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# Exchanger XML Editor - Editing

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Exchanger XML Editor - Editing


## Editing XML Content


The Exchanger XML Editor provides numerous aids for simplifying the editing of XML content including: document templates; tag prompting; end tag completion; quick commenting, tagging and indenting; and content formatting (or pretty printing). Standard editing functionality such as Undo, Redo, Find/Replace, Goto Line Number is also supported.

## Window Management

### Splitting Multiple Windows

Two or more documents can be displayed on the screen at the same time to simplify concurrent editing or comparison. Open two files as normal and then choose **View->Split Vertically** or press the **Split Vertically** button (  ) from the Standard Toolbar. The two files will be displayed vertically

side-by-side. Multiple documents can also be displayed one on top of the other by choosing **View->Split Horizontally** or pressing the **Split Horizontally** button (  ). The number of splits is only limited

by the number of open documents, and both vertical and horizontal splits can occur at the same time. To undo a split choose **View->Unsplit** or press the Unsplit button (  ). When working with multiple

windows, it is easy to temporarily maximize or minimize a particular document by clicking on the expand/collapse icons in the splitters between windows.

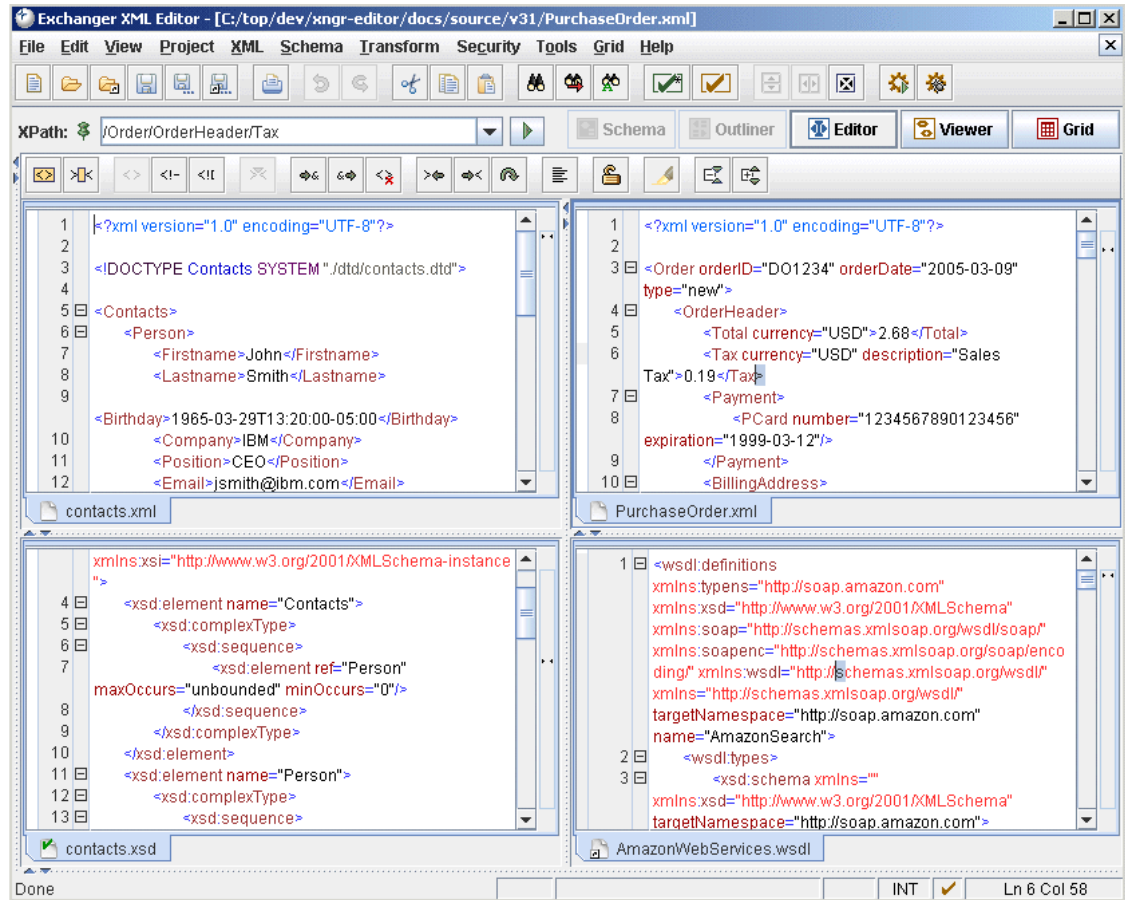
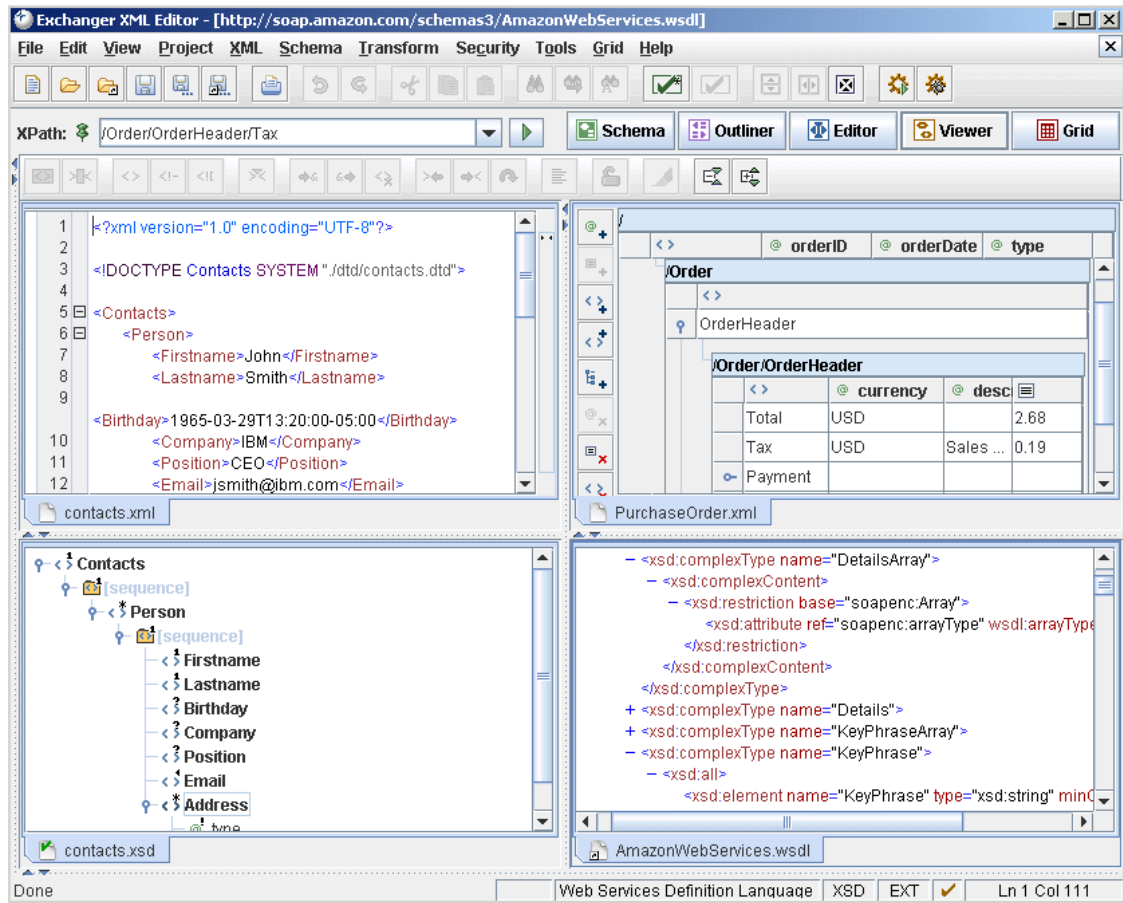


Figure 1. Splitting Windows Vertically and Horizontally



**Figure 2. Splitting Windows With Multiple Views**

Different views can be used in different windows - the above example shows concurrent documents using the Editor, Schema Viewer, Grid and Viewer.

## Synchronising Split Windows

To further aid concurrent use, the scrolling of the two or more split windows can be synchronised by selecting **View->Synchronise Splits on XPath**. This can be particularly useful when comparing versions of the same document, for example, with multiple language translations where the structure remains constant while the text is different.

## Splitting a Document

Different parts of a file can be edited at the same time by splitting the file in a single window. Open a file and place the cursor at the top of the editing window, just below the Editor Toolbar, so that the double-arrow cursor icon is visible. Drag the cursor downwards and then release. (Alternatively, use the built-in shortcut **Ctrl+F6**, or **Command+F6** on the Macintosh, to quickly split the current document in two). It is possible to view and edit each section independently - this is particularly useful for editing formats such as SVG and XHTML where Javascript code can be located in one section and the actual XML tagging in another. To quickly move between splits, again use the keyboard shortcut **Ctrl+F6**. To remove the split, simply drag the divider to the top of the window.

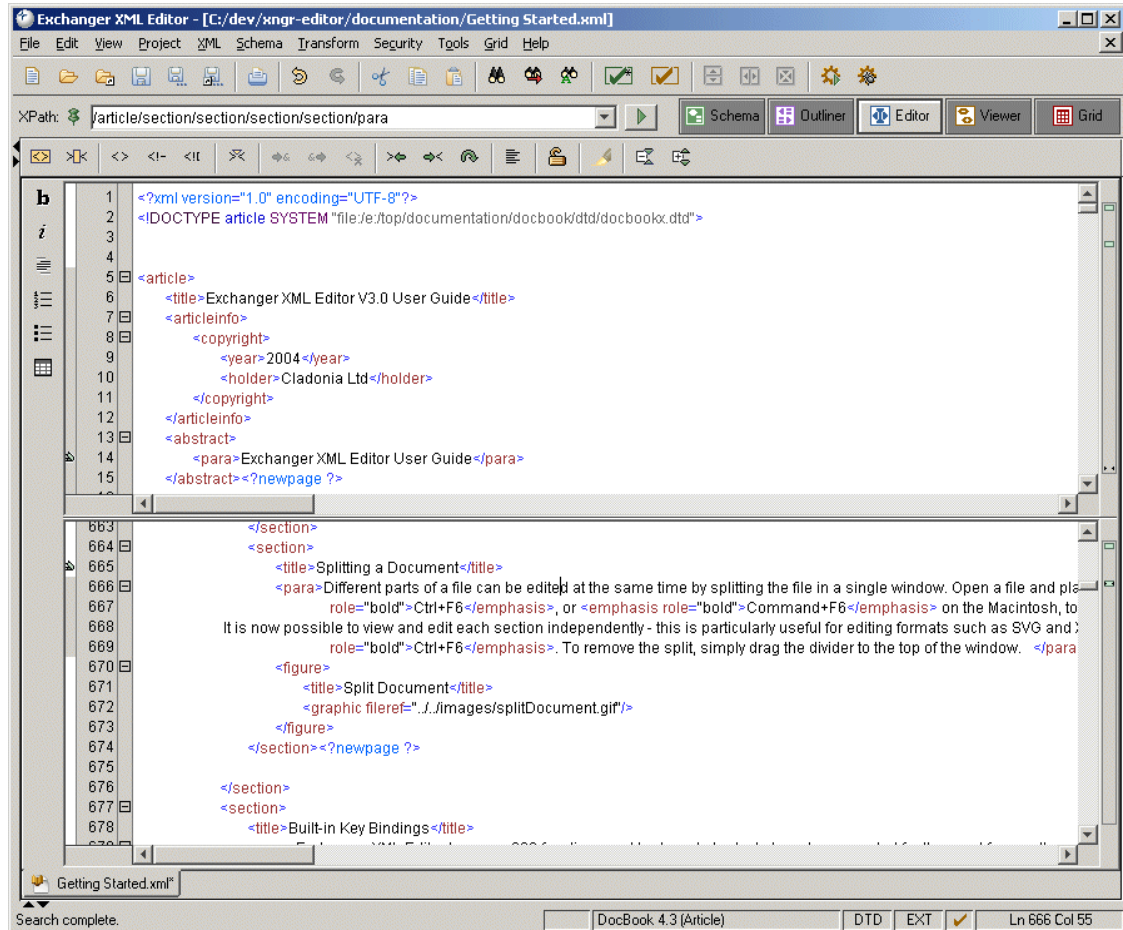


Figure 3. Split Document

## Built-in Key Bindings

Exchanger XML Editor has over 200 functions and keyboard shortcuts have been created for the most frequently used ones. These proprietary shortcuts follow the typical conventions for the platform (for example, using the **COMMAND** key on Macintosh while using the **CTRL** key on Windows/Unix) and are fully documented at the end of this user guide. In addition to these defaults, Exchanger XML also supports standard Emacs key mappings for common editing tasks. To change the active Key bindings, choose **File->Preferences** and on the **Keys** tab, set the Active configuration to **emacs** or **default** as required.

