

# Introduction to Topologi Professional Edition

© 2004, 2005 Topologi Pty. Ltd.

# Contents

## **Overview**

- Diagram of Tools

## **Media Browser and Reports**

- Browse Files
- See Metadata
- Check Images
- Check Markup
- Tree-Edit XML
- Report Terms
- Report Usage
- Find All Paths

## **Markup Editor**

- Markup Editor User Interface
- Special Characters
- Shortcut Keys
- Pens
- Configuration
- Progressive Validation
- Templates
- Visual Aids
- Import RTF
- Quick Indexes

# Overview

Thank you for using Topologi Professional Edition. This document introduces the features and parts of Topologi 2.3 and after.

## A Solution for Publishing

Topologi Professional Edition helps industrial publishers create, maintain and manage

- XML, SGML and HTML documents,
- Image, video and audio, and
- Service-Oriented Architecture publishing systems.

## Quality & Analytics

Topologi Professional Edition has been designed to help you achieve the highest quality:

- Direct access to markup and metadata
- Validation of markup and graphics
- Term-markup checking and spell checking
- Whitespace manipulation

## Performance

Topologi Professional Edition has been designed for performance:

- Handle documents with more than one million lines;
- Super-fast search-and-replace;
- Operate on multiple files.

## Growth

Topologi Professional Edition is a standalone application but is designed to grow:

- Connection to remote services for easy integration;
- Plug-ins scripts using full Unicode-based Java API allows extension;
- Built-in peer-to-peer networking allows messaging and screenshots.

# Applications

Topologi Professional Edition has a tabbed interface; each file or report has a separate tab. Each of the tabs is either a Markup Editor tab or a TreeWorld Browser tab; TreeWorld is a special tree browser built into the Topologi Professional Edition, and provides a consistent user interface for the Media Browser, custom Tree Editors, the analytic tools, and external services. As well

## Media Browser

The Media Browser provides viewing, validation and metadata for dozens of common media formats: text, images, video, HTML, animation, virtual reality, audio and music. EXIF camera metadata, JPEG validation and multi-page TIFF images are supported.

## Markup Editor

The Markup Editor is designed for all stages of an XML or SGML document's life: entry, import, markup, correction, conversion, proofing and tweaking:

- User-definable Marker Pens for efficient and convenient markup;
- Keyboard shortcuts for efficient data entry;
- Instant visual feedback on syntax errors;
- Grey-out markup to proof-read data content
- Unique markup-aware copy and paste operations
- Complete validation, search and spell-checking features
- Character menu for direct entry of special characters
- Peer-to-peer collaboration features such as instant messaging and screenshot annotation and exchange.

## XML & SGML Analytics

- Comprehensive reports on tag usage in context for XML & SGML documents
- Search for strings and elements-in-context
- Operations on multiple files such as indexing, search-and-replace,
- Select and validate multiple files, using all major schema languages: DTD, Schematron, ISO RELAX NG and W3C XML Schemas. Supports validation of XML and SGML with Catalogs.

The next page is a diagram of the major tools available in Topologi Professional Edition.



# Browse Files

Navigate through your file system and preview, delete or rename files:

- Text, XML, SGML, HTML, RTF
- JPEG, JPEG2000, GIF, multi-page TIFF, PNG
- Video, Audio, Animation, Music (requires Apple QuickTime for Java)

The screenshot shows the 'Media Browser' window in 'Topologi Professional Edition 2.0'. The interface includes a main menu (File, Edit, Search, Markup, Pens, Validate, Characters, Media, Permissions, Help), a toolbar, and a tree area on the left displaying a file system structure. A preview area on the right shows a photo of a white dog. A red circle highlights the 'Media' menu item. Blue arrows point to various UI elements: Main Menu, Tabs, Toolbar, Tree Area, Scrollbar for Tree Area, Preview Area, and Message Bar.

Annotations:

