specify the `@href` attribute and/or the `@navtitle` of the topicref to be inserted.
Edit Topicref	Displays a dialog box allowing to change the `@href` attribute and/or the `@navtitle` of selected topicref.
Move Up	Move selected element up, that is, swap it with its preceding sibling node. Requires the element to be explicitly selected.
Move Down	Move selected element down, that is, swap it with its following sibling node. Requires the element to be explicitly selected.
Promote	Decrease the nesting level of selected topicref, possibly changing its type (e.g. a `<topicref>` element becomes a `<chapter>` element).
Demote	Increase the nesting level of selected topicref, possibly changing its type (e.g. a `<chapter>` element becomes a `<topicref>` element).
Add reltable	Displays a menu allowing to add a `<reltable>` without or with a `<relheader>` after selected element.

Button	Description
	Tip The entries of this menu are generally disabled unless you select the last element (or any descendant of last element) of the map.
Reltable column	Displays a menu similar to the "**Table column**" menu found in Table editor.
Reltable row	Displays a menu similar to the "**Table row**" menu found in Table editor.
Show Level	Displays a menu containing "**Show Level 1**", "**Show Level 2**", ..., "**Show Level 9**" items. "Show Level *N*" means: expand all the collapsible elements of the map up to nesting level *N* and recursively collapse all the collapsible elements having a nesting level greater than *N*.
Edit All Topics R/O	Opens in read-only mode all the topics and maps referenced in the selected elements and their descendants.
Edit All Topics or Maps	Opens in normal read-write mode all the topics and maps referenced in the selected elements and their descendants.

The "Edit topicref" dialog box

The following dialog box is displayed when you click the "**Insert topicref Before**", "**Insert topicref Into**", "**Insert topicref After**" or the "**Edit topicref**" toolbar buttons. See above.

*Figure 3. A "**Edit topicref**" dialog box used to edit a `<bookabstract>` (a kind of `<topicref>` found in the `<frontmatter>` of a `<bookmap>`)*



- If you want to set the `@href` attribute of the edited or newly inserted `<topicref>`:

1. Click the **Browse** button and use the file chooser to select a file containing one or more DITA topics.

   After the topic file is selected, the status fields of the dialog box are updated to reflect the type and title of the first topic found in the file. The "**Topic ID**" combobox is updated too and contains the IDs of all the topics found in the selected file.

2. In case the file selected in the previous step contains several topics, optionally select the ID of the target topic. This option adds a fragment `#topic_ID` to the value of the `@href` attribute.

- If you want to set the `@href` attribute of the edited or newly inserted `<topicref>` to a *newly created topic*, click the **Create** button. This displays the same dialog box as menu item **File** → **New**. Make sure to create a DITA topic.
- If you want to set the `@navtitle` attribute of the edited or newly inserted `<topicref>`:

  1. Type the title of the `<topicref>` in the "**Navigation Title**" field.
  2. Optionally click "**Override default navigation title**" if you want this `<topicref>` title to replace the referenced topic title in the deliverable (HTML, PDF, RTF, etc) which is to be generated out of the DITA map. This option adds a `locktitle="yes"` attribute to the edited or newly inserted `<topicref>`.

2.3. Other DITA map bindings

When a DITA map is opened in XMLmind XML Editor, additional keyboard shortcuts which are specific to this kind of document are automatically made available to the user. This reference contains a description of such keyboard shortcuts.

What's described in this section also applies to DITA bookmaps.

Action	Description
`Up`	If a topicref is selected, select preceding topicref; elsewhere, default behavior.
`Down`	If a topicref is selected, select following topicref; elsewhere, default behavior.
`Enter`	Insert Topicref After
`Shift-Enter`	Insert Topicref Before
`Ctrl+Shift-Enter`	Insert Topicref Into
`Esc e`	Edit Topicref
`Alt+Shift-Up`	Move Up
`Alt+Shift-Down`	Move Down
`Alt+Shift-Left`	Promote
`Alt+Shift-Right`	Demote
Double-click	On a topicref, Edit Referenced Topic or Map; elsewhere default behavior.
`Esc o`	Edit Referenced Topic or Map
`Esc O`	Edit Referenced Topic or Map in Read-Only Mode
Drag	Dragging selected topicref drags the value of its `@href` attribute. Elsewhere, default drag behavior.

Action	Description
Drop	Dropping a file or URL onto a topicref displays a popup menu containing Insert Topicref Before, Insert Topicref Into, Insert Topicref After, Edit Topicref and **Cancel**. Elsewhere, default drop behavior.

3. DITA topic reference

3.1. DITA topic menu

When a DITA topic (of any kind) is opened in XMLmind XML Editor, the **XML** menu becomes the **Topic** menu and this menu is populated with items which are specific to DITA topics. This reference contains a description of such menu items.

Paste As

Paste As

Paste from Word, Browser or Markdown

Import the HTML copied to the clipboard by word processors or web browsers and intelligently paste it into the DITA topic being edited.

- Extensive efforts are made to decently support the “non-filtered HTML” copied by MS-Word to the clipboard.
- When an application other than MS-Word is used, the quality of the result you'll get in XXE highly depends on what has been copied to the clipboard. In all cases, XXE tries very hard to import something simple, clean and valid at the expense of the fidelity to the original data.

In addition to HTML, this menu entry can also import Markdown whose text source has been copied to the clipboard by text editor or web browsers. Markdown support is documented in the description pane of the "**Install Add-ons**" dialog box, **Uninstall** tab, when the "**Paste from Word Processor or Browser**" add-on is selected. This documentation is also found in "*Paste from Word Processor or Browser*".

The pasted data replaces the text or node selection if any. When there is no selection, XMLmind XML Editor automatically determines a valid insertion location at or following the caret position.

If XMLmind XML Editor fails to find such valid insertion location, the rich text is converted to valid DITA and then copied to the clipboard, overwriting the original data put there by the third-party application. This allows to use the “normal” **Paste Before**, **Paste** or **Paste After** commands to paste the data elsewhere in the document.

Tip

This menu entry allows not only to paste snippets copied from word processors or web browsers, but also to import entire documents or HTML pages. In order to import the entire document into XXE:

1. Open the document in the third-party application.
2. Press `Ctrl-A` (**Select All**) then press `Ctrl-C` (**Copy**) to copy it to the clipboard.

3. Create a new topic (of any kind) in XMLmind XML Editor by using **File** → **New**.
4. Use **File** → **Save As** to save this new document to disk.
5. Explicitly select the root element of the document, for example by clicking on its name in the node path bar.
6. Select menu item "**Paste from Word Processor or Browser**" to paste the content of the clipboard[(2)].

Tip

If, using MS-Word, you want to copy a piece of text rather than a paragraph, do not include the hidden character found at the very end of a paragraph (the *paragraph mark*) in your selection.

Other menu entries

The entries of this submenu allow to paste the *plain text* copied to the clipboard, typically using a third-party word processor or spreadsheet, as:

- one or more paragraphs,
- OR a `<pre>` element,
- OR one or more list items,
- OR an itemized list,
- OR one or more table rows,
- OR a table.

The last two menu entries assume that each text line specifies a table row and that, within a text line, the contents of the table cells are separated by tab characters.

Tip

If you need to paste the copied text as an ordered list, first paste this text as an itemized list then convert the pasted list to an ordered list using **Edit** → **Convert** (`Ctrl-T`).

The following entries of this submenu allow to paste the *image* copied to the clipboard as:

- `<image>`,
- `<fig>`.

Menu entry "**image**" replaces the text or node selection if any. When there is no selection, this menu entry pastes its element at caret position (just like **Edit** → **Paste**).

All the other menu entries also replace the text or node selection if any. When there is no selection, these menu entries paste their elements at any valid position in the document following the caret position.

[(2)] Note that `Ctrl-V`, that is, the plain **Edit** → **Paste** command, would not work here.

Replace Markdown markup by DITA elements

Parse Markdown as XML

Parse Text as XML

[3]Keyboard shortcut `Ctrl+Shift+Space`. Replace Markdown markup found all the text nodes of explicitly or implicitly selected element by equivalent DITA elements. Supported Markdown markup: italic, bold, bold and italic, code, highlight (replaced by <u>), subscript, superscript, link, image, unordered list item, ordered list item.

Example (notice the space character after "`1.`"; this space character is required after all the different “block prefixes” "#", "##", "`-`", "`*`", "`1.`", etc):

```
<p>1. <term>Dart</term> is a **programming language**.
See [Dart](https://dart.dev/).</p>
```

is replaced by:

```
<ol compact="yes">
  <li><term>Dart</term> is a <b>programming language</b>.
  See <xref href="https://dart.dev/" scope="external">Dart</xref>.</li>
</ol>
```

Indexterm editor

Insert or Edit indexterm

If the caret is anywhere inside an `<indexterm>` element or if a single element or node is explicitly selected anywhere inside an `<indexterm>` element, this menu item displays an `<indexterm>` editor dialog box allowing to modify this `<indexterm>` element.