## Emacs Key Bindings

Most common Emacs key mappings are supported in Exchanger XML Editor, although a few have to be modified slightly due to limitations in Java. Mappings that have changed include Print current document, Find next in current document, Goto Line Number, Unindent, Move to beginning of Data and Move to end of data. Otherwise the mappings are standard and all are listed below:

**Table 1.**

Action	Description	Shortcut
File: Close	Close current file	Ctrl+X K
File: CloseAll	Close all files	Ctrl+X Ctrl+C
File: NewDocument	New Document	Ctrl+X Ctrl+N
File: Open	Open a file	Ctrl+X Ctrl+F
File: Print	Print current document	Alt+F9
File: Save	Save current file	Ctrl+X Ctrl+S
File: SaveAll	Save all files	Ctrl+X S
File: SaveAs	Save file as	Ctrl+X Ctrl+W
Edit: Find	Find in current document	Ctrl+S
Edit: FindNext	Find next in current document	F3
Edit: GotoLine	Goto line number	Ctrl+X G
Edit: Indent	Indent	Ctrl+Q
Edit: Redo	Redo previous undo	Ctrl+X R
Edit: Replace	Replace in current document	Alt+R
Edit: Undo	Undo last edit	Ctrl+S U
Edit: Unindent	Unindent	Alt+Q
Editor: Backward	Moves insertion point to the left one	Ctrl+B
Editor: Begin	Moves to beginning of data	Alt+A
Editor: BeginLine	Moves to beginning of line	Ctrl+A
Editor: Copy	Copy	Alt+W
Editor: Cut	Cut	Ctrl+W
Editor: DeleteNextChar	Deletes the next character	Ctrl+D
Editor: DeletePrevChar	Deletes the previous character	BACKSPACE
Editor: Down	Moves insertion point down one	Ctrl+N

Action	Description	Shortcut
	line	
Editor: End	Moves to end of data	Alt+E
Editor: EndLine	Moves to end of line	Ctrl+E
Editor: Forward	Moves insertion point to the right one	Ctrl+F
Editor: NextWord	Moves to beginning of next word	Alt+F
Editor: PageDown	Moves down one information pane	Ctrl+V
Editor: PageUp	Moves up one information pane	Alt+V
Editor: Paste	Paste	Ctrl+Y
Editor: PreviousWord	Moves to beginning of previous word	Alt+B
Editor: SelectAll	Select All	Ctrl+X H
Editor: Up	Moves insertion point up one line	Ctrl+P

## Customized Key Bindings

Only some of the over 200 functions of the Exchanger XML Editor have built-in shortcuts. To create new shortcuts, or to override the existing ones, select **File->Preferences** and choose the **Keys** tab. In the **Command** section of the dialog, click on the **Name** drop-down and select the **File: ImportFromText**. Press the **Edit...** button and in the **New Key Sequence** field of the **Edit Key Sequence** dialog, enter the key combination **Ctrl+I** (by holding the **Ctrl** key and the **I** key down simultaneously) and click **OK**. A warning is displayed, saying that the key sequence is already in use and asking if it should be over-ridden. Click **No** and instead, highlight the **Ctrl+I** sequence and this time enter **Ctrl+Shift+I** (by holding the **Ctrl** key, the **Shift** key and the **I** key down simultaneously) and press **OK**. Close the Preferences dialog and then enter the key sequence **Ctrl+Shift+I** and the dialog corresponding to the **File->Import->From Text File...** menu item should appear.

## Convenience Editing Functions

Under the **Edit->XML** menu item, there are a number of functions available that greatly simplify the editing of XML content.

**Table 2. Convenience Editing Functions**

Action	Description	Shortcut
Edit->XML->Tag...	Surround Highlighted content with Tag	Ctrl+T
Edit->XML->Repeat Last Tag	Surround Highlighted content with previous tag	Ctrl+Shift+T
Edit->XML->Rename Element	Change the current start and end tag	Ctrl+R
Edit->XML->Expand Empty Element	Replace an empty element with a start and end tag	Ctrl+L
Edit->XML->Goto Start Tag	Move the cursor to the current start tag	Ctrl+Up
Edit->XML->Goto End Tag	Move the cursor to the current	Ctrl+Down

Action	Description	Shortcut
	end tag	
Edit->XML->Goto Next Attribute Value	Move the cursor into the next attribute value	Ctrl+Shift+Down
Edit->XML->Goto Previous Attribute Value	Move the cursor into the previous attribute value	Ctrl+Shift+Up

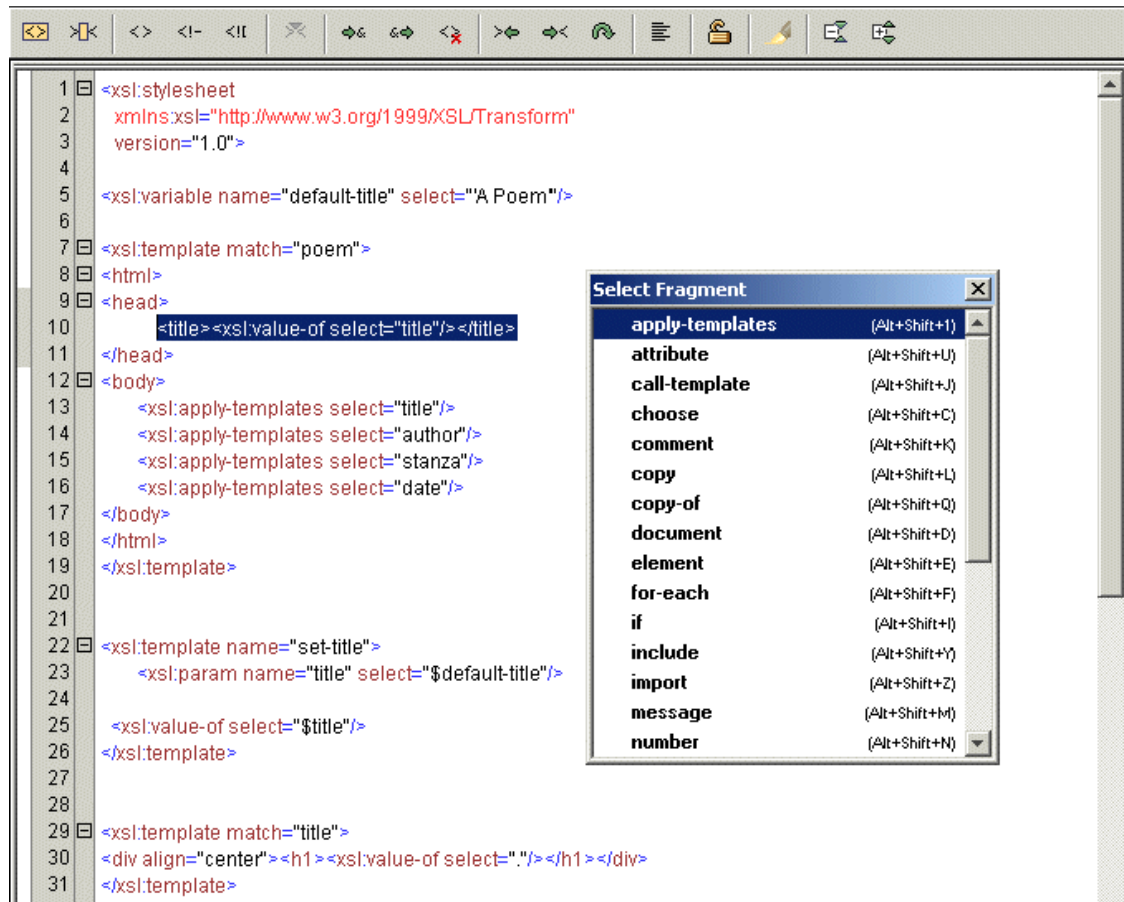
## Fragments

Fragments are an extension of Key Bindings, whereby it is possible to specify a shortcut that will result in some user-defined XML content being inserted into the editor at the current cursor position. For example a key sequence such as **Alt+Shift+C** in an XSLT document might insert the common `xsl:choose` combination: `<xsl:choose> <xsl:when test=""> </xsl:when> <xsl:otherwise> </xsl:otherwise> </xsl:choose>` Exchanger XML uses the concept of **Types** to manage configuration details relating to specific document formats. See the section later in this document for information on how to specify keyboard shortcuts in the Types definition for generating XML fragments. In this section, we will look at the built-in type for XSLT and how Fragments facilitate rapid editing.

Open the file `poem.xml` in the XSLT Fragments project. Check that the **Type** has been set correctly to **XML Stylesheet Language** by looking in the Document Properties window, or by selecting **Schema->Type Properties**.

Highlight the **title** element on line ten of `poem.xml` (using the mouse, or by choosing **Edit->XML->Select Element**, or by pressing **Ctrl+E**).

Now press **Ctrl+Shift+SPACE** or choose **Edit->Insert Fragment** to see the list of pre-defined fragments for the XSLT Type.

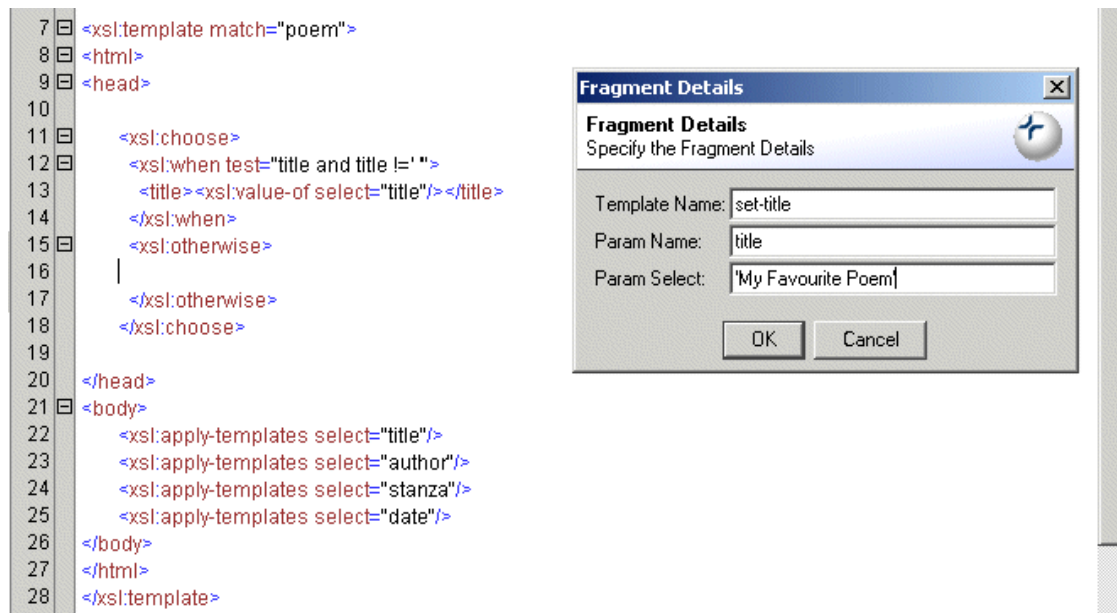


**Figure 4. Fragment List**

Navigate through the list using the up and down arrows, or type the first character of the Fragment name you wish to select. In this instance, we would like to surround the **title** element with an **xsl:choose** statement so select the **choose** entry and press Enter. (Alternatively use the shortcut **Alt+Shift+C** directly in the editor to immediately insert the fragment.)