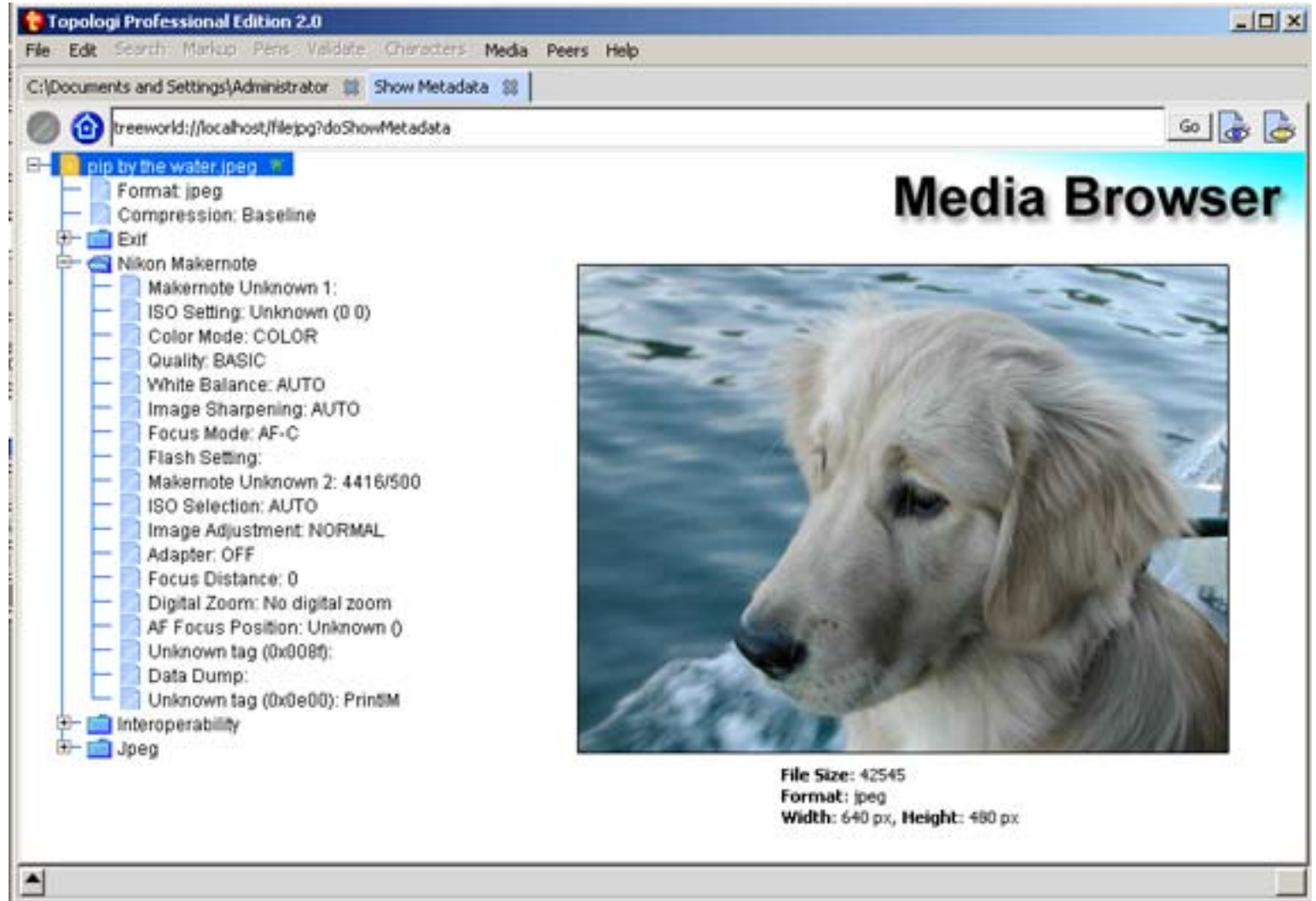
- Main Menu →
- Tabs →
- Toolbar →
- Tree Area →
- Scrollbar for Tree Area →
- Preview Area →
- Message Bar →

Right click on an icon in the Tree Area to see the available actions. If you have closed the browser tab, you can open it again by selecting the menu *Media > Home*