Otherwise, this menu item displays an `<indexterm>` editor dialog box allowing to create a new `<indexterm>` element and then to insert it at caret position.

Tip

If some text has been selected, field **Term** of the dialog box is automatically initialized with the text selection. Therefore the simplest way to create an `<indexterm>` element is first to select the term in the body of the document, then invoke **Topic** → **Insert or Edit indexterm** and finally click **OK**.

Moving elements

Move Up

Move selected element up, that is, swap it with its preceding sibling node. Requires the element to be explicitly selected.

Move Down

Move selected element down, that is, swap it with its following sibling node. Requires the element to be explicitly selected.

---

[3] "**Parse Markdown as XML**" may be replaced by a variant called "**Parse Text as XML**" when the "MathML support" add-on is installed.

Checking external links

Check External References

Checks all the links to external resources (e.g. `<xref>` elements having attribute `@scope="external"`) found in the document being edited. All kinds of external resources are checked for existence: images, audio, video, PDF documents, HTML pages, etc. When the resource is an HTML page and the link ends with a fragment (e.g. "`#bar`" in "`../doc/foo.html#bar`") then this fragment is also checked for existence.

Convert Document menu

Note

The "**Convert to RTF**", **WML**, **DOCX**, **ODT**, entries documented below are absent in XMLmind DITA Editor. They are found only in XMLmind XML Editor.

Attention

The items of this menu are all disabled if the document being edited needs to be saved to disk.

Convert to XHTML
Convert to XHTML [one page]

Converts the document being edited to multi page or single page XHTML 1.0.

Convert to Web Help

Converts the document being edited to *Web Help* containing XHTML 5 pages.

Convert to HTML Help

Converts the document being edited to a `.chm` file. This command is disabled on platforms other than Windows.

Requires:

1. Download and install Microsoft®'s HTML Help Workshop.
2. Declare the HTML Help compiler, `hhc.exe`, as the helper application associated to files having a "`hhp`" extension. This can be specified by using the **Preferences** dialog box, **Helper Applications** section.

Convert to Eclipse Help

Converts the document being edited to a directory containing various files for use by the Eclipse Help system.

Convert to EPUB

Converts the document being edited to an `.epub` file.

Convert to RTF (Word 2000+)

Converts the document being edited to RTF (Rich Text Format) using. The document generated by this command can be edited and printed using Microsoft® Word 2000 and above.

Convert to WordprocessingML (Word 2003+)

Converts the document being edited to WordprocessingML. The document generated by this command can be edited and printed using Microsoft® Word 2003 and above.

Convert to Office Open XML (Word 2007+)

Converts the document being edited to Office Open XML (.docx file) . The document generated by this command can be edited and printed using Microsoft® Word 2007 and above.

Convert to OpenDocument (OpenOffice.org 2+)

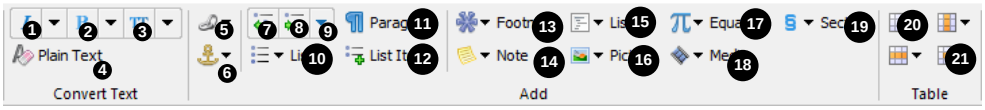
Converts the document being edited to OpenDocument (.odt file). The document generated by this command can be edited and printed using OpenOffice.org 2.

Convert to PDF

Convert the document being edited to PDF.

3.2. DITA topic tool bar

When a DITA topic (of any kind) is opened in XMLmind XML Editor, buttons which are specific to this kind of document are automatically added to the tool bar. This reference contains a description of such buttons.

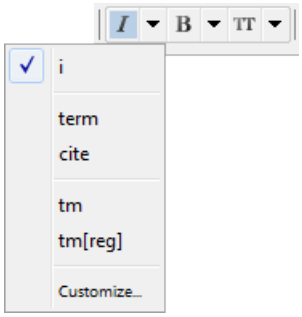


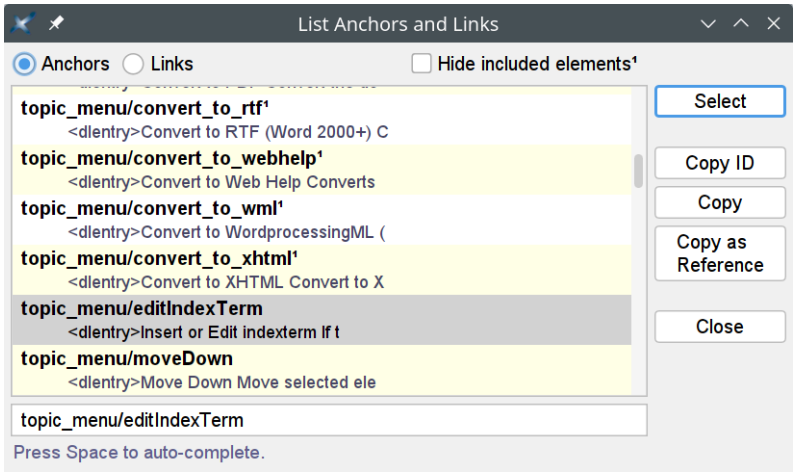
1. Toggle i
2. Toggle b
3. Toggle tt
4. Convert to plain text
5. Add xref
6. Set ID
7. Demote list item
8. Promote list item
9. Change list type
10. Add list
11. Add p
12. Add list item
13. Add footnote
14. Add note
15. Add pre
16. Add image
17. Add MathML equation
18. Insert media objects
19. Add section
20. Add table
21. Table editor

Button	Description
I Toggle i	"Toggle" element `<i>`. Next to this toggle is found an arrow button displaying a menu containing additional checkboxes for the following elements: `<term>`, `<cite>`, `<tm>`, `tm[reg]`.

Note

The DITA tool bar starts with a number of "text style" toggles. These toggles emulate the behavior of the **Bold**, **Italic**, **Underline**, etc, toggles found in the tool bars of almost all

Button	Description
	word-processors. More information about text style toggles in "About text style toggles". *Figure 4. Toggles found at the beginning of the DITA tool bar*  In the above screenshot, the caret is inside an `<i>` element and the user clicked the arrow button next to a “italic text style” toggle.
Toggle b	“Toggle” element `<b>`. Next to this toggle is found an arrow button displaying a menu containing additional checkboxes for the following elements: `<keyword>`, `<uicontrol>`, `<option>`.
Toggle tt	“Toggle” element `<tt>`. Next to this toggle is found an arrow button displaying a menu containing additional checkboxes for the following elements: `<filepath>`, `<varname>`, `<cmdname>`, `<apiname>`, `<codeph>`, `<xmlelement>`, `<xmlatt>`, `<xmlpi>`,
Change case	Displays a menu letting the user change the character case of selected text. If a single node is selected, this converts the character case of all the text contained in this node. If there is no selection of any kind, this converts the character case from caret position to end of word, then it moves the caret to the next word. **lowercase** All characters are converted to lowercase characters. Keyboard shortcut: `Esc l`. **UPPERCASE** All characters are converted to uppercase characters. Keyboard shortcut: `Esc u`. **Capitalize Each Word** First character of a word is converted to an uppercase character. The other characters are converted to lowercase characters. Keyboard shortcut: `Esc c`.
Convert to plain text	Convert implicit or explicit selection to plain text.
Add xref	Displays a menu letting the user add a link —an `<xref>` element— to your DITA topic. **xref** Converts the selection, if any, to an “internal link”; simply inserts an empty “internal link” at caret position otherwise.

Button	Description
	xref[html] Converts the selection, if any, to an “external link”; simply inserts an empty “external link” at caret position otherwise. An external link is an `<xref>` element with attributes `@scope=external` and `@format=html`.
Set ID	This button displays a menu having 2 entries: **Set ID** and **List Anchors and Links**. The **List Anchors and Links** menu entry displays a dialog box letting the user search and select anchors (that is, any element having an ID) and links. *Figure 5. The "**List Anchors and Links**" dialog box*  Button "**Copy ID**" (respectively "**Copy Link**") copies selected ID (respectively selected link target) to the clipboard. Button **Copy** copies selected anchor or link element to the clipboard just like **Edit** → **Copy**. Button "**Copy As Reference**" copies selected *anchor* element as a reference to the clipboard just like **Edit** → **Reference** → **Copy As Reference**.
Decrease nesting level	Convert a paragraph to a list item and a list item to a paragraph, the new element having a lesser nesting level than the original one. This button automatically splits lists when needed to. This is the inverse command of "**Increase nesting level**". More Information below.
Increase nesting level	Convert a paragraph to a list item and a list item to a paragraph, the new element having a greater nesting level than the original one. This button automatically creates lists or merges adjacent lists when needed to. Note that the two above buttons strictly alternate between paragraphs and list items. This means that you'll often have to click a button *twice in a row*. For example, in order to create a nested list, first click anywhere inside a list item and then click "**Increase nesting level**" twice. First click converts the list item to a plain paragraph contained in the preceding list item. Second click converts this paragraph to the first item of a new nested list.