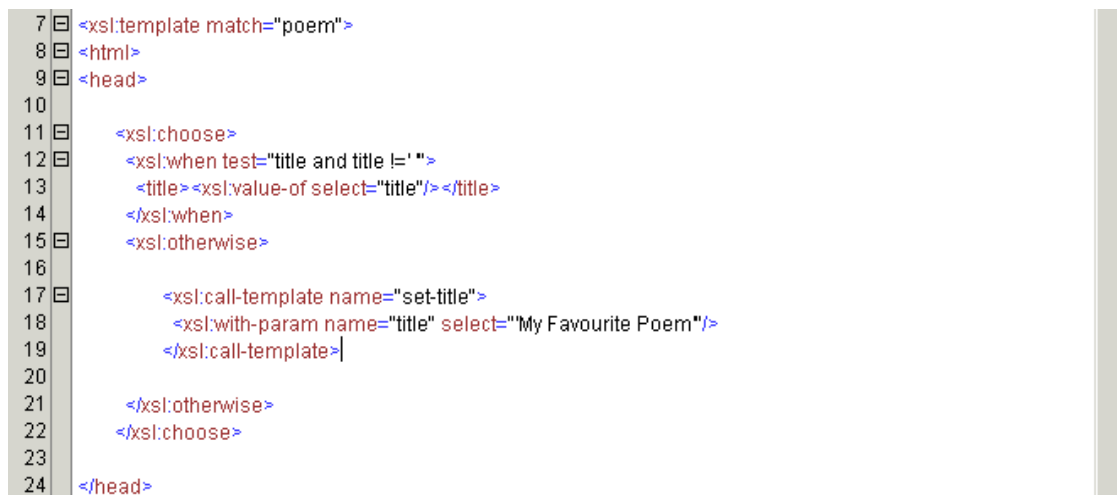
Notice how the the cursor is positioned in the **test** attribute of the **xsl:when** element and **title** element is now the content. Enter an expression for the test, for example **test="title and title != ""**.

Now move the cursor to inside the **xsl:otherwise** element and press **Alt+Shift+J** (or select the **call-template** fragment from the popup list using **Ctrl+Shift+SPACE**).



**Figure 5. Fragment Prompting**

The **call-template** fragment automatically prompts for the name of the template, and the name of the first parameter and its value. Enter appropriate values for the **set-title** named template in `poem.xsl` and press **OK**. The XML for the call to the template will be inserted at the cursor position, including the name and value of the parameter.



**Figure 6. Fragment Result**

To see the definitions for current fragments, select **Schema->Type Properties** and select the **Other** tab. To learn how to create fragments, see the **Types** section later in this manual. In the current release of Exchanger XML Editor, fragments are only available through the creation of **Types**.

## Editor Toolbar

The Editor toolbar is only visible in the Editor view. It consists of the following items:

- Select Element, Select Element Content
- Tag, Comment, CDATA
- Split Current Element
- Convert Characters to Entities, Convert Entities to Characters, Strip Tags
- Goto Start Tag, GoTo End Tag, Goto Line Number
- Format
- Lock, Double Lock, Unlock
- Highlight
- Expand, Collapse




**Figure 7. Editor Toolbar**





Use the **Select Element** button or select **Edit->XML->Select Element** to highlight the current element, including the start and end tag. By pressing the button repeatedly, the content of the current element's ancestors can be selected all the way up to the root element.





Use the **Select Element Content** button or select **Edit->XML->Select Element Content** to highlight the content of the current element.


 Use the **Tag** button or select **Edit->XML->Tag** (or use the key combination **Ctrl-T**) to easily surround an existing piece of content with an element of your choosing. Simply highlight the piece of content and press the Tag button. Enter the desired element name in the pop-up dialog box. To repeat the previous tagging operation, choose **Edit->XML->Repeat Last Tag** (or use the key combination **Ctrl+Sift+T**).


 Use the **Comment** button or select **Edit->XML->Comment** to comment out an existing piece of content. Simply highlight the piece of content and press the Comment button. (Remember: nested comments are not allowed in XML). Note that if the cursor is actually placed within a comment, this button can be used to remove the comment markup.


 Use the **CDATA** button or select **Edit->XML->CDATA**) to surround an existing piece of content in a CDATA section. Simply highlight the piece of content and press the CDATA button. (Remember: nested CDATA sections are not allowed in XML). Note that if the cursor is actually placed within a CDATA section, this button can be used to remove the CDATA specification.

 Use the **Split Current Element** button or select **Edit->XML->Split Element** to insert an end tag for the current open element and to insert a new start tag.

 Use the **Convert Characters to Entities** button (or select **Edit->XML->Convert Characters to Entities**) to change characters above a certain configurable range to the equivalent character reference or to a named entity reference. Special care must be taken when converting content with nested elements, comments, CDATA, etc. See the section on Special Characters for more details.

 Use the **Convert Entities to Characters** button (or select **Edit->XML->Convert Entities to Characters**) to change named entity references or character references to actual characters. See the section on Special Characters for more details.

 Use the **Strip Tags From Selection** button (or select **Edit->XML->Strip Tags**) to remove start and end tags from the current selection. Note that Comments, CDATA, PIs, etc will not be affected.

 Use the **Goto Start Tag** button or select **Edit->XML->Goto Start Tag** to select the start tag of the current element.

 Use the **Goto End Tag** button or select **Edit->XML->Goto End Tag** to select the end tag of the

current element.




Use the **Goto Line Number** button or select **Edit->Goto** to go to a particular line number. Enter the line number in the pop-up dialog and press **OK** (or the Enter key). To turn line numbering on or off in the Editor select **View->Editor Properties**, and set/reset the **Show LineNumber Margin** property.




Use the **Format** button or select **Edit->XML->Format** to pretty-print the XML content. To control the formatting options, select **File->Preferences** and choose the Format tab.



The **Unlocked** button indicates that all content can be edited. Click it once or select **Edit->XML->Lock**. The button changes to Lock (  ) and indicates that all element names in start and end tags will no longer be editable. (Only attribute values and text content can now be modified).



Click the Lock button once or select **Edit->XML->Double Lock**. The button changes to Double Lock (  ) and indicates that attribute values will no longer be editable, effectively locking all the markup and only allowing changes to text content. Note that while the Lock or Double Lock buttons are active, there will be no tag prompting and any attempt to create start or end tags will result in automatic entity replacement (for example, if you copy and paste tags).



Use the **Highlight** button or select **Edit->XML->Highlight** to highlight elements and attributes from different namespaces.



Use the **Collapse All** button to completely collapse the current document when the Content Folding Margin is active.



Use the **Expand All** button to fully expand any elements that are minimized when using Content Folding.

## Margins

Four different margins are available in Exchanger XML Editor to improve navigation and overall editing efficiency. The Line Number, Bookmarks and Content Folding margins appear to the left of the editing window, while the Overview margin is to the right. The visibility of each of the margins can be controlled using the **View->Editor Properties...** menu item, allowing the user to optimize the screen real estate as required.

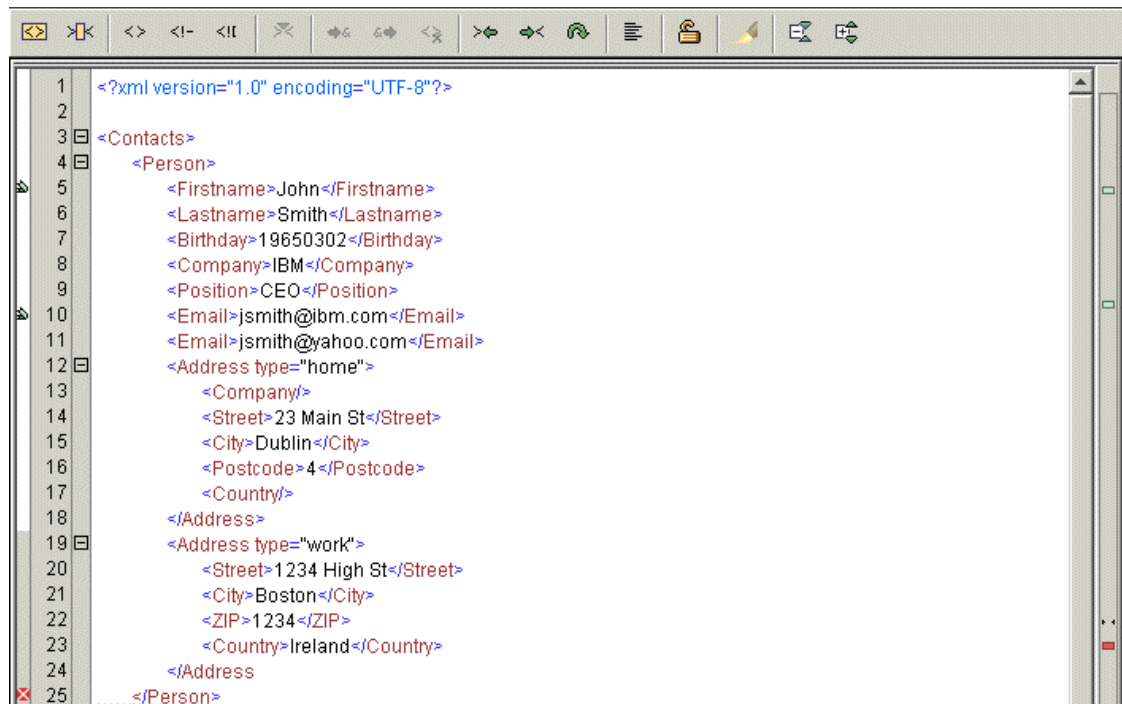


Figure 8. Margins

## Content Folding

Content folding greatly improves the usability of the Editor, particularly when dealing with large, complex documents and therefore the Content Folding margin is visible by default. To collapse or expand an entire document in the Editor view, use the CollapseAll and ExpandAll buttons on the Editor Toolbar. To collapse or expand an individual element to hide or show its children, click on the appropriate "+" or "-" sign in the Content Folding margin (or with the cursor on the same line as the start tag, use the key sequence **Ctrl+ENTER**). To completely collapse or expand an element, hiding or showing all the descendant nodes, hold down the **Shift** key and click on the "+" or "-" sign in the Content Folding margin (or with the cursor on the same line as the start tag, use the key sequence **Ctrl+Shift+ENTER**). Note that folding only works for elements that span more than 2 lines, and that the start tag must be the first non-whitespace content on the line. Content folding can be particularly useful for establishing a "Table of Contents" style approach to editing large documents. For example, using DocBook, simply enter the title on the same line as the start tag for a section, e.g. `<section><title>Chapter 1</title></section>` and then use the section titles in association with content folding for easy navigating through the document.

## Bookmarks

Bookmarks provide another means of navigation, not just within a document but also across multiple documents. To create a bookmark, ensure that the Annotation Margin is visible using **View->Editor Properties...->Show Annotation Margin** and then simply double-click in the margin at the appropriate place. A green icon will be placed in the margin, and in the Bookmarks tab in the panel at the bottom of the screen, a new entry will be created giving the filename, line number and content of the bookmark. Double-clicking on the entry in the Bookmarks tab will automatically scroll the editor window to the corresponding location in the document.