# See Metadata

As well as basic file and format information, see

- EXIF camera metadata
- IPTC press metadata
- GPS geographic position metadata



Right-click on a JPEG or TIFF icon and select *Media Browser > View Metadata*

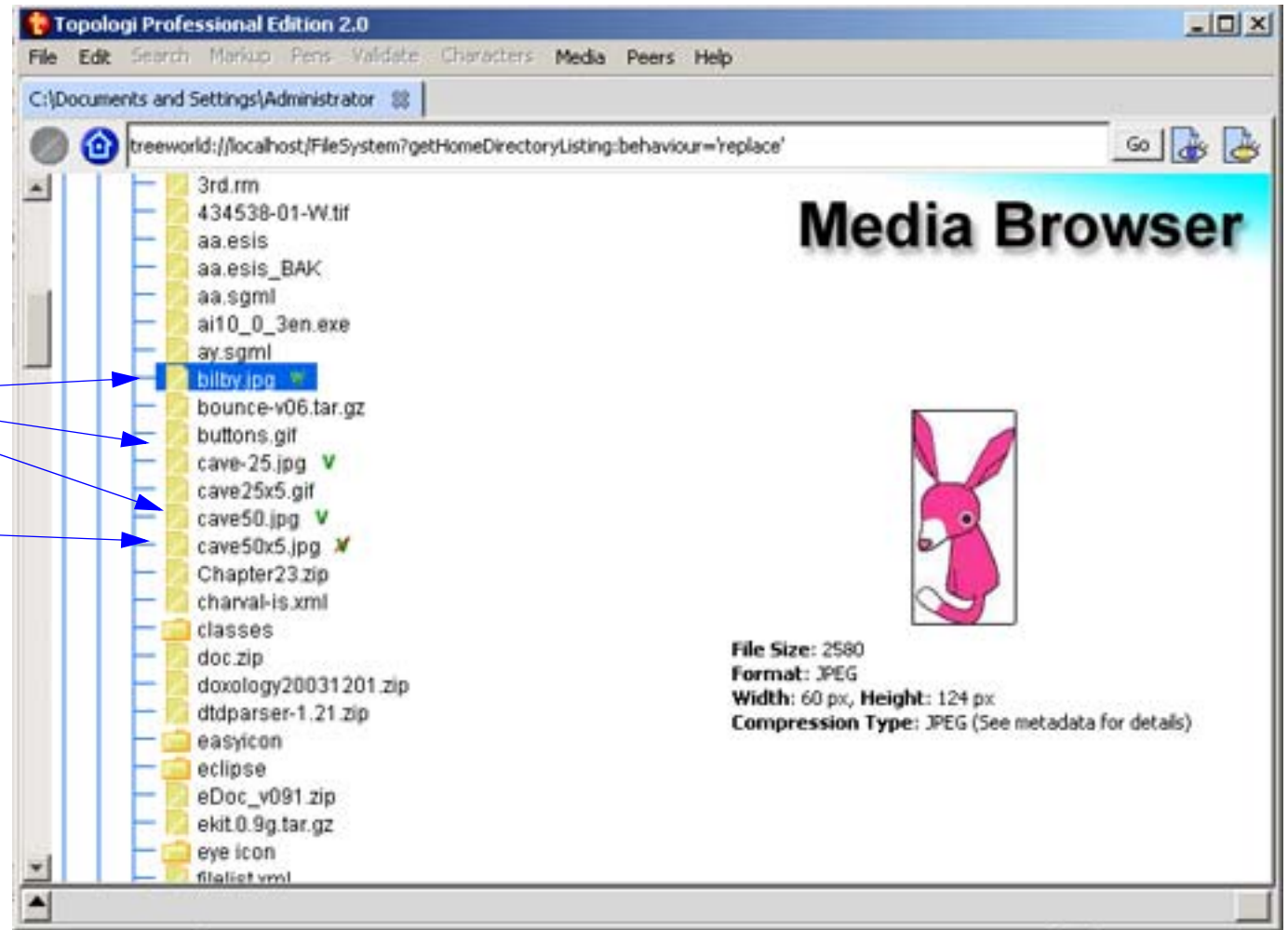
# Check Images

Check one or more images for validity

- Does the extension match the format?
- Is the file not zero-sized?
- Can the file be loaded?
- Is the metadata format correct?
- Does the JPEG file match ISO 10198-1 or EXIF profiles?

Green V means *Valid*

Red Crossed V means *Invalid*



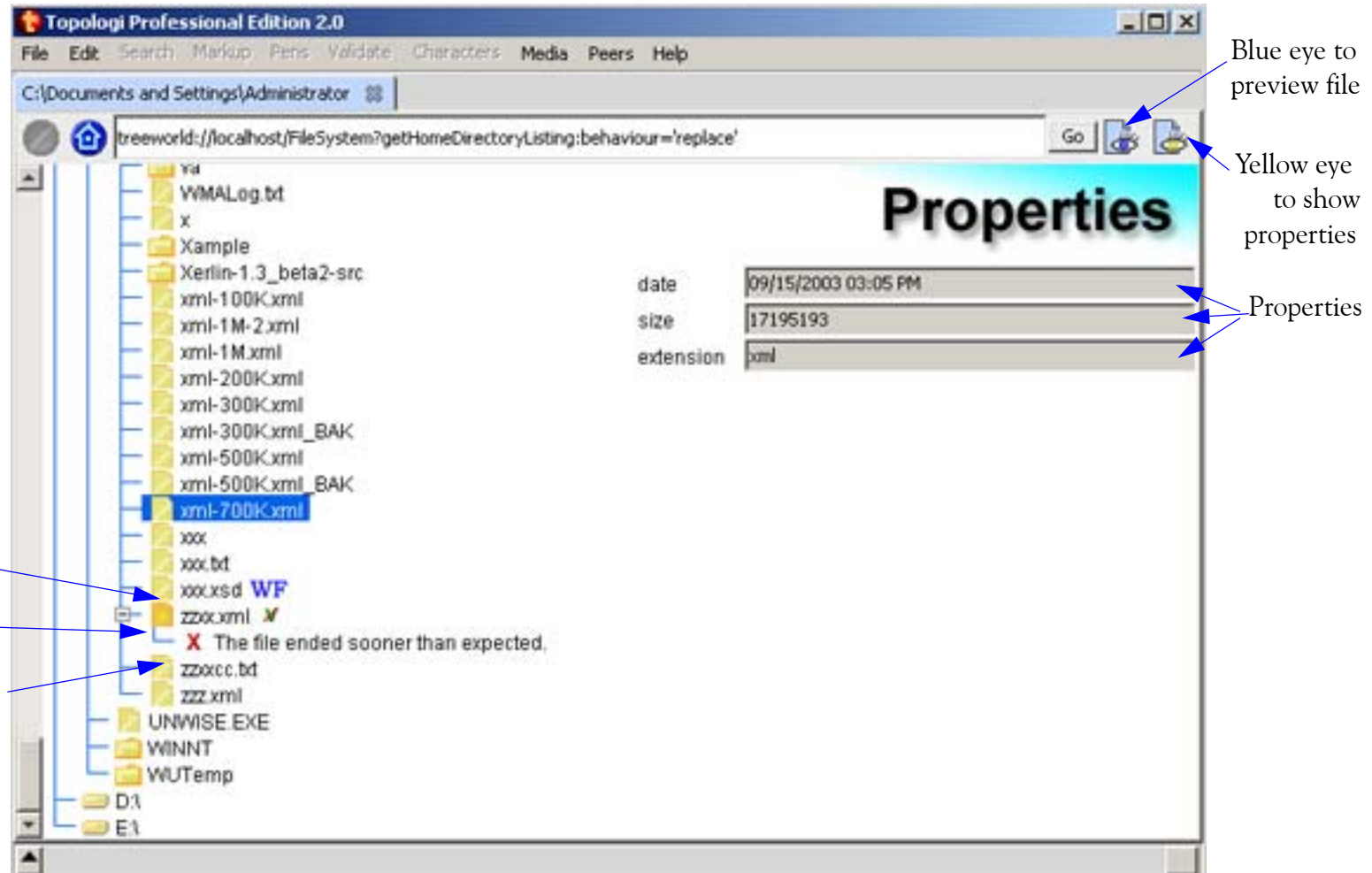
Select one or more TIFFs or JPEG icons, then right-click and select *Media Browser*>*Validate*



# Check Markup

Check the markup in multiple documents:

- Check XML documents for well-formedness;
- Validate XML and SGML documents with DTD, Schematron, ISO RELAX NG and W3C XML Schemas
- Check SGML and XML documents against sampled Schematron *usage* schemas



Select one or more SGML or XML files, then right-click and select *Markup Validation*.