Button	Description
	For the two above buttons to function, any of the following conditions should be met: • A sequence of list items must be explicitly selected. • A list must be explicitly selected. This is equivalent to selecting all its items. • A sequence of blocks *starting with a paragraph* must be explicitly selected. • A paragraph must be implicitly selected. In order to implicitly select a paragraph, suffice to click anywhere inside it. However if this paragraph is the first child of a list item, then it's the list item which is implicitly selected. • A list item must be implicitly selected. In order to implicitly select a list item, suffice to click anywhere inside it. **Tip** When a paragraph is to be converted to a new list using this "**Increase nesting level**" button, there is a quick and simple way to specify the kind of list to be created: • If the paragraph is empty, simply type "`*`", "`-`", "`1.`", "`a.`", "`A.`", "`i.`", "`I.`", optionally followed by space characters, in it. • If the paragraph is not empty, type "`*`", "`-`", "`1.`", "`a.`", "`A.`", "`i.`", "`I.`", followed by at least one space character, at the very beginning of it. These "prefixes" are used to create respectively: **ul**, **ul**, **ol**, **ol[lower-alpha]**, **ol[upper-alpha]**, **ol[lower-roman]**, **ol[upper-roman]**, as if the "**Change list type**" menu below was automatically used.
▾ Change list type	Displays a menu allowing to change the type of the current list. Additional menu entry "**Continue Numbering**", which is rendered as a checkbox, adds/removes "`continue`" to/from the `@outputclass` attribute of an ordered list. Additional menu entry "**Inherit Numbering**", which is rendered as a checkbox, adds/removes "`inheritnum`" to/from the `@outputclass` attribute of an ordered list. More information about these values of the `@outputclass` attribute in Section 4.1. Controlling the numbering of ordered lists. The list must be explicitly or implicitly selected. In order to implicitly select a list, suffice to click anywhere inside it. **Known problems** Except for the simplest cases, "**Continue Numbering**" is *not correctly rendered* in the styled view of the document. For example, "**Continue Numbering**" has no visual effect on `<ol>` elements having an `<ol>` ancestor. The reason of this limitation is that the implementation of "**Continue Numbering**" leverages standard CSS counters. However, when you'll convert your document to other formats such as HTML, PDF, DOCX,

Button	Description
	etc, there are no such limitations and "**Continue Numbering**" should give you the expected results.
Add list	Displays a menu allowing to select a type of list (`<ul>`, `<ol>`, `<dl>`). The chosen list is added after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note). See also Section 4.1. Controlling the numbering of ordered lists.
Add <p>	Add a p after node selection or after caret at a location where it is valid to do so and where it makes sense to do so. **Note** This command and all the following commands will never add an element *inside* a <p>, even it is valid to do so. These commands add elements always *after* a <p>. That is, a <p> element is always considered by these commands as being a plain paragraph and never as being a division.
Add list item	Add a list item of the right type after current list item. For this command to work, suffice to click anywhere inside an `<sl>`, `<ul>`, `<ol>`, `<dl>`, `<choices>`, `<substeps>`, `<steps>`, `<steps-unordered>`.
Add footnote	Displays a menu allowing the user to insert a footnote (`<fn>`) or a reference to a footnote (`<xref type="fn">`) at caret position or after caret at a location where it is valid to do so. If a reference to a footnote is already selected, the "**xref[fn]**" menu entry lets the user choose the ID of the footnote to be referenced.
Add note	Displays a menu allowing the user to add different kinds of admonitions after node selection or after caret at a location where it is valid to do so.

Add pre	Displays a menu allowing the user to add a `<pre>`, `<lines>`, `<screen>`, `<codeblock>` or a `<msgblock>` after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note).
	
	Menu entry "**Normalize Whitespace**" normalizes whitespace in implicitly or explicitly selected program listing. Normalizing whitespace means: expanding tab characters to a number of space characters and removing the space characters which are common to the beginning of all text lines (that is, removing the superfluous “indentation” in the program listing, if any).

Add image	Displays a menu letting the user: • insert an `<image>` or an `<svg-container>` at caret position; • OR add a `<fig>` (containing an `<image>` or containing a `<svg-container>`) after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note);

Button	Description
	• OR add an <imagemap> element after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note). After using this "**imagemap**" menu item, right-click anywhere inside the newly inserted <imagemap> element and select "**Edit Image Map**" from the contextual popup menu to display an *image map editor*. This image map editor allows to add “hot areas” to your image. More information in *The "**Edit Image Map**" dialog box*.
Add MathML equation	Displays a menu letting the user add various kinds of MathML equations after node selection or after caret at a location where it is valid to do so.
Insert media object	Displays a menu allowing to insert a media element at caret position. **object(audio)** An <object> element allowing to add audio to your topic. **object(video)** An <object> element allowing to add video to your topic. **object(youtube)** An <object> element allowing to add a YouTube video to your topic. More information about the above “media objects” in Section 4.4. Rich media content.
Add section	Add a <section> or an <example> after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note).
Add table	Displays a menu allowing the user to add a <simpletable> or a <table> after node selection or after caret at a location where it is valid to do so and where it makes sense to do so (see note).
Table editor	See Table editor below. See also Section 4.2. Giving a background color to table cells.

Table editor

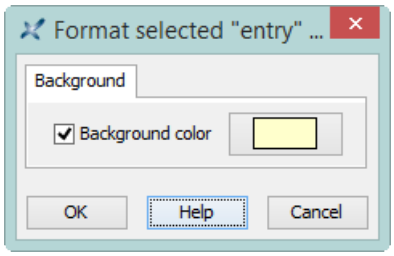
This table editor may be used to edit <simpletable>s as well as CALS <table>s. Most table editing commands can be repeated by using **Edit** → **Repeat** (Ctrl-A).

Note that using this table editor, or simply saving a topic, or checking a topic for validity, guarantees that the @cols attribute of a <tgroup> is up to date. That is, you may forget about the @cols attribute, XMLmind XML Editor will always compute it for you.

Button	Menu item	Description
Table column For a command in this menu to work, click	**Insert Before**	Insert a column before column containing specified cell.
	Insert After	Insert a column after column containing specified cell.
	Cut	Cut to the clipboard the column containing specified cell.

Button	Menu item	Description
anywhere inside a cell[4].	**Copy**	Copy to the clipboard the column containing specified cell.
	Paste Before	Paste copied or cut column before column containing specified cell.
	Paste After	Paste copied or cut column after column containing specified cell.
	Delete	Delete the column containing specified cell.
	Sort Rows	Sort all the rows of the table according to the string values of the cells of the "selected column". (The "selected column" is the column containing specified cell.) A dialog box is displayed allowing to specify the following sort options: **Order** **Dictionary** is the language-specific alphabetical order. Example: (`Charles`, `best`, `Albert`) is sorted as (`Albert`, `best`, `Charles`). **Numeric**. The string value of a cell is expected to start with a number. Example: (`+15.0%`, `1.50%`, `-20%`) is sorted as (`-20%`, `1.50%`, `+15.0%`). **Lexicographic** is the order of Unicode characters. Example: (`Charles`, `best`, `Albert`) is sorted as (`Albert`, `Charles`, `best`). **Dictionary** and **Numeric** orders will cause this menu item to fail, unless the language of the table can be determined (i.e. lookup for the `@xml:lang` attribute). **Direction** **Ascending** means: A to Z, low to high. **Descending** means: Z to A, high to low. Note that: • Header rows (i.e. `<thead>`, `<sthead>`) are never sorted. • The contents of row groups (i.e. `<tbody>`) are sorted separately.
Table row For a command in this menu to work, click anywhere inside a cell[4] or explicitly select a row.	**Insert Before**	Insert a row before row containing specified cell. **Note** Note that row editing commands are enabled, not only by implicitly or explicitly selecting a table cell or any of its descendants, but also by explicitly selecting a table row.
	Insert After	Insert a row before row containing specified cell.

[4] or explicitly select a cell or an element having a cell ancestor

Button	Menu item	Description
	Cut	Cut to the clipboard the row containing specified cell.
	Copy	Copy to the clipboard the row containing specified cell.
	Paste Before	Paste copied or cut row before row containing specified cell.
	Paste After	Paste copied or cut row after row containing specified cell.
	Delete	Delete the row containing specified cell.
Table cell For a command in this menu to work, click anywhere inside a cell[4].	**Increment Column Span**	Increment the number of columns spanned by specified cell. Not relevant for `<simpletable>`s.
	Decrement Column Span	Decrement the number of columns spanned by specified cell. Not relevant for `<simpletable>`s.
	Increment Row Span	Increment the number of rows spanned by specified cell. Not relevant for `<simpletable>`s.
	Decrement Row Span	Decrement the number of rows spanned by specified cell. Not relevant for `<simpletable>`s.
	Set Color	Displays a dialog box allowing to give a background color to specified cell. *Figure 6. The "**Set Color**" dialog box*  Unlike the other entries of this menu, this entry allows to give a background color, not only to specified cell, but also to one or more of any of the following explicitly selected elements: `<simpletable>`, `<sthead>`, `<strow>`, `<stentry>`, `<tgroup>`, `<thead>`, `<tbody>`, `<row>`, `<entry>`.