Bookmarks are also supported in the menus and with shortcuts. The key combination **Ctrl+B** or the menu item **Edit->Toggle Bookmark** will create or remove a bookmark on the current line, as appropriate. To goto a bookmark when the Bookmarks tab isn't visible, use the key combination **Ctrl+Shift+B** or the menu item **Edit->Select Bookmark...** to display a dialog containing all the bookmarks for the current document.

Green Bookmark indicators also appear in the Overview Margin to the right of the editing window, if it is currently visible. The overview margin provides an indication of the relative positions of bookmarks in the entire document. Hovering over any green icon in the overview margin will display details of the bookmark in a tool-tip, while single-clicking on that icon will scroll the editor to the appropriate position.

## Line Numbering Margin

Line numbers are displayed in their own margin to the left of the editing window. The margin can be rapidly turned on or off using a menu item **View->Editor Properties...->Show Linenumber Margin** or better still, using a customized shortcut as described earlier, as opposed to using the Preferences dialog. Note that the visibility of the line numbering margin, as well as the other margins, is common to all open windows.

## Overview Margin

To improve navigation, a new Overview Margin has been added in this release and its visibility can be controlled using the menu item **View->Editor Properties...->Show Linenumber Margin**. As well as containing bookmark indicators as mentioned earlier, the Overview margin also contains an indicator of the current cursor position (two small arrows), and red error locators for well-formedness or validation errors. Single-click on any of the indicators to move to the corresponding position in the editor.

## Editor Properties

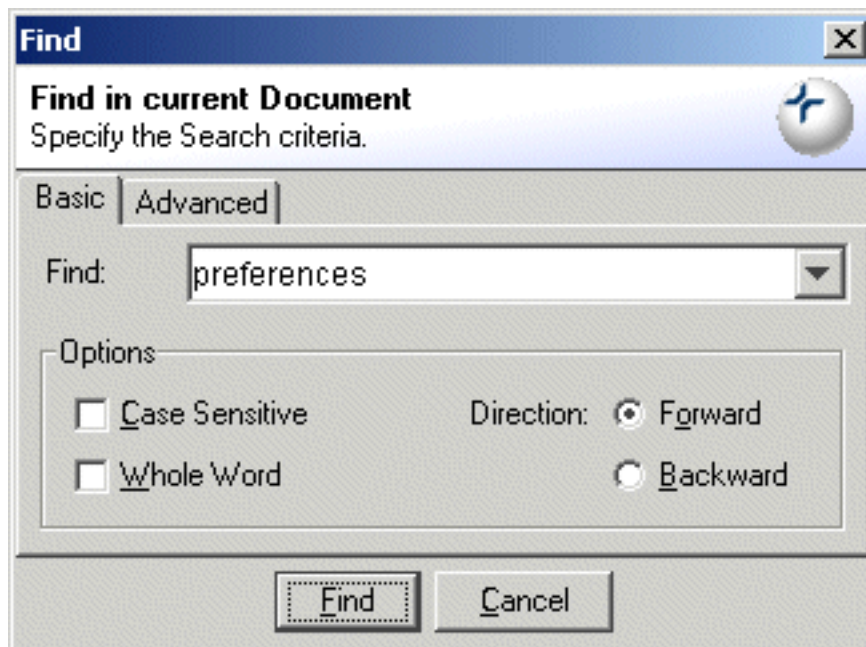
Frequently changed settings have been moved from the Preferences dialog onto the **View->Editor Properties** sub-menus so that they are easier to access and to allow shortcuts to be created. As mentioned previously, the four margins for Annotations, Line Numbering, Content Folding, and Overview can be easily turned on and off, particularly if appropriate keyboard shortcuts have been added. Tag completion (also known as tag prompting or intellisense) can be turned off as can automatic end tag completion. The Smart Indentation feature attempts to position start/end tags and text content neatly in relation to parent elements and is turned on by default. Syntax Error Highlighting, whereby the editor attempts to dynamically indicate potential well-formedness errors, can be turned off using the **View->Editor Properties->Error Highlighting** menu item. Soft wrapping can be enabled or disabled using **View->Editor Properties->Soft Wrapping**

## Find and Replace

Two separate mechanisms are used to support Basic and Advanced Find functionality. Basic Find simply allows searches on text across the entire active document. The Advanced Find dialog allows an XPath filter to be used to narrow down the search area, and supports Regular Expressions. In Advanced Replace, Regular Expression parameters can also be used in the Replace field, making it much more programmable.

### Basic Find

The Basic Find dialog allows searching for text in a forwards or reverse direction from the current cursor position. To start a search, press **Ctrl+F** or choose **Edit->Find**. To repeat the current search, press **F3** or choose **Edit->Find Next...** Once the end of the file is reached, Basic Find will automatically wrap and start again at the beginning of the file.



**Figure 9. Basic Find**

## Advanced Find

An XPath filter can be used in Advanced Find to narrow down the search area. If the XPath returns one or more elements, then the search will be restricted to all the descendant nodes of the elements returned. If one or more attributes are returned, then the corresponding attribute values will be searched.

Advanced Find supports the use of Regular Expressions in the search string. For example, with the Regular Expression option turned on, the search string `<. +?>` will find all occurrences of start and end tags (that are not split across multiple lines) in the current document. Note that Regular Expressions can be combined with XPath filters to enhance the Find functionality.

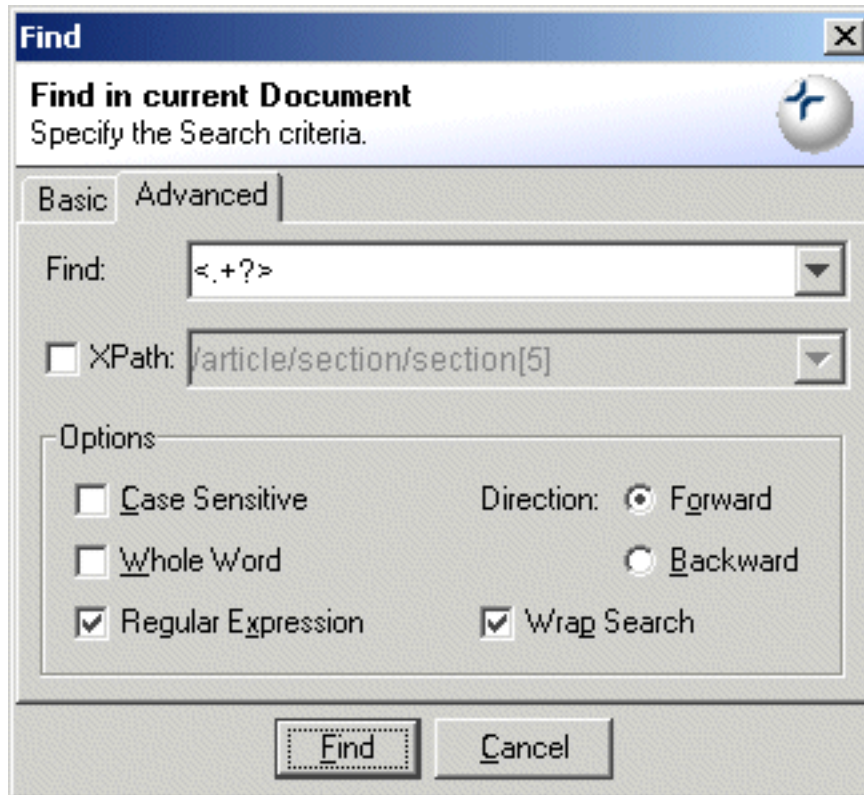


Figure 10. Advanced Find

## Advanced Replace

In Advanced Replace, XPath and Regular Expressions can be used together to perform complicated edits to the current document. For example, to change a tag named **Lastname** to **Surname**, but only inside **Person** nodes, use a Find expression of `<Lastname>([^\<]+)</Lastname>` and a Replace expression of `<Surname>$1</Surname>`. Set the XPath Filter to `//Person`, ensure that the Regular Expression option is turned on and press Replace All to change all the Lastname tags to Surname.

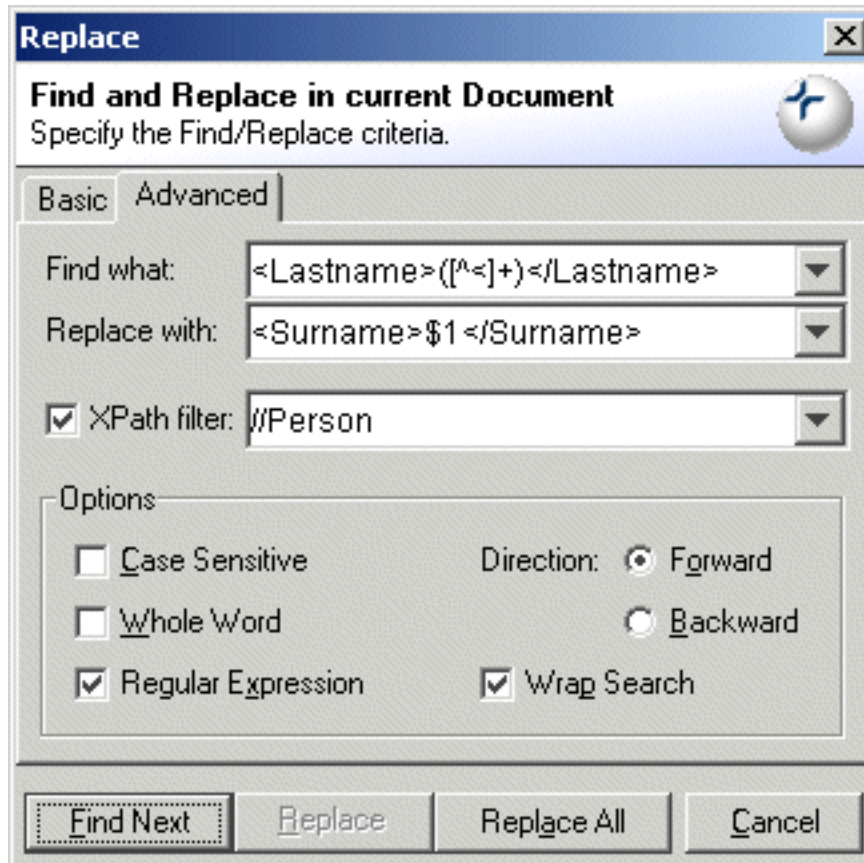


Figure 11. Advanced Replace

## Find in Files...

Exchanger XML supports the ability to search files one or more directories. Choose **Edit->Find in Files...** and enter the search criteria.

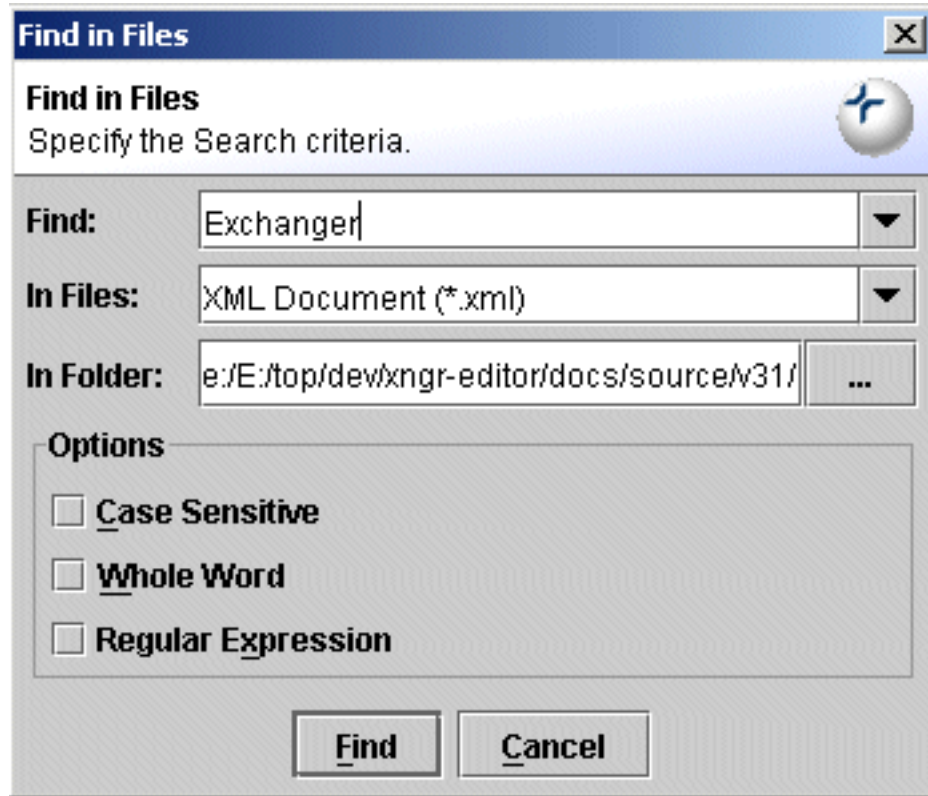


Figure 12. Find in Files...