Select an error, right click and select *Open In Markup Editor* to be taken to the location of the error in the built-in Markup Editor.

# Tree-Edit XML

Edit data-oriented XML files with the convenient built-in Tree Editor:

- Generic actions for any document
- Context-specific editor actions created from DTD (requires free configuration tool)
- Validate with DTD, Schematron, ISO RELAX NG and W3C XML Schemas

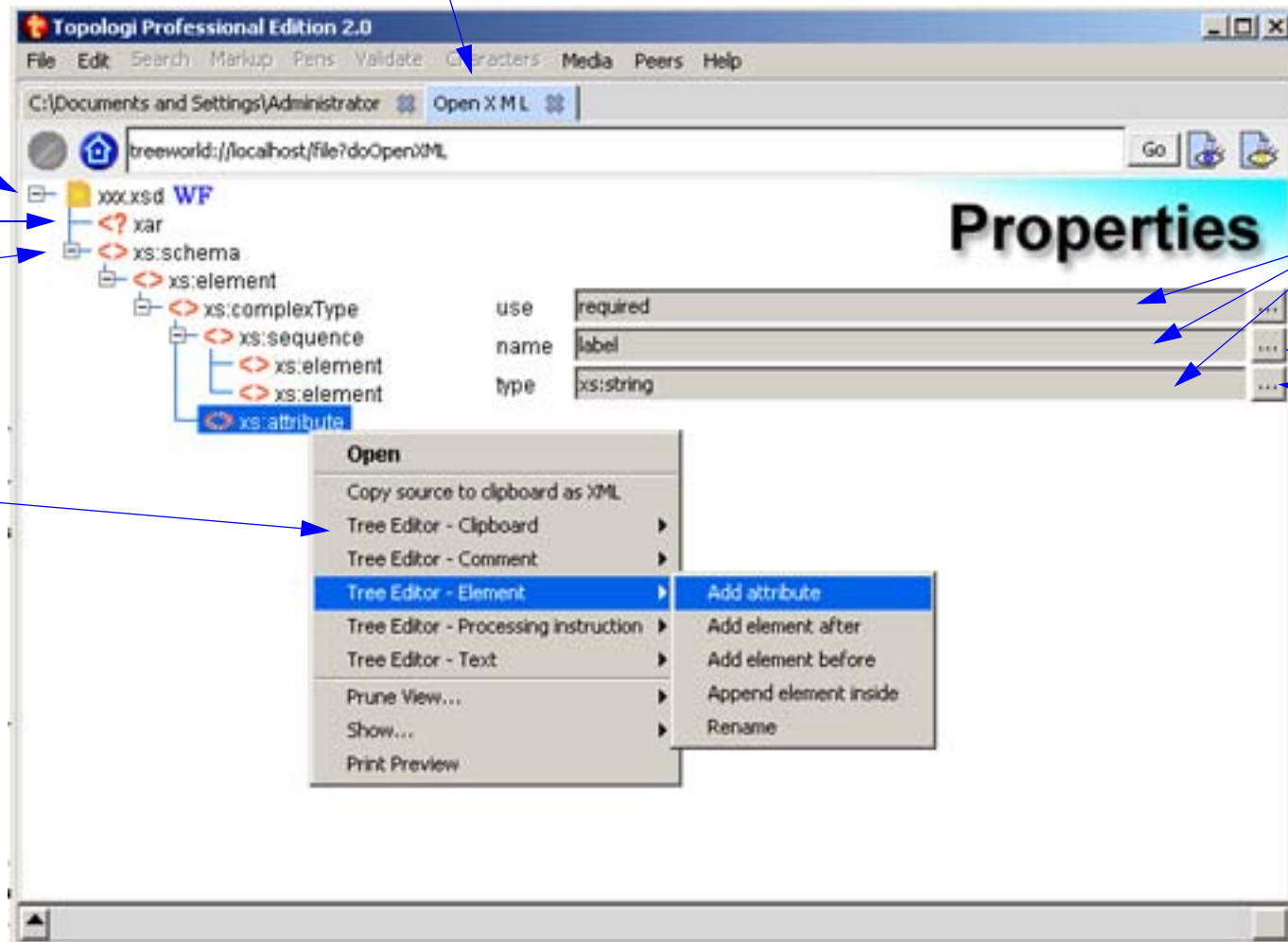
Tree Editor opens New Tab

XML file opens  
in Tree Area

A processing instruction

An element

XML editing commands



Attributes

Edit values

Select an XML file, right-click and select *Open in Tree Editor*

# Report Terms

Examine XML documents to check that terms have been correctly marked:

- Create index of all terms in documents, or just in particular elements or attributes
- Find documents where that term has not been marked up in the elements you expect
- See statistics on term occurrences in context by file