3.3. Other DITA topic bindings

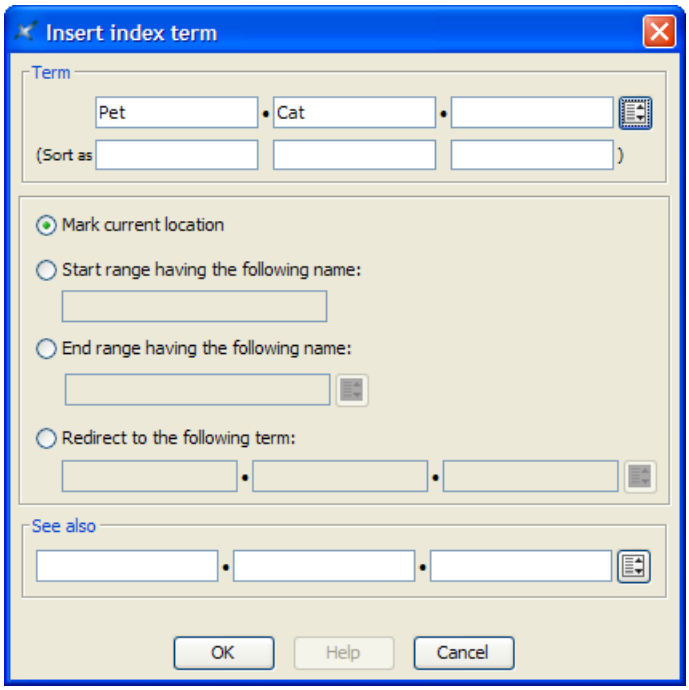
When a DITA topic (of any kind) is opened in XMLmind XML Editor, additional keyboard shortcuts and additional drag and drop facilities which are specific to this kind of document are automatically made available to the user. This reference contains a description of such user input/command bindings.

Action	Description
`Alt+Shift-Up`	Same as menu item Move Up.
`Alt+Shift-Down`	Same as menu item Move Down.

Action	Description
`Alt+Shift-Left`	Same as toolbar button Decrease nesting level.
`Alt+Shift-Right`	Same as toolbar button Increase nesting level.
`Ctrl+Alt-click` (`Cmd+Alt-click` on the Mac)	Follow the link clicked upon.
`Enter`	Insert a newline character if possible. Otherwise, if caret is at the beginning of a paragraph, list item or a few other kinds of block, insert same block before. Otherwise, if caret is at the end of a block, insert same block after. Otherwise, split block.
`Del`	Delete selection if any. Otherwise, if caret is at the end of a paragraph, list item or a few other kinds of block, join with following block. Otherwise, delete character following caret.
`BackSpace`	Delete selection if any. Otherwise, if caret is at the beginning of a paragraph, list item or a few other kinds of block, join with preceding block. Otherwise, delete character preceding caret.
`Ctrl-Enter`	Add same block after the paragraph, list item or a few other kinds of block which is the ancestor of selected node.
Drop an object.	If the drop occurs above an element having an `@href` attribute other than an `<image>` (e.g. an `<xref>`), the dropped string is considered to be an URL and is used to change the value of the `@href` attribute. Note that this kind of drop attempts to *relativize* the dropped URL against the location of the drop site. For example, if you drop "`file://home/john/doc/topic1.dita`" onto an `<xref>` contained in file "`file://home/john/doc/ref/reference2.dita`", its `@href` is set to "`../topic1.dita`". Elsewhere, normal behaviour which is: **Drop onto an `<image>` element** Considers the dropped string to be the URL or the filename of a graphics file. Displays a dialog box allowing to copy or reference this graphics file for use by the `<image>` element. **Drop elsewhere** If the object being dropped is an URL or an absolute filename, open the corresponding document. Otherwise, displays a popup menu allowing to paste the dropped text or XML before, into or after the drop location.
Drag one of the “handles” displayed around an image. (The “handles” are displayed after clicking on the image.)	Resize the image, but always preserve its aspect ratio. Pressing `Ctrl` (`Cmd` on the Mac) while dragging the handle allows to distort the image.
Drag a separator found between two table columns.	Resize the table column. More precisely this gives an appropriate proportional width (e.g. `<colspec colwidth="3*">`) to all table columns.

3.4. Using the <indexterm> editor

This dialog box, displayed by menu item **Topic** → **Insert or Edit indexterm**, allows to insert or edit an <indexterm> element.



We'll explain with examples how to use the <indexterm> editor.

- If you want to get this kind of entry in your back of the book index:

  ```
  P
  Pet 12
  ```

  specify **Term**=Pet.

- Back of the book index:

  ```
  P
  Pet
      Cat 26
  ```

  specify **Term**=Pet, **Term** #2=Cat.

- Back of the book index:

  ```
  P
  "+" 54
  ```

  specify **Term**="+", **Sort as**=plus. Without this **Sort as** specification, the index entry corresponding to "+" would have been found in the **Symbols** category:

  ```
  Symbols
  "*" 53, 78
  "+" 54
  "-" 55, 91-95
  ```

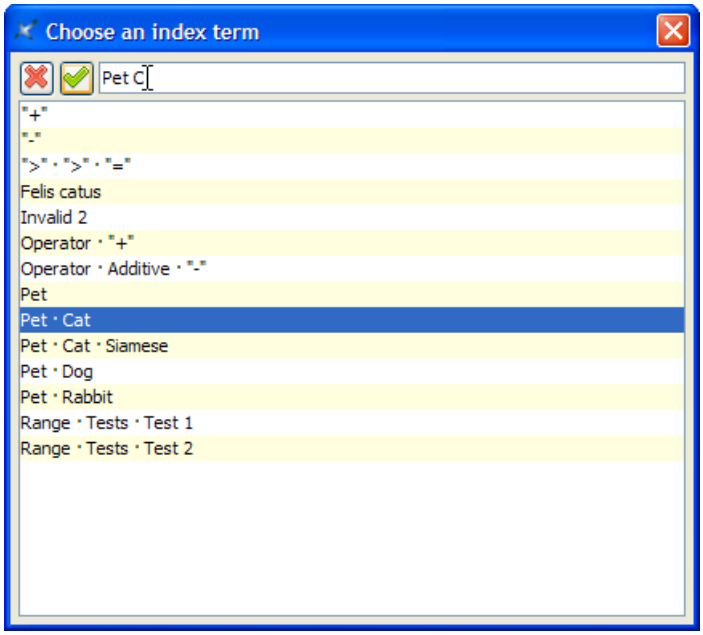
```
...
```

- Back of the book index:

```
D
Domesticated animals 34 See also Pet
```

specify **Term**=`Domesticated animals`, **See also**=`Pet`.

Note that the content of the **See also** field must refer to an existing index entry. That's why instead of typing "`Pet`", you can select this index entry by using the dialog box displayed by the **Pick from list** button found at the right of the **See also** row.



The above dialog box supports autocompletion. Note that if, for example, you want specify compound term "`Pet Cat Siamese`", you must type a space character between each simple term.

- Back of the book index:

```
F
Felis catus See Pet, Cat
```

specify **Term**=`Felis catus`, select "**Redirect to the following term**" then specify **Redirect**=`Pet`, **Redirect** #2=`Cat`. (In the above example, notice that `Felis catus` has no associated page number.)

Like **See Also**, the content of the **Redirect** field must refer to an existing index entry. Unlike **See Also**, a **Redirect** entry is merely a redirection to an actual index entry.

- Back of the book index:

```
O
Operation
    Additive
        "+" 87-90
```

1. Insert a first `<indexterm>` element at the beginning the range (this will give us page number 87).

In order to do that, use **Topic** → **Insert or Edit indexterm** and specify **Term**=`Operation`, **Term** #2=`Additive`, **Term** #3=`"+"`, **Sort as** #3=`plus`.

Then check "**Start range having the following name**" and give your range an identifier by specifying "`plus_reference`" in the **Start range** field.

2. Insert another `<indexterm>` element at the end the range (this will give us page number 90).

   In order to do that, use **Topic** → **Insert or Edit indexterm**, check "**End range having the following name**" and specify the same identifier, "`plus_reference`", in the **End range** field. All the other fields must be left blank.

   Note that instead of typing "plus_reference" in the **End range** field, you can select this identifier by using the dialog box displayed by the **Pick from list** button found at the right of the **End range** field.

Related information

• The "Insert or Edit indexterm" menu item

4. Useful features

4.1. Controlling the numbering of ordered lists

This chapter explains how you can to control the numbering of ordered lists by the means of one or more directives specified in the `@outputclass` attribute of the `<ol>` element.

By default, the numbering of nested ordered lists automatically alternates between the "`1.`" and "`a.`" formats. If you want more control on the numbering of ordered lists, then you'll have to specify one or more of the following directives in the `@outputclass` attribute of the `<ol>` element.