To choose multiple directories for the search, use the **Ctrl** or **Shift** keys when highlighting in the Directory chooser. If any files match the search criteria, the results will be displayed at the bottom of the screen in the **Find in Files** tab. Double-clicking on a result opens the file in the editor and automatically scrolls to the hit location.

## Drag and Drop

Exchanger XML supports the ability to drag and drop content in the Editor window. Simply highlight the text (perhaps using **Edit->Select Element**) and then click in the highlighted area and with the mouse held down, drag the cursor to the desired insertion point. To copy content rather than cutting and pasting, use **Ctrl+Drag** after highlighting the area.

## Indentation

To indent a block of content, simply highlight the desired area and press the **TAB** key (or select **Edit->Indent**). To unindent (or exdent), use **Shift+TAB** (or select **Edit->Unindent**).

## Templates

The Exchanger XML Editor has built-in support for templates and also allows the user to create templates to simplify the editing process.

To try out a template, choose **File->New**, click on **From Template** and select XHTML 1.0 Transitional in the dialog. The new document will be displayed in a new window.

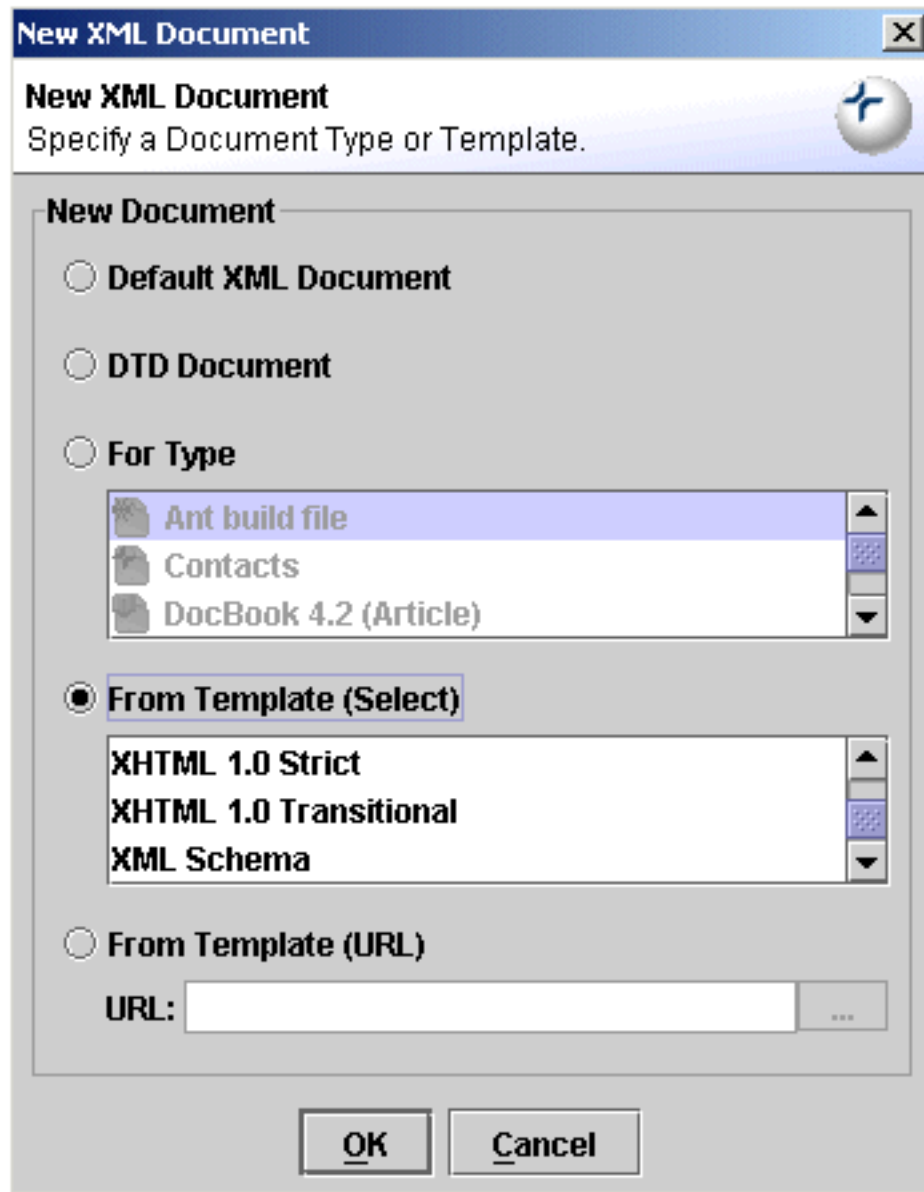


Figure 13. New document from Template

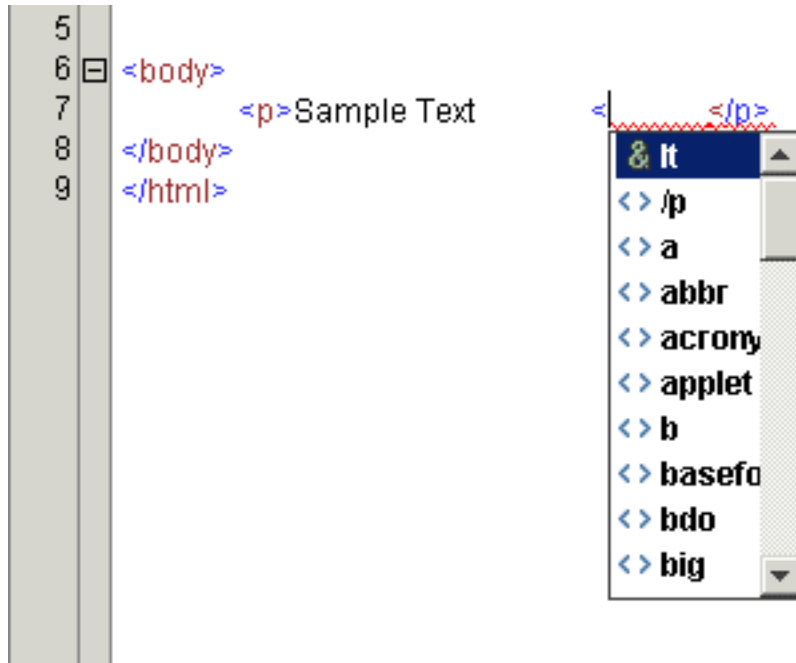
To create a template, use the editor to create the desired content (or open an existing document to use as

the base) and select **File->Save As Template...** Enter a name for the template and a location where it should be stored (perhaps a sub-directory of Exchanger's Templates directory). Now this template will be available when using **File->New**. Use **File->Manage Templates** to modify a template definition, or to Import or Export templates.

## Tag Prompting and End Tag Completion

Create a new XHTML document using **File->New** and using **From Template** select **XHTML 1.0 Transitional**. A basic XHTML document will be displayed consisting of a simple head containing a title and a body containing a paragraph with some text.

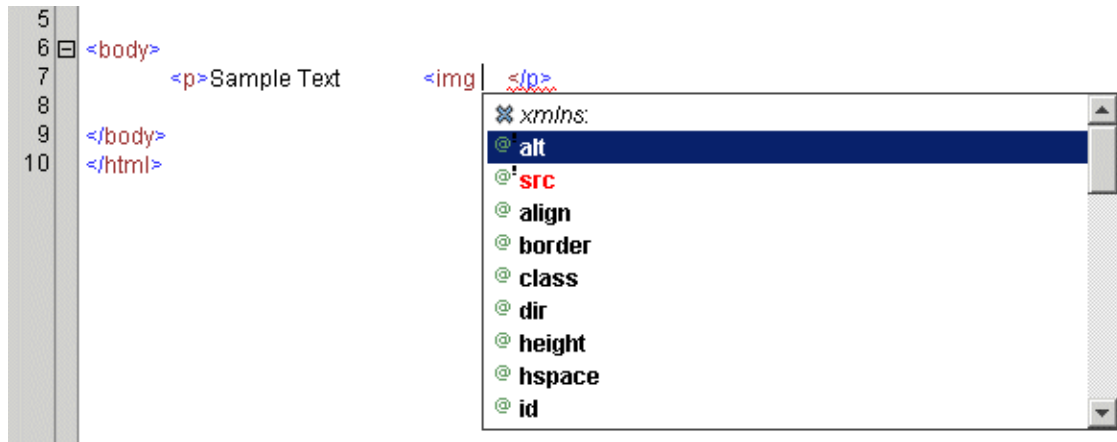
Position the cursor in the `<p>` element, type the character `<` and a popup window appears with a list of valid element names. Type the character `i` and the number of available names in the popup shrinks to those starting with the letter `i`.



**Figure 14. Element Prompting**

Use the Up Arrow and Down Arrow keys to move through the list - press the Enter key when the element name **img** is highlighted. The text in the Editor view will now contain **<img>**.

Enter a space character and the attribute name list will popup - required attributes will be displayed at the top of the list and highlighted in red with an icon containing an exclamation mark.



**Figure 15. Attribute Prompting**


Choose **src** and press enter. The text in the Editor view will now contain `<img src=""` and the cursor will move to facilitate entry of the attribute value.


Enter a value for the attribute, for example, `http://www.exchangerxml.com/Cladonia.gif`, and then move to the end of the line. Enter a space and the attribute name list will reappear. Choose **alt**, press Enter and type in a value for the **alt** attribute, for example, **Cladonia Logo**.


Now, move to the end of the line and enter a close tag character `>` and the corresponding end tag `</img>` will automatically be added. Automatic generation of end tags can be disabled using the **End Tag Completion** checkbox on the Views tab in the File->Preferences dialog.

To dismiss the popup window containing a tag prompt, press the **Esc** key. To recall the popup after it has been dismissed, press **Ctrl-Space**. To permanently disable tag prompting, change the setting in the Preferences dialog.

To see if the modified document is well-formed, select **XML->Check Well-formedness** or press **F5** or press the **Check for well-formedness** button (  ). Check the Error tab in the Output Window at

the bottom of the screen to see any errors reported. If the document is well-formed, the button indicates this by removing the asterisk (  ).

To see if the modified document is valid as determined by the XHTML Transitional DTD, select **XML->Validate** or press **F7** or press the **Validate** button (  ). Check the Error tab in the Output

Window at the bottom of the screen to see any errors reported. If the document is valid, the button indicates this by removing the asterisk (  ).

## Attribute Value Prompting

Support has been added to enhance tag prompting for certain document formats. When editing an XML Schema, the editor will automatically prompt with appropriate values for attributes such as **ref**, **base** and **type** and for RelaxNG, the **ref** and **type** will also be suitably handled. In XSLT, typing a \$ character will prompt with all the known variable names in the current document while the **call-template** element will display values for the **name** attribute.