Report in new tab

Index of terms

Terms found

Statistics for currently selected term

Topologi Professional Edition 2.0

File Edit Search Markup Pens Validate Characters Media Peers Help

C:\Documents and Settings\Administrator\List Terms

Terms

- character
- class
- expression
- regular
- reperoire

Term

Statistics

- Minimum Occurrence per document: 2
- Maximum Occurrence per document: 2
- Total number of occurrences: 2
- Found in 1 files

Select one or more XML files, right-click and select *List all Terms in an Element* in the *Lexical Reporter* section

# Report Usage

Sample sets of XML or SGML documents to find how elements and attributes have been used:

- Context Report shows parents, children (first, middle, last), attributes, and following siblings of every element and attribute
- Attribute Report shows all unique attribute values and occurrence statistics
- Path Report shows full XPath's of every element and attribute in context
- Tag Report shows which start- or end-tags follow and precede the current element

The screenshot shows the Topologi Professional Edition 2.0 interface. A report titled 'Combined Report' is open, displaying a tree view of XML elements and attributes. The element 'v.background' is selected, and its report is expanded to show sub-reports for 'Attributes', 'Parents', 'All Children', 'Elements that can be first children', 'Elements that can be last children', 'Elements that precede', 'Elements that follow', and 'Found In'. The 'Attributes' sub-report shows attributes like 'o:bwmode', 'id', and 'fillcolor'. The 'Found In' sub-report shows the file 'master03.xml'. The main report area displays the element name 'Element' and a large '@' symbol. Below this, it shows 'Occurrence in this context: 1'. Blue arrows point from text labels on the left to various parts of the interface: 'Report in new tab' points to the browser tab; 'Attributes report' points to the 'Attributes' sub-report; 'Elements report' points to the 'Elements' sub-report; 'Attributes found' points to the 'Attributes' sub-report; 'Parent elements' points to the 'Parents' sub-report; 'Child elements' points to the 'All Children' sub-report; 'Immediate siblings' points to the 'Elements that precede' and 'Elements that follow' sub-reports; 'Files found in' points to the 'Found In' sub-report; and 'Stats' points to the 'Occurrence in this context: 1' text.

Select XML or SGML files, the right-click and select from the reports in *Structure Reports*

# Get All Paths

All items in any tree in the Tree Area can be:

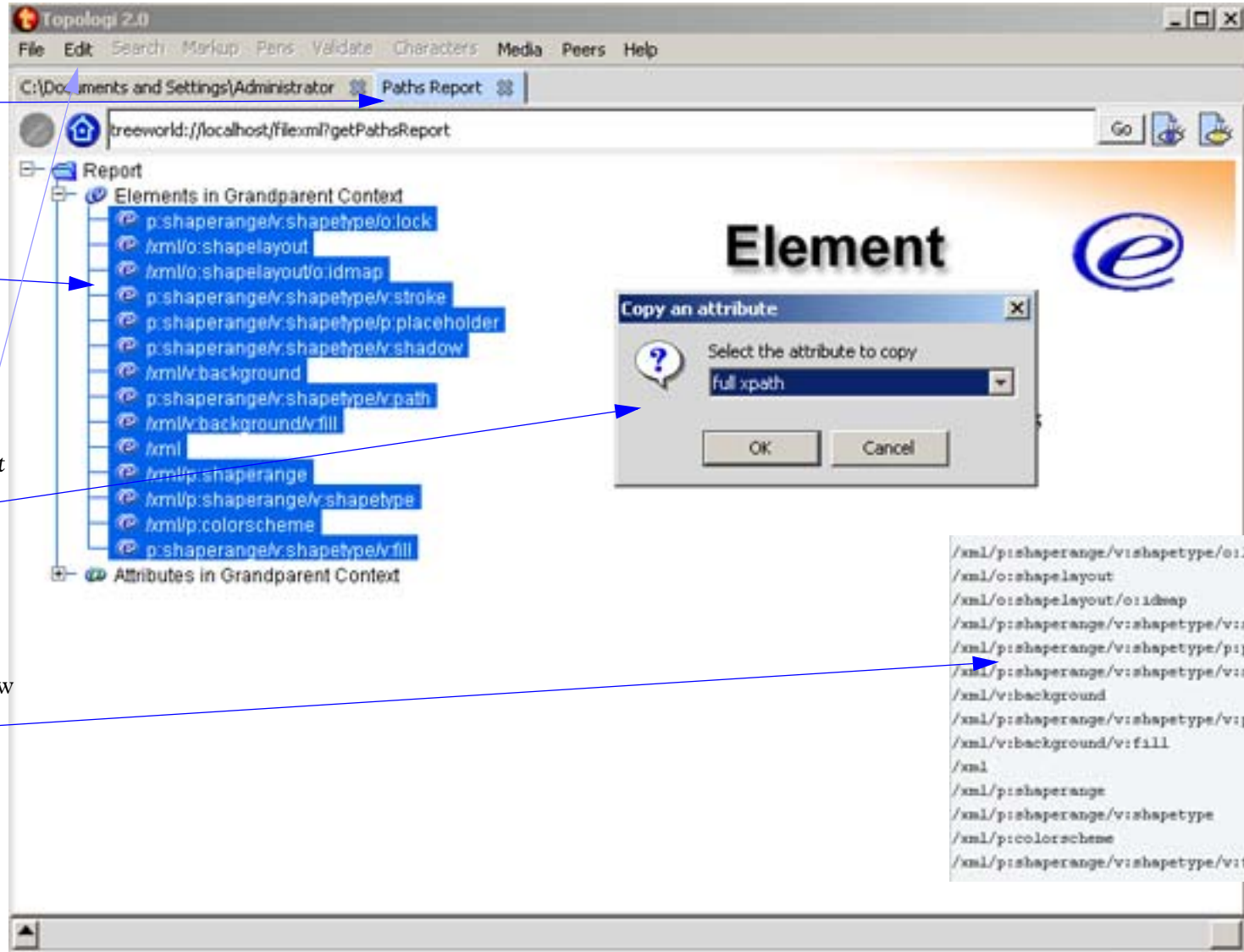
- sorted
- hidden from view (pruned)
- displayed in a new tab
- cut whole branch (as XML) onto the clipboard for later use
- select similar items and copy property value to clipboard for later use