`lower-alpha`
`upper-alpha`
`lower-roman`
`upper-roman`
`decimal`
: Specifies the style of numbering.

`start(`*`positive_integer`*`)`
: Numbering begins at specified *positive_integer*.

`continue`
: Numbering begins where the preceding ordered list left off.

`inheritnum`
: Numbering inherits from outer-level ordered lists. For example, using this feature (e.g. `<ol outputclass="upper-alpha inheritnum">`), the items of a list nested at level 2 are labelled "`1.A.`", "`1.B.`", "`1.C.`", etc.

Restriction

- When using XMLmind XSL-FO Converter v6.0+[(5)] to generate RTF, WML, DOCX or ODT, directive `inheritnum` is supported but with minor limitations.

[(5)] v6.1+ strongly recommended.

For example, when both `start(positive_integer)` and `inheritnum` are specified, `inheritnum` is not honored.

- Directive `inheritnum` is not honored when generating Java Help and HTML Help.

Example: `<ol outputclass="upper-roman start(10)">` specifies an ordered list which starts with an "X.".

Note that it is still possible to specify any class name you want in the `@outputclass` attribute of the `<ol>` element. Example: `<ol outputclass="continue fancy-list">`.

4.2. Giving a background color to table cells

This chapter explains how you can give a background color to table cells by adding a `bgcolor(color)` directive to the `@outputclass` attribute of most table elements.

It's possible to give a background color to table cells by adding a `bgcolor(color)` directive, where *color* is any CSS color value, to the `@outputclass` attribute of the following elements:

Inside a `<simpletable>` element
: `<simpletable>`, `<sthead>`, `<strow>`, `<stentry>`.

Inside a `<table>` element
: `<tgroup>`, `<thead>`, `<tbody>`, `<row>`, `<entry>`.

Example:

```
<table>
  <tgroup cols="2" outputclass="bgcolor(#F0FFFF)">
    <tbody>
      <row>
        <entry>C1,1</entry>
        <entry>C1,2</entry>
      </row>
      <row outputclass="bgcolor(#FFFFF0)">
        <entry>C2,1</entry>
        <entry>C2,2</entry>
      </row>
    </tbody>
  </tgroup>
</table>
```

Note that it is still possible to specify any class name you want in the `@outputclass` attribute of a table element. Example: `<simpletable outputclass="bgcolor(#FFFFF0) fancy-table">`.

4.3. Fancy code blocks

This section explains how you can automatically add line numbers, “expand” tab characters and colorize the source code contained in `<pre>`, `<codeblock>` or any other element specializing `<pre>`.

Adding line numbers, “expanding” tab characters and colorizing the source code contained in `<pre>`, `<codeblock>` or any other element specializing `<pre>` is done by adding one or more of the following classes to the `@outputclass` attribute of this element:

`line-numbers`
`line-numbers-N` (where *N* is an integer > 0)
`show-line-numbers`

Give a number to the lines contained in the `<pre>` element.

By default, first line number is 1. This first line may be specified using the second form of the `line-numbers` class, for example, `line-numbers-100` specifies that lines are to be numbered and that first line number is 100.

`show-line-numbers`, an alias for `line-numbers-1`, is also accepted for compatibility with the DITA-OT.

`language-L` (where *L* is language name)

Colorize the source code contained in the `<pre>` element. *L*, a "programming language" such as `c`, `java`, `css`, `xml`, specifies how the source code should be colorized.

More information about this feature, commonly called *syntax highlighting*, in next section.

`tab-width-W` (*where W* is an integer >= 0)
`normalize-space`

Specifies whether tab characters should be expanded to a number of space characters. *W* is the maximum number of space characters for an expanded tab character, hence this value specifies the location of "tab stops". Examples: `tab-width-4` means: expand tabs to up to 4 space characters; `tab-width-0` means: do not replace tabs by space characters.

In addition to replacing tab characters by a number of space characters, `tab-width-W` (where *W* > 0) also removes the space characters which are common to the beginning of all text lines. That is, it removes the superfluous "indentation" in the `<pre>` element, if any. See example below.

Moreover `tab-width-W` (where *W* > 0) also removes the (useless) space characters found just before newline characters.

`normalize-space`, an alias for `tab-width-8`, is also accepted for compatibility with the DITA-OT.

Remember

When the `<outputclass>` attribute of any element specializing `<pre>` contains class `line-numbers`/`line-numbers-N` and/or class `language-L` , then class `tab-width-8` is implicitly specified too, that is, whitespace normalization is automatically performed. If this is not what you want, please explicitly add class `tab-width-0` to `@outputclass`.

Example: a simple C program featuring line numbering and syntax highlighting

In the following C program, lines are indented using tab characters.

```
<pre outputclass="language-c line-numbers tab-width-4">/* Hello World */
#include &lt;stdio.h&gght;

int main()
{
        printf("Hello World\n");
        return 0;
}</pre>
```

is rendered as:

```c
/* Hello World */
#include <stdio.h>

int main()
{
    printf("Hello World\n");
    return 0;
}
```

Example: superfluous indentation is removed by `tab-width-N` (where *N* > 0)

Attribute `@outputclass` implicitly also contains `tab-width-8`. First line " /tmp/" starts with 4 space characters.

```
<pre outputclass="line-numbers">    /tmp/
    /usr/
        bin/
        lib/
        <b>local/</b>
                <b>bin/</b>
                <b>lib/</b>
                <b>src/</b>
        src/
    /var/
</pre>
```

is rendered as:

```
/tmp/
/usr/
    bin/
    lib/
    local/
            bin/
            lib/
            src/
    src/
/var/

```

4.3.1. Syntax highlighting

This section explains how you can automatically colorize the source code contained in `<pre>`, `<codeblock>` or any other element specializing `<pre>`.

You can automatically colorize the source code contained in `<pre>`, `<codeblock>` or any other element specializing `<pre>`. This feature, commonly called *syntax highlighting*, has been implemented using an open source software component called "XSLT syntax highlighting".

If you want to turn on syntax highlighting in a DITA document, suffice to add attribute `@outputclass` to a `<pre>`, `<codeblock>` or any other element specializing `<pre>`. The value of attribute `@outputclass` must be any of: `language-bourne` (or `-shell` or `-sh`), `language-c`, `language-cmake` (or `-make` or `-makefile`), `language-cpp`, `language-csharp`, `language-css21` (or `-css`), `language-delphi`, `language-ini`, `language-java`, `language-javascript`, `language-lua`, `language-m2` (Modula 2), `language-`

`perl`, `language-php`, `language-python`, `language-ruby`, `language-sql1999`, `language-sql2003`, `language-sql92` (or `-sql`), `language-tcl`, `language-upc` (Unified Parallel C), `language-html`, `language-xml`.

If you want to customize syntax highlighting for an HTML-based output format (XHTML, EPUB, etc), then redefine any of the following CSS styles:

- `.hl-keyword` (keywords of a programming language),
- `.hl-string` (string literal),
- `.hl-number` (number literal),
- `.hl-comment` (any type of comment),
- `.hl-doccomment` (comments used as documentation, i.e. javadoc, or xmldoc),
- `.hl-directive` (preprocessor directive or in XML, a processing-instruction),
- `.hl-annotation` (annotations or "attributes" as they are called in .NET),
- `.hl-tag` (XML tag, i.e. element name),
- `.hl-attribute` (XML attribute name),
- `.hl-value` (XML attribute value),
- `.hl-doctype` (`<!DOCTYPE>` and all its content).

Example: customization of the syntax highlighting of a keyword for HTML-based output formats

```
.hl-keyword {
    font-weight: bold;
    color: #602060;
}
```

This can be done from within XMLmind XML Editor using **Options** → **Customize Configuration** → **Customize Document Conversion Stylesheets**.

If you want to customize syntax highlighting for an XSL-FO-based output format (PDF, RTF, etc), then redefine any of the following `<attribute-set>`s: `hl-keyword`, `hl-string`, `hl-number`, `hl-comment`, `hl-doccomment`, `hl-directive`, `hl-annotation`, `hl-tag`, `hl-attribute`, `hl-value`, `hl-doctype`.

Example: customization of the syntax highlighting of a keyword for XSL-FO-based output formats

```
<xsl:attribute-set name="hl-keyword" use-attribute-sets="hl-style">
  <xsl:attribute name="font-weight">bold</xsl:attribute>
  <xsl:attribute name="color">#602060</xsl:attribute>
</xsl:attribute-set>
```

This can be done from within XMLmind XML Editor using **Options** → **Customize Configuration** → **Customize Document Conversion Stylesheets**.

4.4. Rich media content

This chapter explains how to add SVG, MathML, TeX/LaTeX math, audio, video and Flash animations to your DITA topics and how **`ditac`** processes this rich media content in the case where the output format supports rich media (e.g. XHTML 5, EPUB 3) and also in the case where the output format does not support rich media (e.g. XHTML 1, PDF, RTF).