## Namespace Prompting

For documents that use namespace prefixes, tag prompting changes slightly so that the namespace prefixes appear at the top of the popup list. For example, when writing XSLT scripts, the majority of elements will start with an **xsl:** prefix, so normal prompting will be less effective as you will have to type the prefix before being able to choose from the prompted elements. To counteract this, tag prompting will now place the prefixes themselves at the top of the list, so that they can easily be inserted in the document. For example, in an XSL file, pressing < will result in the <**xsl:** prefix appearing at the top of the popup. Press **Enter** to insert the characters <**xsl:** in the document and to narrow the choice of elements in the popup to those from the XSL namespace.

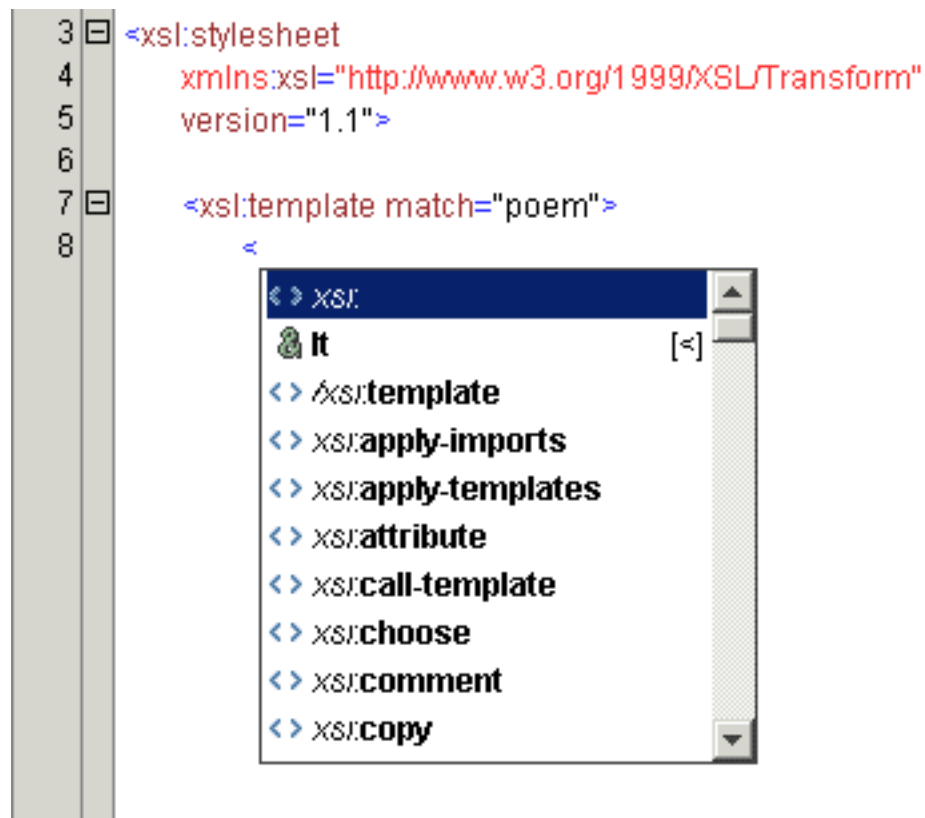


Figure 16. Namespace Prompting

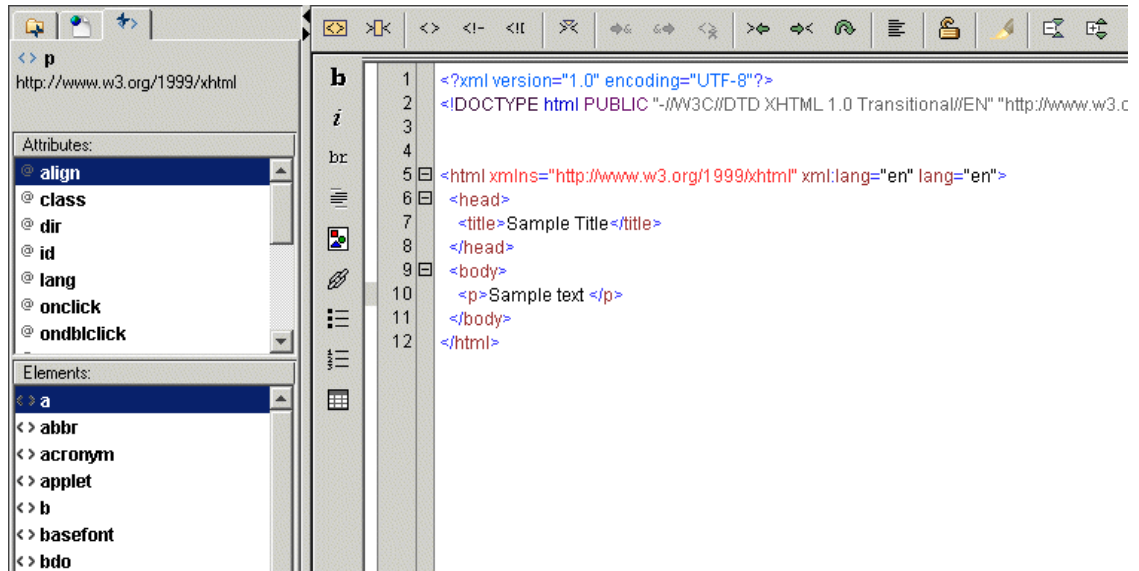
## Syntax Error Highlighting

As you type, the editor can attempt to highlight any syntax errors that may have occurred using a red squiggle under the offending content. If the error is temporary and quickly rectified, the error

highlighting should disappear. Note that the occurrence of this highlighting does not guarantee that an actual error is present and should only be used as a guide - to make sure, perform a check for well-formedness or validation. The appearance of syntax error highlighting is controlled using the menu item **View->Editor Properties...->Show Syntax Errors** and is turned on by default.

## Element and Attribute Helpers

An alternative way to create XML content is to use the element and attribute helpers that can be accessed by clicking on the third (Helpers) tab on the left hand side. (The other two tabs are for Projects and Tree Navigator.) Position the cursor inside the <p> element and create an anchor element by double-clicking on **a** in the **Elements:** section in the Helpers tab on the left hand side. The <a> element is added to the document and the cursor is automatically positioned within the element.



**Figure 17. Element Helpers**

To see how attribute helpers work, double-click **href** in the attribute helper. The cursor is positioned in the attribute value, so enter the text **http://www.exchangerxml.com** Move the cursor to the content of the <a> element and add the text **Exchanger XML Editor**

To view the newly created XHTML file, simply choose **XML->Start Browser** (or just press **F9** and the file will be displayed in your default browser.

## Tag Prompting and Instance Validation with DTDs

In the **cXML DTD** project, open the file `OrderRequest.xml`. Choose **XML->Set Properties...** and in the **Tag Completion** section of the dialog, set the Grammar to **DTD** and the **Location** to `projects\cXML DTD\dtd\cXML.dtd`. Click anywhere in the content of the open `OrderRequest` file, enter the `<` character (or use the Ctrl-T short-cut) and the appropriate tags for that location will be automatically prompted. In this example, the DTD location is stored in the sample document so to validate the file, simply use the **Validate** button or choose **XML->Validate** or press **F7**.

To explicitly set the DTD location for validating a document, choose **XML->Set Properties...** and in the **Validation** section of the dialog set the Grammar type to DTD and set the appropriate location.

## Tag Prompting and Instance Validation with RelaxNG

In the **VoiceXML RelaxNG** project, open the file `voiceform.xml`. Choose **XML->Set Properties...** and in the **Tag Completion** section of the dialog, set the Grammar to RelaxNG and the location to `projects\VoiceXML RelaxNG\relax\VoiceXML10.full.rng`. Click anywhere in the content of the open `VoiceXML` file, enter the `<` character (or use the Ctrl-T short-cut) and the appropriate tags for that location will be automatically prompted.

Because there is no standard way to reference a RelaxNG grammar from within an instance, it is necessary to explicitly set up the grammar for validation. Choose **XML->Set Properties...**, set the Grammar type to RelaxNG, set the appropriate location for the grammar and then press the **Validate** button or choose **XML->Validate** or press **F7**.

## Tag Prompting and Instance Validation with XML Schema

In the **XBRL XML Schema** project, open the file `sample_instance.xml`. Choose **XML->Set Properties...** and in the **Tag Completion** section of the dialog, set the Grammar to XSD and the location to `projects\XBRL XML Schema\schema\sample_taxonomy.xsd`. Click anywhere in the content of the open `XBRL` file, enter the `<` character (or use the Ctrl-T short-cut) and the appropriate tags for that location will be automatically prompted.

In this example, the schema location is stored in the sample document so to validate the file, simply use the **Validate** button or choose **XML->Validate** or press **F7**.

To explicitly set the schema location for validating a document, choose **XML->Set Properties...** and in the **Validation** section of the dialog set the Grammar type to XML Schema and enter the appropriate location.)

## Multiple Tag Completion

It is possible to specify more than one Tag Completion grammar - this is particularly handy for creating documents that contain a number for different formats, for example, XSLT and XHTML together, or XHTML and XForms, or DocBook and MathML. Simply add extra grammars in the **XML->Set Properties...** dialog and the tag prompting will comprise of appropriate names from all the grammars specified. Note that the grammars don't have to be of the same type - XML Schemas can be mixed with DTDs or RelaxNG grammars to give combined tag prompting.

Note: using **XML->Set Properties...** only affects the current document during the current editing session. To set up Tag Completion and Validation grammars that can be reused across multiple document instances and editing sessions, please see the section later on creating **Types**.

## Encodings and the XML Declaration

Exchanger XML Editor supports multiple encodings, including but not limited to UTF-8, UTF-16, US-ASCII, ISO-8859-1, ISO-8859-2, ISO-8859-3, ISO-8859-4, ISO-8859-5, ISO-8859-6, ISO-8859-7, ISO-8859-8, ISO-8859-9, ISO-8859-13, ISO-8859-15, 2022-JP, Shift-JIS, EUC-JP, GBK, Big5, ISO-2022-KR, GB2312. To set the encoding for a new file or to change the encoding for an existing file, choose **XML->Set XML Declaration...** and set the appropriate encoding (and version and standalone features if needed). The file will now be saved using the chosen encoding on exit. Note that it is also possible to "manually" add or modify the XML Declaration directly while editing the content of a document and the editor will respect the settings when saving the file.

Some example files with different encodings are available in the **International** project - note that if you open these files and are seeing rectangular blocks in the place of the actual characters, you will need to change your font setting (via **File->Preferences** in the Text tab). For example, the Gulim font, if available, is convenient for viewing the Chinese and Japanese samples. All the samples are XHTML documents and can also be opened in your default browser using **Tools->Start Browser**.

## Document Type Declaration

A document type declaration can be modified or created using **XML->Set Doctype Declaration**. In the dialog, enter the name of the root element, the PUBLIC ID if required, and the SYSTEM ID for the location of the DTD to be used. (Note that if the Type is set to INTERNAL, any existing PUBLIC and/or SYSTEM settings will be deleted.) Again, the Doctype Declaration can be edited "manually" in the editor without recourse to the utility dialog and changes will be recognised the next time the document is validated.

## Schema Location

A schema location can be added or modified by choosing **XML->Set Schema Location**. (If there are multiple namespace locations present in the document, the dialog will only allow you to modify the first one - this restriction will be removed in a future release of Exchanger XML Editor.) In the dialog, choose between **schemaLocation** and **noNamespaceSchemaLocation** and enter the Namespace, if needed, and the location of the schema. A new attribute for the schema location (and potentially a namespace declaration) will be added to the open document, if one doesn't already exist and will come into effect on the next validation. Again, it is possible to manually edit the attribute without recourse to the utility dialog.