1. Select files, right-click and select *Paths Report*. A Paths Report in new tab

2. Sort and select the unique paths you are interested in

3. Select *Copy* from the *Edit* menu and then select the *Full Xpath* property to copy to the clipboard

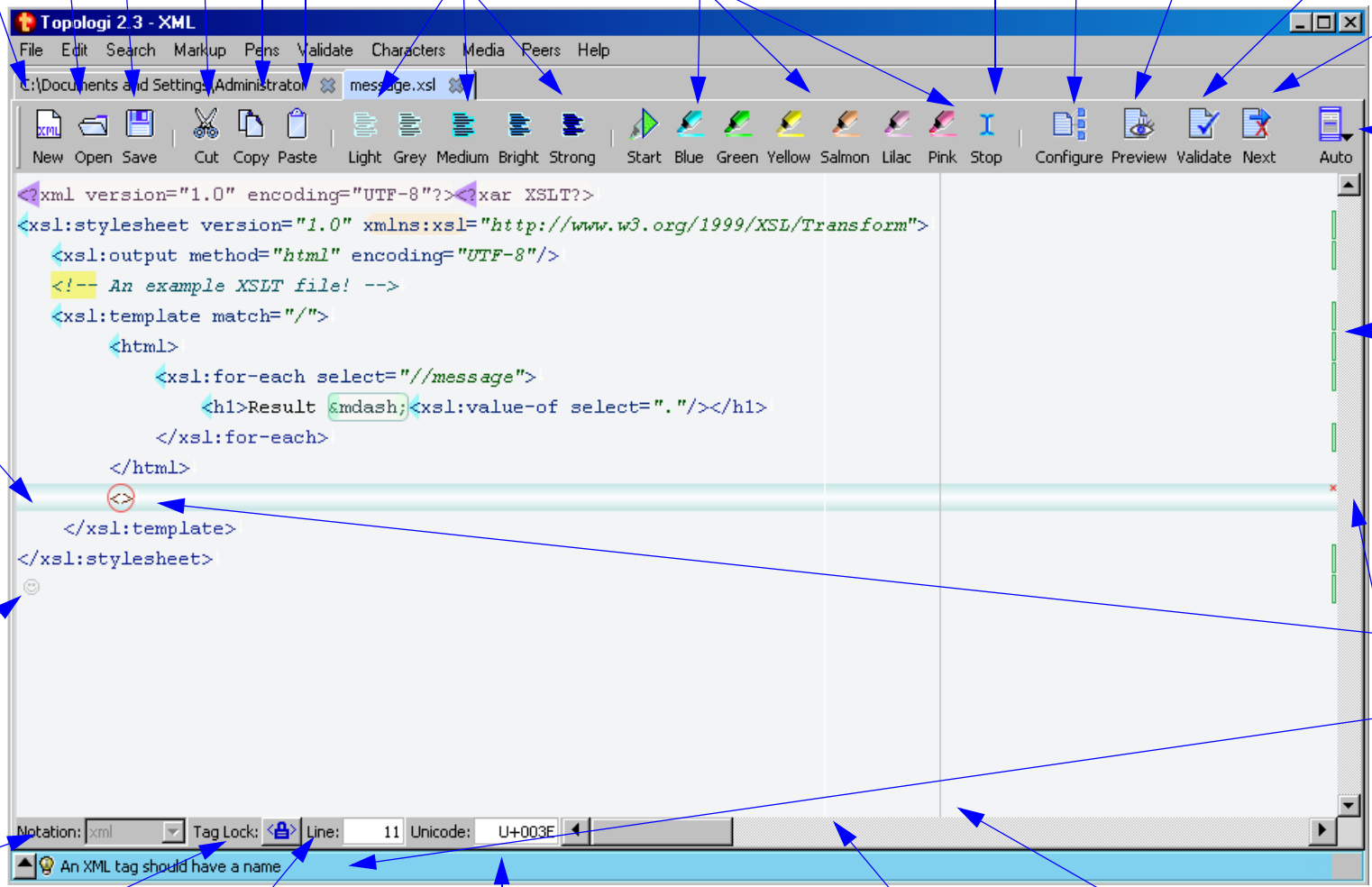
4. The unique paths are now available in the clipboard. You could use these paths as the basis for a stylesheet! (The Topologi Mentor product has special tools to do this even more conveniently!)



# Markup Editor

Edit publishing-oriented documents in the built-in Markup Editor: a tag-aware text editor for XML, HTML and SGML with special features for marking up new documents from raw text.