Note

XMLmind XML Editor has buttons in its DITA **Topic** tool bar which allows to easily insert any of the elements described in this chapter.

*Figure 7. The menu displayed by the "**Add image**" button*

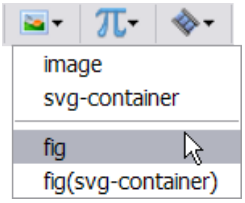


*Figure 8. The menu displayed by the "**Add MathML equation**" button*

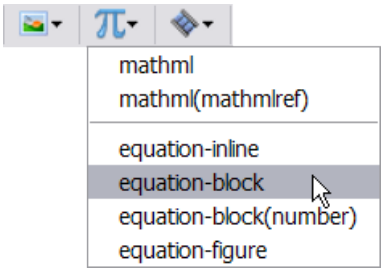
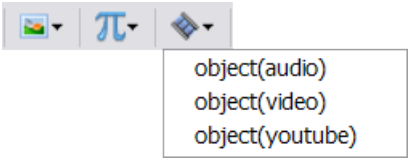


*Figure 9. The menu displayed by the "**Insert media object**" button*



SVG

It is possible to include SVG graphics in a DITA document either by reference or by inclusion. Use an `<svg-container>/<svgref>` element pointing to an SVG file to include it by reference. Example:

The XML source code corresponding to the above example is:

```
<p><svg-container><svgref href="media/graphic.svg"/></svg-container></p>
```

It's also possible to use an `<image>` element pointing to an SVG file to include it by reference. Example:

```
<p><image href="media/graphic.svg"/></p>
```

Embedding SVG graphics in a DITA document can be achieved using the same `<svg-container>` element. Example:

The XML source code corresponding to the above example is:

```
<p><svg-container>
  <svg:svg height="64.710144" version="1.1"
    viewBox="0 0 104.28986 51.768115" width="130.36232"
    xmlns:svg="http://www.w3.org/2000/svg">
  ...
  </svg:svg>
</svg-container></p>
```

Embedding SVG

- It is still recommended to include SVG graphics by reference using the `<image>` element rather then `<svg-container>`/`<svgref>`. The `<image>` element has useful attributes (`@width`, `@height`, `@scale`, `@scalefit`) allowing to adjust the dimension of the image. Moreover this elements permits on the fly conversion between image formats.
- It is not recommended to embed SVG elements in a DITA document as this is likely to cause many validation problems.
- An embedded SVG element is kept embedded only when generating the following output formats: XHTML 5, XHTML 5 Web Help, EPUB 3 and all XSL-FO based output formats (PDF, RTF, DOCX, etc). For any other output format, an embedded SVG element is automatically extracted and replaced by an `<image>` element pointing to a "`.svg`" file.

MathML

It is possible to include math in a DITA document either by reference or by inclusion. Use an `<mathml>`/`<mathmlref>` element pointing to a MathML file to include it by reference. Example:

$$R_0 = \left| \frac{n_1 - n_2}{n_1 + n_2} \right|^2$$

The XML source code corresponding to the above example is:

```
<p><mathml><mathmlref href="media/math.mml"/></mathml></p>
```

Embedding MathML in a DITA document can be achieved using the same `<mathml>` element. Example:

$$\begin{cases} \nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \\ \nabla \times \mathbf{B} = \mu_0 \mathbf{J} + \mu_0 \varepsilon_0 \frac{\partial \mathbf{E}}{\partial t} \end{cases}$$

The XML source code corresponding to the above example is:

```
<p><mathml>
  <m:math display="block"
    xmlns:m="http://www.w3.org/1998/Math/MathML">
    <m:row>
    ...
    </m:mrow>
  </m:math>
</mathml></p>
```

For clarity, it is recommended to wrap `<mathml>` into the following equation elements: `<equation-inline>`, `<equation-block>`, `<equation-figure>`. Example:

Equation 1. Reflectance (case of normal incidence)

$$R_0 = \left| \frac{n_1 - n_2}{n_1 + n_2} \right|^2$$

The XML source code corresponding to the above example is:

```
<equation-figure>
  <title>Reflectance (case of normal incidence)</title>
  <mathml>
    <m:math display="block"
      xmlns:m="http://www.w3.org/1998/Math/MathML">
      <m:mrow>
      ...
      </m:mrow>
    </m:math>
  </mathml>
</equation-figure>
```

Other example, `<equation-block>` elements containing a empty `<equation-number>` (to be automatically filled with an equation number):

$$R_0 = \left| \frac{n_1 - n_2}{n_1 + n_2} \right|^2 \quad (1)$$

Note that the counter used to number to `<equation-figure>` elements having a `<title>` and the counter used to number `<equation-block>` elements containing an empty `<equation-number>` are different. Therefore mixing numbered `<equation-figure>`s and numbered `<equation-block>`s in the same DITA document may result in a hard to understand equation numbering.

Embedding MathML

- An embedded MathML element is kept embedded only when generating the following output formats: XHTML 5, XHTML 5 Web Help, EPUB 3 and all XSL-FO based output formats (PDF, RTF, DOCX, etc), but only when Apache FOP or XMLmind XSL-FO Converter are used as an XSL-FO processor[6]. For any other output format, an embedded MathML element is automatically extracted and replaced by an `<image>` element pointing to a "`.mml`" file.
- Though a number of web browsers natively support embedded MathML, it's recommended to specify XSLT stylesheet parameter `mathjax` to let MathJax render embedded MathML found in the generated XHTML 5 and XHTML 5 Web Help files.
- A "`.mml`" file is automatically converted to SVG or PNG by the means of the JEuclid image converter. Such image converter is found the `ditac-N_N_N-plus-fop.zip` distribution and is automatically registered with ditac.

---

[6] RenderX XEP does not support MathML. Antenna House Formatter supports MathML as an option.

TeX/LaTeX math

Embedding TeX/LaTeX math in a DITA document can be achieved by inserting a `<foreign>` element having an `@outputclass` attribute containing "`embed-latex`"[7] preferably into an `<equation-inline>`, `<equation-block>` or `<equation-figure>` element. Example:

$$\int_0^\infty \mathrm{e}^{-x}\,\mathrm{d}x \tag{2}$$

The XML source code corresponding to the above example is:

```
<equation-block><foreign outputclass="embed-latex"
  >$$\int_0^\infty \mathrm{e}^{-x}\,\mathrm{d}x$$</foreign>
  <equation-number/>
</equation-block>
```

Tip

TeX/LaTeX math delimiters are optional. However specifying them may be useful as `\[`*math*`\]`, `$$`*math*`$$` or `\begin{`*env_name*`}`*math*`\end{`*env_name*`}` specify displayed math, while `\(`*math*`\)` or `$`*math*`$` specify in-line math.

It's also possible to insert an `<image>` element pointing to an "`.tex`" file into an `<equation-inline>`, `<equation-block>` or `<equation-figure>` element. Example: $\lim_{x\to\infty} \exp(-x) = 0$.

The XML source code corresponding to the above example is:

```
<p>... Example:
<equation-inline><image href="media/limits.tex"/></equation-inline>.</p>
```

Embedding TeX math

- EmbeddedTeX/LaTeX math is kept embedded only when generating the following output formats: XHTML 5 and XHTML 5 Web Help. For any other output format, EmbeddedTeX/LaTeX math is automatically extracted and replaced by an `<image>` element pointing to a "`.tex`" file.
- XSLT stylesheet parameter `mathjax` ***must be specified*** to let MathJax render embeddedTeX/LaTeX math found in the generated XHTML 5 and XHTML 5 Web Help files.
- A "`.tex`" file is automatically converted to SVG or PNG by the means of the JLaTeXMath image converter. Such image converter is found the `ditac-`*N_N_N*`-plus-fop.zip` distribution and is automatically registered with ditac.

  JLaTeXMath is currently less capable than MathJax, yet all the following TeX/LaTeX commands are available:

  – macros from *amsmath* and symbols from *amssymb* and *stmaryrd*
  – TeX macro `\over`

[7] For compatiblity with an existing DITA-OT plug-in, one of its test equations being

$$\lim_{x\to 0} \frac{e^x-1}{2x} \overset{\left[\frac{0}{0}\right]}{\underset{\mathrm{H}}{=}} \lim_{x\to 0} \frac{e^x}{2} = \frac{1}{2}$$

.