## XInclude

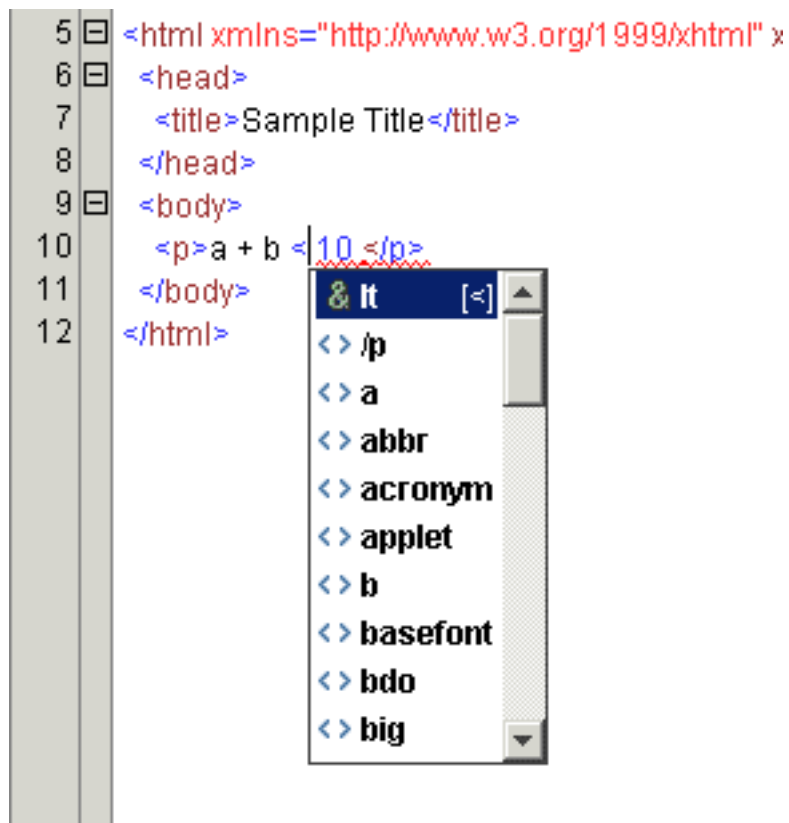
Exchanger XML Editor V2 provides support for XIncludes, as implemented by the Xerces parser. In the XInclude project, open the file `poem.xml` and see how it references three separate files using the `<xi:include href=" ... ">` construct. Choose **XML->Resolve XIncludes...** and the three

referenced files will be automatically included in the existing document. (Remember to use **Save As...** instead of **Save** if you want to retain the original file.)

## Special Characters and Entities

### Entering Special Characters

Entering less-than and greater-than characters as entities in content is very simple. For less-than, simply type the < character and when the popup window appears, press **Enter**.



**Figure 18. Entering < in content**

Similarly for >, type the character and press **Enter** when the popup appears. If you don't want to use the entity replacement, press the Esc button (or just keep typing) to dismiss the popup and the > is left in the content.

To enter ampersand, single quote or double quote characters as entities in content, simply type the character and press **Enter** when the popup appears to create the entity. Again, if you prefer not to use the entity replacement, keep typing or press **Esc**.

## Entering named entities in content

To use named entities for special characters, for example &agrave; for à, enter the & character and the entity popup appears. Now type the character a and all the known entities beginning with the letter a will appear. Now type the character g and the popup shrinks to display only two options - use the down arrow to choose &agrave; and press **Enter**.

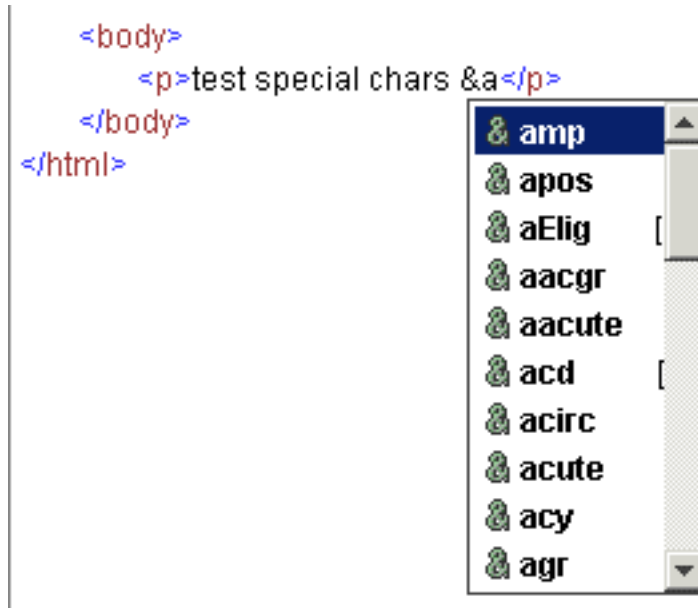


Figure 19. Entering named entities in content

## Insert Special Character

An alternative mechanism is available for entering special characters where you may not know the name of the appropriate entity. Choose **Edit->Insert Special Character** (or **Ctrl-I**) and scroll down in the popup window until the agrave character is visible. Click on the character, select whether you want to insert a named entity reference, a character reference or the character itself and press **Insert**.

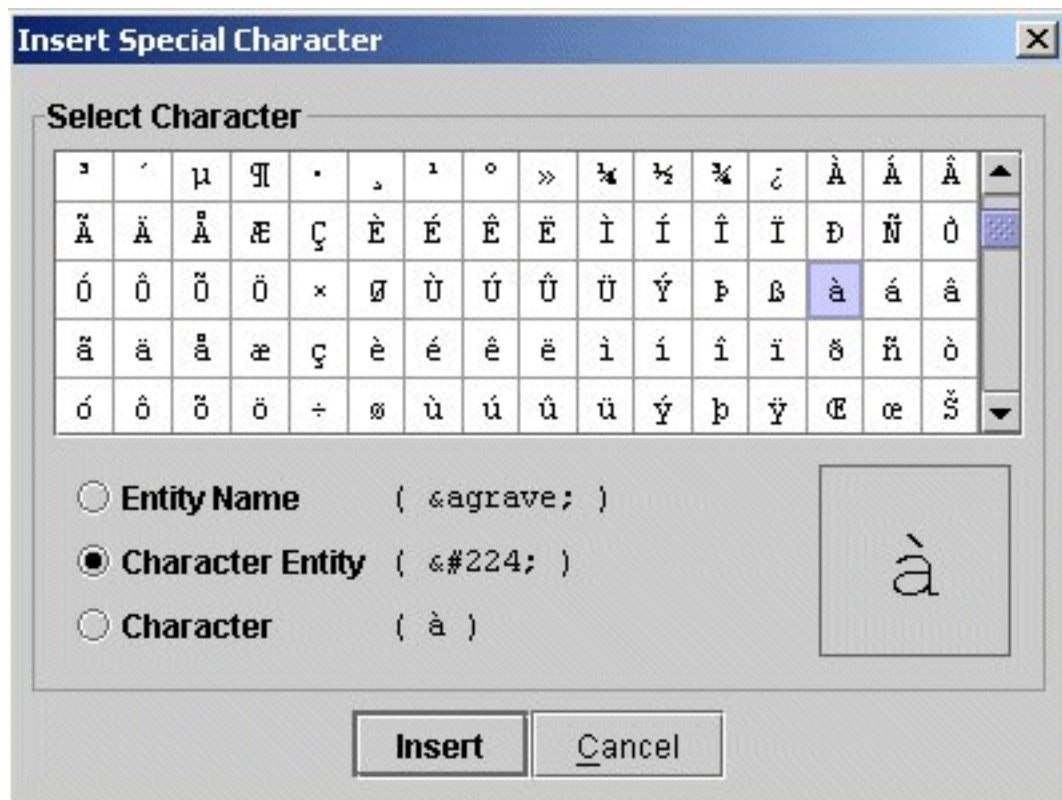

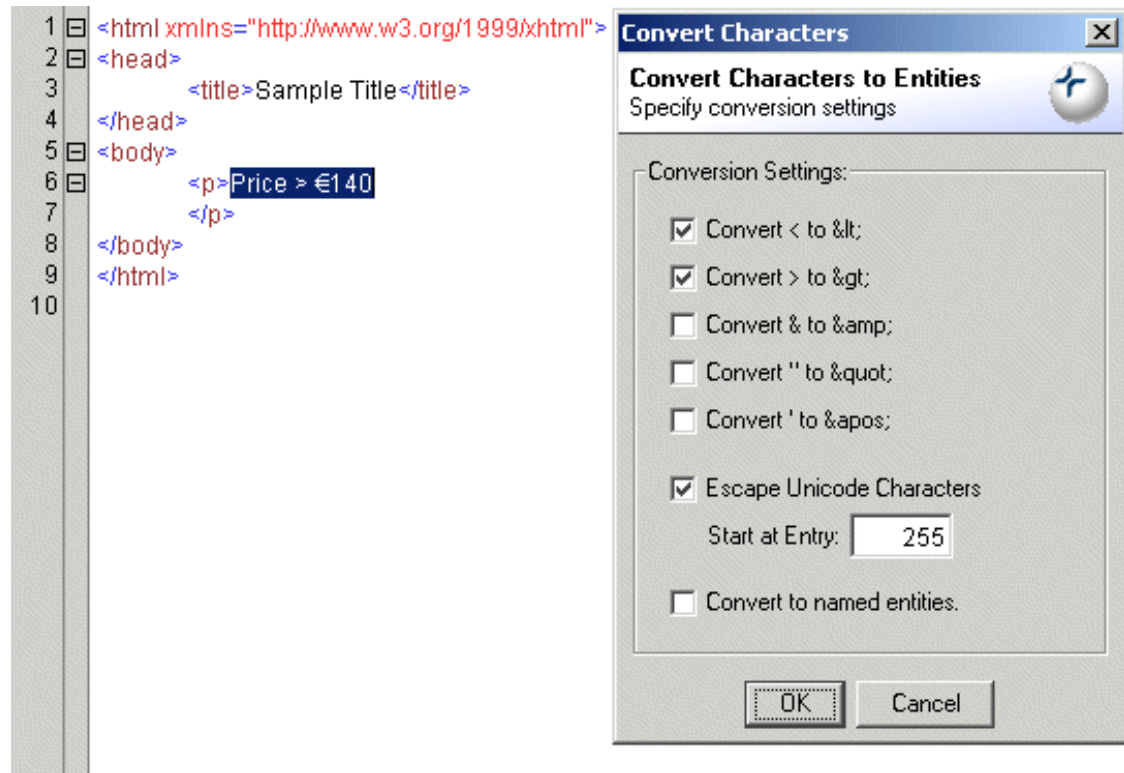


Figure 20. Inserting Special Characters

## Convert Characters to Entities

To convert characters to entities or character references, select the desired content and use the **Convert Characters to Entities** button (  ).