New Open Save Cut Copy Paste Grey-Out Markup Pens Normal Mouse Configure Preview Revalidate Jump to Error



Current Line

End of file

Notation: xml, sgml, xquery, dtd, java

Tag Locking

Line Number

Character Code in Unicode

Soft Margin (white)

Visual Margin (grey)

Show Template Sidebar

Green bar shows unchanged lines of text

Syntax Errors circled in red with handy fix tip

Repetitive Strain Injury Guard

Select *File>New XML>XML* to create a new XML file, in a new tab. The Configuration Setup form will appear, if you wish to configure the tab for validation and preview at that time.

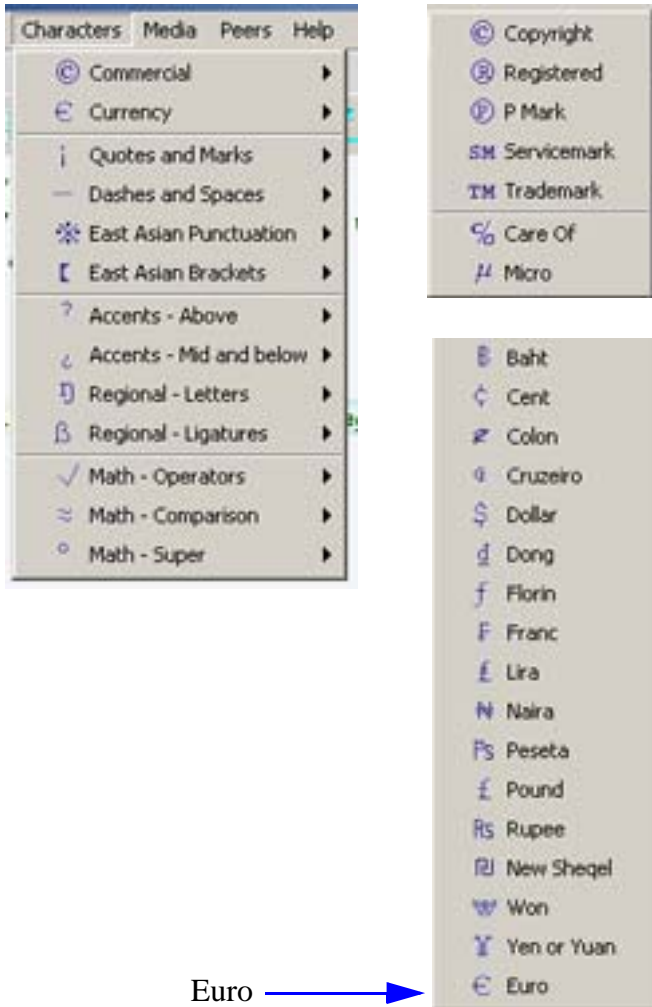
# Special Characters

The Topologi Professional Edition uses the Unicode character standard and supports most Western and Eastern characters. Special characters can be entered by:

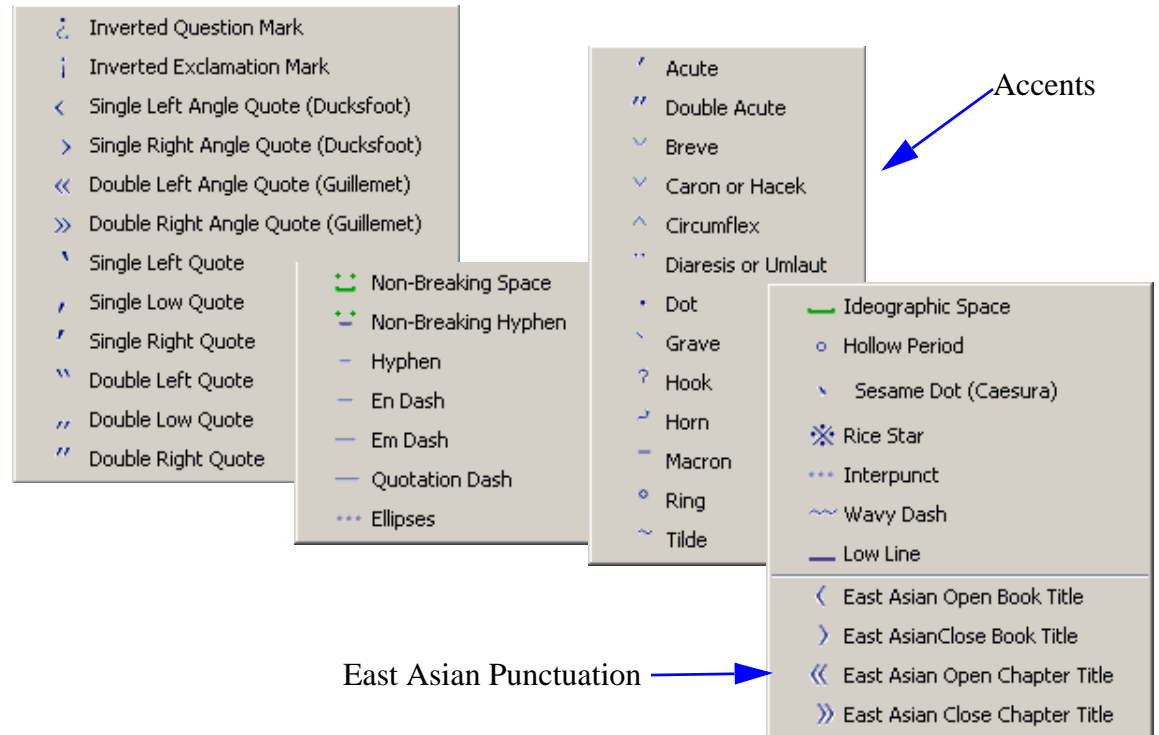
- the native input method (IME) of your computer to type the character
- special Java IMEs
- importing files in other encodings
- selecting a character from the *Characters* menu
- entering the Unicode number for the character in the Character Code box at the bottom left of the Markup Editor.
- cut and paste from other applications, such as the *Character Map* accessory found on most computers.