- accents from *amsxtra* package
- macros `\definecolor`, `\textcolor`, `\colorbox` and `\fcolorbox` from the package color
- macros `\rotatebox`, `\reflectbox` and `\scalebox` from the package *graphicx*
- most latin, cyrillic and greek characters are available
- commands \newcommand and \newenvironment
- environments `array`, `matrix`, `pmatrix`,..., `eqnarray`, `cases`
- vertical and horizontal lines are handled in `array` environment
- commands to change the size of the font are available : `\tiny`, `\small`,..., `\LARGE`, `\huge`, `\Huge`

Audio

Use the `<object>` DITA element to add audio to your DITA topics. Example:

audio.mp3 (audio/mpeg)

The XML source code corresponding to the above example is:

```
<p><object data="media/audio.mp3" type="audio/mpeg">
     <param name="source" value="media/audio.ogg"
            valuetype="ref" type="audio/ogg"/>

     <param name="source" value="media/audio.m4a"
            valuetype="ref" type="audio/mp4"/>

     <param name="source" value="media/audio.wav"
            valuetype="ref" type="audio/wav"/>

     <param name="controls" value="true"/>
</object></p>
```

Notes:

- The `@data` and `@type` attributes are required. The value of the `@type` attribute must start with "`audio/`".
- It is strongly recommended to specify *alternate audio files* as modern web browsers, while all supporting the HTML 5 `<audio>` element, vary in their support of audio formats. This is done by adding `<param>` child elements to the `<object>` element. Such `<param>` elements must have a `name="source"` attribute, a `valuetype="ref"` attribute, a `@value` attribute referencing an audio file and preferably, a `@type` attribute specifying the media type of the audio file.
- It is possible to add `<param>` elements corresponding to the attributes supported by the HTML 5 audio element (`<crossorigin>`, `<preload>`, `<autoplay>`, `<mediagroup>`, `<loop>`, `<muted>`, `<controls>`). In the above example, we have added a `<param>` element corresponding to the `@controls` HTML 5 attribute. Note that in the case of HTML 5 *boolean* attributes (`<autoplay>`, `<loop>`, `<muted>`, `<controls>`), the `@value` attribute of a `<param>` is not significant. For example, in the case of the above example, you could have specified "`yes`", "`on`", "`1`", etc, instead of "`true`".
- If the `<object>` element has a `<desc>` child element, then this `<desc>` element is used to generate fallback content in case audio is not supported. If the object element has no `<desc>` child element, then a simple fallback content is automatically generated by ditac. This automatic fallback content basically consists in a link allowing to download the audio file.
- When ditac is used to generate an XSL-FO based format (PDF, RTF, etc), only the fallback content appears in the output file.

- Lightweight DITA has an <audio> element, so there is no need to use an <object> element. The equivalent of the above <object> example would be:

```
<audio>
  <media-controls value="true"/>

  <media-source value="media/audio.mp3"/>
  <media-source value="media/audio.ogg"/>
  <media-source value="media/audio.m4a"/>
  <media-source value="media/audio.wav"/>
</audio>
```

Video

Use the <object> DITA element to add video to your DITA topics. Example:

video.mp4 (video/mp4)

The XML source code corresponding to the above example is:

```
<p><object data="media/video.mp4" type="video/mp4">
     <param name="source" value="media/video.ogv"
            valuetype="ref" type='video/ogg; codecs="theora, vorbis"'/>

     <param name="source" value="media/video.webm"
            valuetype="ref" type="video/webm"/>

     <param name="width" value="320"/>
     <param name="controls" value="yes"/>
     <param name="poster" value="media/video_poster.jpg"
            valuetype="ref"/>
</object></p>
```

Notes:

- The @data and @type attributes are required. The value of the @type attribute must start with "video/".
- It is strongly recommended to specify *alternate video files* as modern web browsers, while all supporting the HTML 5 <video> element, vary in their support of video formats. This is done by adding <param> child elements to the <object> element. Such <param> elements must have a name="source" attribute, a valuetype="ref" attribute, a @value attribute referencing a video file and preferably, a @type attribute specifying the media type of the video file.
- It is possible to add <param> elements corresponding to the attributes supported by the HTML 5 <video> element (<crossorigin>, <poster>, <preload>, <autoplay>, <mediagroup>, <loop>, <muted>, <controls>, <width>, <height>). In the above example, we have added a <param> element corresponding to the <width>, <controls> and <poster> HTML 5 attributes. Note that in the case of HTML 5 *boolean* attributes (<autoplay>, <loop>, <muted>, <controls>), the @value attribute of a <param> is not significant. For example, in the case of the above example, you could have specified "true", "on", "1", etc, instead of "yes".
- If the <object> element has a <desc> child element, then this <desc> element is used to generate fallback content in case video is not supported. If the object element has no <desc> child element, then a simple fallback content is automatically generated by ditac. This automatic fallback content basically

consists in a link allowing to download the video file. The <param> element corresponding to the <poster> HTML 5 attribute, if present, is used to generate a nicer automatic fallback content.

- When ditac is used to generate an XSL-FO based format (PDF, RTF, etc), only the fallback content appears in the output file.
- Lightweight DITA has an <video> element, so there is no need to use an <object> element. The equivalent of the above <object> example would be:

```
<video width="320">
  <video-poster value="media/video_poster.jpg"/>

  <media-controls value="true"/>

  <media-source value="media/video.mp4"/>
  <media-source value="media/video.ogv"/>
  <media-source value="media/video.webm"/>
</video>
```

Other uses of the <object> element

We have seen in previous sections how the <object> DITA element may be used to add audio and video to your DITA topics. In any case other than those described in previous sections, the <object> DITA element is converted to the equivalent <object> XHTML element. For example, if you want to add a YouTube video to your DITA topics, simply do it in DITA as you would do it in XHTML using the <object> element.

Watch this test video on YouTube.

The XML source code corresponding to the above example is:

```
<p><object data="https://www.youtube.com/embed/C0DPdy98e4c"
          width="640" height="360">
     <desc><image href="media/youtube_icon.png"/> Watch this <xref format="html"
     href="https://youtu.be/C0DPdy98e4c" scope="external">test video</xref> on
     YouTube.</desc>
</object></p>
```

Notes:

- If the <object> element has a <desc> child element, then this <desc> element is used to generate fallback content in case the media object is not supported. If the object element has no <desc> child element, then a simple fallback content is automatically generated by ditac. This automatic fallback content basically consists in a link allowing to download the media file.
- When ditac is used to generate an XSL-FO based format (PDF, RTF, etc), only the fallback content appears in the output file.

5. Content inclusion

In the next two sections, we'll learn how to reference in topic A some contents found in a topic B. We'll first learn how to do it the easy way by using **Copy as Reference**/**Paste**. Then, for those who prefer to control everything to the finest degree, we'll learn how to achieve the same results using a low-level method.

5.1. Easy content inclusion

Before you begin

The transclusion of elements having a `@conref` attribute must be turned on (which is the case by default).

Note

As of XMLmind XML Editor v4.9, it's possible to completely turn off the transclusion of conref by using menu item **Options** → **Customize Configuration** → **Conref Transclusion**. Note that this user preference is specified separately for topics and for maps.

About this task

The `@conref` attribute of an element allows to reference the contents (text, child elements, some of the attributes) of another element.

Instead of just seeing an empty element having a `@conref` attribute (that is, the ``pointer''), it is nicer to see the referenced contents. This process is called *transclusion* and XMLmind XML Editor can do it for you.

Note

Everything explained here should also work for DITA maps.

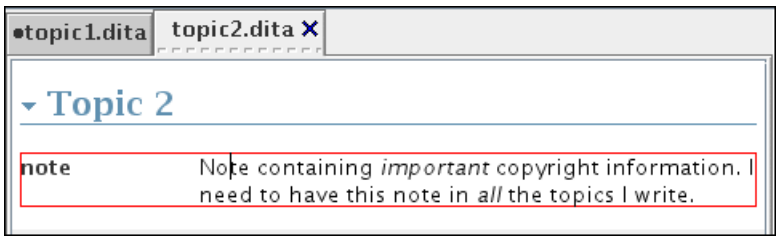
Note

The following procedure (**Copy as Reference** then **Paste**) is not specific to DITA. The same procedure could be used to add references to DocBook or XHTML documents. This is why it is explained in great details in our tutorial.

Procedure

1. Open in XMLmind XML Editor the topic containing the element you want to reference.
2. Select this element.

   Let's call this element the *conref target*.

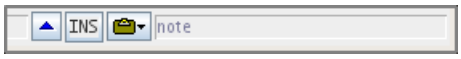


3. If this selected element has no `@id` attribute, specify one using the **Attributes** tool.
4. If you want to reference a *range of nodes* rather a single element, extend the selection (**Select** → **Extend Selection to Following Sibling**, `Esc Right-Arrow`) to some nodes following this first selected element.

Just make sure that the end of the node range is an element having the same type as the first selected element and that this end of range element has an `@id` attribute.

5. Press Ctrl+Shift-C (**Edit** → **Reference** → **Copy as Reference**).

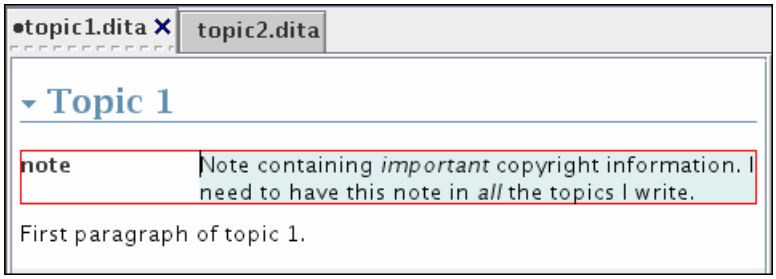
   You'll see the name of the element copied as reference displayed in dimmed blue at the bottom right of XMLmind XML Editor main window.