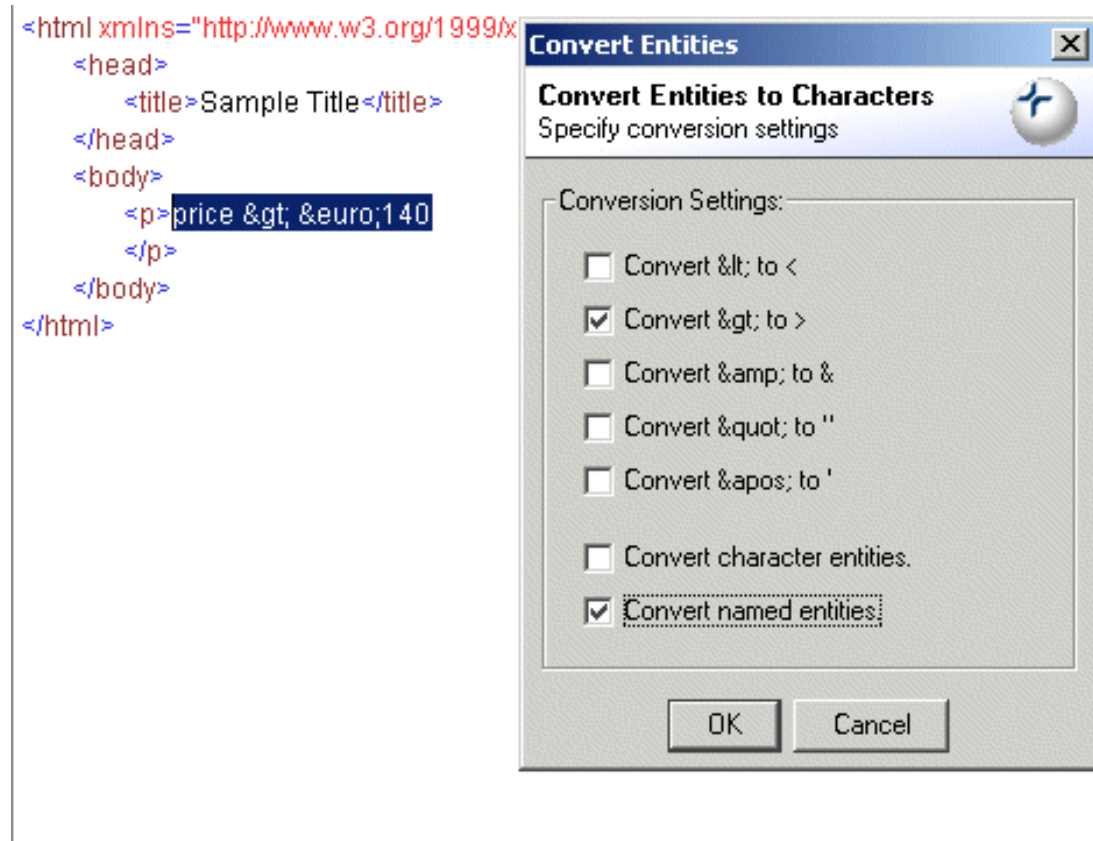
**Figure 21. Convert Characters to Entities**

In the example above, the selected text `price > €140` will be converted to `price &gt; &#8364;140` (The `>` character is converted to `&gt;` because we have explicitly chosen to convert it in the popup.) Automatically converting `<`, `>` and `&` can be very handy, but care must be taken when there are nested elements, entities, comments, PIs, CDATA sections, etc in the selected content as these will be escaped as well which is probably not what the user intended.

By default, characters above 255 will be converted to the equivalent character reference. If you want to convert these characters to named entities instead, select the **Convert to named entities** option in the popup. The selected text `price > €140` will be converted to `price &gt; &euro;140` The **Convert to named entities** option will override the **Escape Unicode characters** option when named entities are available.

## Convert Entities to Characters

To convert named entities and/or character references to characters, select the desired content and use the **Convert Entities to Characters** button (  ).



**Figure 22. Convert Entities to Characters**

In the example above, the selected text `price &gt; &euro;140` will be converted to `price > €140` (The `&gt;` entity is converted to `>` because we have explicitly chosen to convert it in the popup.) Automatically converting `&lt;`, `&gt;`, and `&amp;` can easily result in invalid XML so care must be taken when doing conversions.

## XML Refactoring

While XSLT can be used to specify arbitrary transformations, there are a number of common editing procedures for which writing an XSLT script can be overkill. Exchanger XML provides a number of built-in features to handle common XML Refactoring tasks.

### Strip Text Content

When performing language translations of XML files, it is often convenient to maintain the structure of the original document while removing the text. Select **XML->Strip Text...** and set the desired parameters. By default, the text content in all elements in the current document will be removed, but this can be restricted to a sub-set of the document using an XPath filter. Attribute values can also be stripped, as can as elements in mixed content such as `<B>` or `<i>` which may be used for styling rather than structure. When an XPath filter is used to specify an element, any text that occurs anywhere within the element including in descendants is removed.

### Namespace Refactoring

Exchanger XML Editor contains a number of functions for managing namespace usage in the **XML->Namespaces** menu item including removing unused namespace declarations, moving all declarations to the root element, and moving declarations to where they are first used in the document. Of particular use is the ability to rename all occurrences of a prefix, for example changing **xsd:** to **xs:** throughout an XML Schema. Open a document that uses namespaces and then select **XML->Namespaces->Rename a Namespace Prefix...** Choose the desired namespace from the list and press edit. Now enter the new prefix and decide whether to modify the original document or create a new one.

### Changing attributes to elements

Open the file `input/attributes.xml` in the XML Refactoring project. Notice how the contact details are stored as attributes on the Person element. To convert these attributes to sub-elements, select **XML->Nodes->Convert Nodes...** and in the XPath filter field, enter `/Contacts/Person/@*` Choose a node type of **Element Node** and press **OK** to create a new document where the attribute names have been used to create sub-elements with content equal to the attribute values. (Press the Format button to make the output more obvious.)

### Changing elements to attributes

Open the file `input/elements.xml` in the XML Refactoring project. Notice how the contact details are stored as sub-elements in the Person element. To convert the sub-elements to attributes on the Person element, select **XML->Nodes->Convert Nodes...** and in the XPath filter field, enter `/Contacts/Person/*` Choose a node type of **Attribute Node** and press **OK** to create a new document where the sub-element names have been used to create attributes on the Person element with values equal to the sub-element content. (Press the Format button to make the output more obvious.)

## Sorting elements based on attribute values

Open the file `input/attributes.xml` in the XML Refactoring project. To sort the Person elements based on the Lastname attribute, select **XML->Nodes->Sort Nodes...** and in the XPath filter field, enter `/Contacts/Person` and in the Sort By field, enter `@Lastname`. Choose Sort Ascending and Output to New Document and press OK. Notice how the order of the person elements has changed, based on the Lastname attribute.

## Sorting elements based on sub-element content

Open the file `input/elements.xml` in the XML Refactoring project. To sort the Person elements based on the content of the Lastname child element, select **XML->Nodes->Sort Nodes...** and in the XPath filter field, enter `/Contacts/Person` and in the Sort By field, enter `./Lastname`. Choose Sort Ascending and Output to New Document and press OK. Notice how the order of the person elements has changed, based on the content of the Lastname child element.

## Changing element and attribute names

Use the **XML->Nodes->Rename Nodes...** functionality to change element and attribute names, using an XPath filter to narrow the impact of the changes to a subset of the nodes in the document.

## Changing element and attribute values

Use the **XML->Nodes->Set Node Value...** functionality to change element or attribute values, using an XPath filter to narrow the impact of the changes to a subset of the nodes in the document.

## Removing elements and attributes

Use the **XML->Nodes->Remove Node** functionality to delete elements (including all descendants) or attributes, using an XPath filter to narrow the impact of the changes to a subset of the nodes in the document.

## Inserting elements, attributes, comments, PIs, etc.

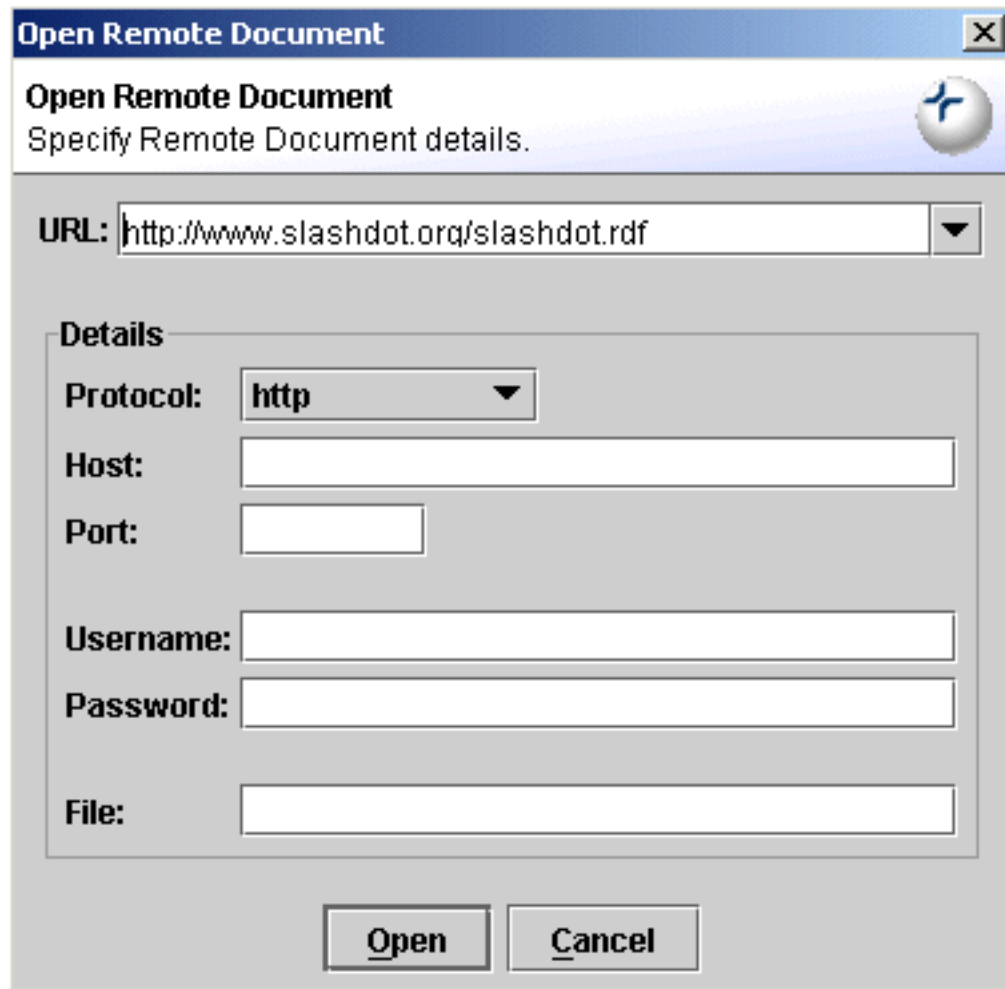
Arbitrary nodes including child elements, attributes, comments, PIs can be added to elements specified by an XPath filter using **XML->Nodes->Add Node...**. Values can be set for element content, attribute values, comment content, CDATA content and PI targets using the New Node Value field. Child elements will be appended as the last child to the specified element.

## Change Case

The functionality available on the **XML->Change Case** menu items allow elements and attributes to be Capitalized, DeCapitalized, Uppercased and Lowercased, with the range being controlled by an XPath filter.

## WebDAV, FTP, HTTP and Remote Files

### HTTP and HTTPS



**Figure 23. Open Remote file via HTTP**

To open a remote file using HTTP (or HTTPS), choose **File->Open Remote** and in the URL field at the top of the dialog, enter `http://www.slashdot.org/slashdot.rdf` for example - this should open an RDF file describing the contents of the slashdot site. Press the **Format** button or choose **Edit->Format** (or press **F4**) to pretty-print the returned XML. Choose **File->Save As** or right-click in the window or on the file tab and choose **Save As...** to save the returned content.

Alternatively, enter the Host and File separately in the Details section of the dialog (along with Port Number if required, and Username and Password if authentication is necessary) and the complete URL will be built automatically from the constituent parts.

Depending on your environment, it may be necessary to enter proxy setting in the Preferences window to access remote documents. Note: if opening the remote file fails (for example, if you are not connected to the internet) then it may not be possible to re-open the remote file until you close down the Exchanger application and restart - this is a known limitation in Java).

## WebDAV

To open a remote file using WebDAV over HTTP (or HTTPS), choose **File->Open Remote...** and enter the URL directly or enter the constituent parts just like a regular HTTP/HTTPS request as described in the preceding section with the protocol set to WebDAV/HTTP(S).

To save an open file to a WebDAV repository, choose **File->Save As Remote...** and enter the URL directly or enter the constituent parts in the Details section of the dialog section with the protocol set to WebDAV/HTTP(S).

## FTP

To open a remote file using FTP, choose **File->Open Remote...** and enter the URL directly or enter the constituent parts in the details section of the dialog with the protocol set to FTP.

To save an open file to a remote location using FTP, choose **File->Save As Remote...** and enter the URL directly or enter the constituent parts in the Details section of the dialog section with the protocol set to FTP.