6. Switch to the topic where you want to create the reference.

7. Use Ctrl-U (**Edit** → **Paste Before**), Ctrl-V (**Edit** → **Paste**) or Ctrl-W (**Edit** → **Paste After**) to paste a reference to the conref source.

   Let's call this pasted reference the *conref source*.



8. Sometimes, you'll want to add attributes which are specific to the conref source (typically an `@id` attribute). In such case:

   a. Select the conref source.

   b. Use **Edit** → **Reference** → **Untransclude** to un-transclude the conref source.

      You'll see an element having the same name as the conref source but having no content and having a `@conref` attribute pointing the conref target.

   c. Use the **Attributes** tool to specify one or more attributes.

   d. Use **Edit** → **Reference** → **Retransclude** to re-transclude the conref source.

Related information

• Section 5.2. Content inclusion: an alternative, low-level, method

5.2. Content inclusion: an alternative, low-level, method

Procedure

1. Insert the element (the *conref source*) you wish to transform into a reference to another element contained elsewhere (the *conref target*).

   You may use Ctrl-H (**Edit** → **Insert Before**), Ctrl-I (**Edit** → **Insert**) or Ctrl-J (**Edit** → **Insert After**) to do this.

2. Using the **Attributes** tool, specify a `@conref` attribute for the conref source.

Specifying a value “by hand” for the `@conref` attribute is tedious and error-prone. That's why using this method rather than the easy one described in Section 5.1. Easy content inclusion is not recommended.

3. If you want to reference a *range of nodes* rather a single element, use to **Attributes** tool to also give a `@conrefend` attribute to the conref source.
4. Specify other attributes, for example an `@id` attribute, if you want.
5. Use **Edit** → **Reference** → **Retransclude** to transclude the conref source.

Related information

• Section 5.1. Easy content inclusion

5.3. Limitations and specificities of the implementation of transclusion in XMLmind XML Editor

Limitations

- Content inclusion achieved using **Copy as Reference**/**Paste** does not perform every possible check on the validity of the reference. That's why it's possible to use **Copy as Reference**/**Paste** successfully in a document and still get errors when you'll convert this document to other formats.
- Content *pushed* from one topic to another (the `@conaction` attribute) is not transcluded by XMLmind XML Editor.
- Something like `<keyword keyref="product-name"/>`, where the definition of key `product-name` contains `<keyword>Thing-O-Matic</keyword>` is not transcluded by XMLmind XML Editor.

All these limitations apply only to XMLmind XML Editor as an *authoring tool*. They do not apply when you'll use XMLmind XML Editor to convert a DITA document to formats such as HTML, PDF, RTF, etc.

Specificities

If your topics make use of attributes `@keyref` and/or `@conkeyref`, it is strongly recommended to check **Tools** → **Use as Master Document** after opening your map in XMLmind XML Editor. This declaration is persistent across editing sessions. Therefore this is done once for all.

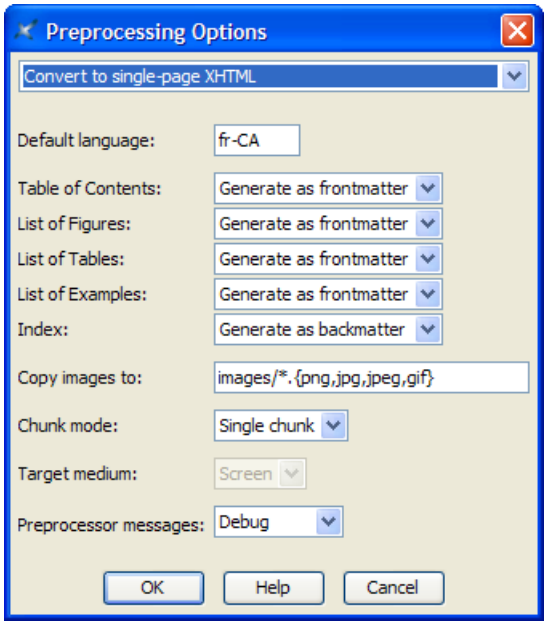
By doing this, you'll instruct XMLmind XML Editor to use your DITA map as a *key space* for all the topics referenced by this map. More information about the *master document* feature in "*XMLmind XML Editor - Online Help*".

6. Preprocessing options

Converting a DITA document to formats such as HTML, PDF, RTF, etc, comprises two steps. First step consists in preprocessing the DITA document. Second step consists in translating the preprocessed DITA document to the other format by the means of XSLT stylesheets.

The XSLT stylesheets are parameterized by using **Options** → **Customize Configuration** → **Change Document Conversion Parameters**, while the preprocessor is parameterized by using **Options** → **Customize Configuration** → **Preprocessing Options**. The latter menu item displays a dialog box which is described in this section.

*Figure 10. The **Preprocessing Options** dialog box*



The top combobox allows to select the group of options to be edited. Each group of options is completely separated from the other. For example, specifying that an index is to be generated as backmatter for group "**Convert to single-page XHTML**" will have an effect when you'll use **Map** → **Convert Document** → **Convert to XHTML [one page]** and no effect at all when you'll use **Map** → **Convert Document** → **Convert to HTML Help** or when you'll use **Topic** → **Convert Document** → **Convert to XHTML [one page]** (because there is a separate "**Convert to single-page XHTML**" group of options for the **Map**, **BookMap** and **Topic** configurations).

Default language

Specifies the main language of the document. Examples: `en`, `en-US`, `fr`, `fr-CA`. This information is needed in order to sort the index entries. By default, this information is taken from the `@xml:lang` attribute of the root element of the topic map (if any, "`en`" otherwise).

Table of Contents

Specifies whether to automatically generate a **Table of Contents** and, if a **Table of Contents** is to be generated, where to generate it. *Frontmatter* means at the beginning of the document. *Backmatter* means at the end of the document.

This option, like **List of Figures**, **List of Tables**, **List of Examples** and **Index**, is mainly useful when working with maps or individual topics. When working with a bookmap, the preferred way to specify the location, if any, of a **Table of Contents** is to do it in the bookmap itself. In all cases, what's specified in the bookmap has priority over the value of this option.

List of Figures

Specifies whether to automatically generate a **List of Figures** and, if a **List of Figures** is to be generated, where to generate it.

List of Tables

Specifies whether to automatically generate a **List of Tables** and, if a **List of Tables** is to be generated, where to generate it.

List of Examples

Specifies whether to automatically generate a **List of Examples** and, if a **List of Examples** is to be generated, where to generate it.

Index

Specifies whether to automatically generate an **Index** and, if an **Index** is to be generated, where to generate it.

Copy images to

Copy the image files referenced in the topics to specified directory. If specified path is relative, it is relative to the output directory.

In the above screenshot, "`images/*.{png,jpg,jpeg,gif}`" means:

- copy to directory `images/`, relative to the output directory,
- as is (that is, without having to convert the image to another image format),
- all the images referenced in the document source, having a `png`, `jpg`, `jpeg` or `gif` filename extension.
- Any image referenced in the document source having a filename extension other than `png`, `jpg`, `jpeg` or `gif` (e.g. `svg`, `tif`) will be automatically converted to an image having a `png`, `jpg`, `jpeg` or `gif` filename extension.

When this field is left empty, the generated document will reference the image files using absolute URLs. This is harmless for PDF, RTF, etc, files because at the end of the conversion process, such files will *embed* a copy of the image files. However, this is rarely what is wanted for HTML-based formats (XHTML, Java Help, HTML Help, Eclipse Help, EPUB, etc).

Chunk mode

Allowed values are **Automatic**, **Single** and **None**.

Chunk **Automatic** means: ignore the chunk specification found in the topic map and output a single chunk for the **Print** medium; honor the chunk specification for the **Screen** medium.

Chunk **None** means ignore the chunk specification found in the topic map and output a single chunk. As explained above, chunk **None** is implicit for some formats (PostScript, PDF, RTF, etc).

Both the **None** and **Single** values may be used to force the generation of a single output file. Chunk **Single** allows to reuse a map designed to output multiple HTML pages in order to generate a single HTML file or a PDF file.

Target medium

Explicitly specifies the output medium: **Screen** (XHTML, HTML Help, Eclipse Help, etc) or **Print** (PDF, RTF, etc). By default, the output media is guessed using the extension of the output file.

Preprocessor messages

Specifies the level of verbosity of the preprocessor. Allowed values are (from not verbose to very verbose): **None**, **Information**, **Verbose**, **Debug**.

Some fields may be ``grayed out'' (disabled). This happens in two cases:

1. The DITA configuration has been customized by the local guru. This automatically prevents the end user from making any change to the preprocessing options.
2. Changing the values of some options (e.g. **Target medium**) would break the stock configuration.