As well, special characters can be entered indirectly in XML and SGML using numeric character references or ISO entity references. The Template Sidebar provides support for entering entity references.

The *Characters* menu provides direct input of publishing, commercial and regional Latin characters. It has menu items for accents: first type the character you want to accent, then select the appropriate accent(s).



Euro →



Accents →

East Asian Punctuation →



# Shortcut Keys

A full set of shortcut keys is available, following familiar Windows, CUA and other conventions

Key	Function	Shift-Function	Ctrl-Function	Ctrl-Shift-Function
Back-space	Delete previous character		Delete previous word	
DEL	Delete character		Delete word	
HOME	Move to start of line	Select to start of line	Move to start of file	Select to start of file
END	Move to end of line	Select to end of line	Move to end of file	Select to end of file
Left	Move to previous character	Select previous character	Move to previous word	Select previous word
Right	Move to next character	Select next character	Move to next word	Select next word
Up	Move up one line	Select line up		Scroll up
Down	Move down one line	Select next line		Scroll down

Key	Function	Key	Function
ESC	Close element	Ctrl-a	Select All
Ctrl-\	Split element	Ctrl-c	Copy
Ctrl-b	Break, wrap and indent line	Ctrl-f	Find
Ctrl-j	Paste, removing data content	Ctrl-g	Find again
Ctrl-k	Paste, removing data content and attribute values	Ctrl-n	New (XML)
Ctrl-l	Multiline paste	Ctrl-o	Open
Ctrl-w	Validate	Ctrl-p	Print
Ctrl-INSERT	Copy	Ctrl-q	Quit
Shift-INSERT	Paste	Ctrl-r	Redo
Shift-DELETE	Cut	Ctrl-s	Save
<, <!, <?, &	Select Template tab for element, comment, PI, entity	Ctrl-Shift-S	Save As
Ctrl-Space	Reveal the Template Sidebar	Ctrl-t	New (text)
Ctrl-Enter	Insert Template	Ctrl-v	Paste
Ctrl-Up-arrow	Move up template list	Ctrl-x	Cut
Ctrl-Down-arrow	Move down template list	Ctrl-z	Undo

Key	Function	Key	Function	Key	Function	Key	Function	Key	Function	Key	Function
F1	Help	F2	Find	F3	Save As	F4	Open	F5	Print	F6	Next
F7	Break	F8	Trim	Shift-F3	Save	Shft-F4	New	F11	Jump	F12	Save As
Ctrl-F4	Close	Alt-F4	Quit	Ctrl-F9	Light	Ctrl-F10	Normal	Ctrl-F11	Bright	Shift-F12	Save

# Pens

Markup of terms and paragraphs is most efficient using the mouse:

- Associate start and end text with Markup Pens
- Select a pen, swipe text, and that text is wrapped by the start and end text
- ID numbers can be automatically generated and incremented
- Switch better pens sets for different structures
- Sequence through a pen set automatically, for marking up complex structures
- Rectangular selections & multi-line markup available (hold control key down)

The screenshot shows the Topologi 2.0 - XML editor interface. The main window displays an XML document with a table structure. The 'Markup-Pen Set "Tables"' dialog is open, showing various pen options and their associated XML markup. The 'AutoNum' checkbox is checked, indicating automatic numbering. The 'Options' dialog is also visible, showing the 'User' section.

Annotations and steps:

1. Create Pen Set
2. Select Salmon Pen
3. Swipe text to mark up

Autonumber using "\$\$"

XML Document Content:

```
<h1>Table of Years</h1>
<table id="tab1" cols="">
<tr><td> 2000<td> <td>39&ndash;40<td></tr>
<tr><td> 2001<td> <td>40&ndash;41<td></tr>
<tr><td> 2002<td> <td>41&ndash;42<td></tr>
<tr><td> 2003<td> <td>42&ndash;43<td></tr>
<tr><td> 2004<td> <td>43&ndash;44<td></tr>
<tr><td> 2005<td> <td>44&ndash;45</tr>
</table>
```

Markup-Pen Set "Tables" Configuration:

Pen Color	Markup
Blue Pen	<table id="tab\$\$" cols="">
<input checked="" type="checkbox"/> AutoNum	</table>
Green Pen	<tr>
	</tr>
Yellow Pen	<td>
	</td>
Salmon Pen	<td>
	<td>
Lilac Pen	
Pink Pen	

# Configuration

The Topologi Professional Edition does not require any configuration to open and edit files. When you need to, a single form lets you configure:

- schemas (DTDs, Schematron, RELAX NG, W3C XML Schema, Examplotron)
- preview stylesheets (XSLT, CSS)
- catalog files
- sidebar templates for the Markup Editor and context hints for the Tree Editor
- HTML documentation

The screenshot shows the 'Configure Support Files' dialog box. At the top, there is a dropdown menu for 'Schematron' and buttons for 'Get XAR Updates' and 'Create New XAR'. Below this are buttons for 'Select from existing configurations...', 'Make default', 'Save to file', and 'Load from file'. The main area is a table with columns for category, file path, and 'Locate' button. The categories listed are Information File, Templates, External XML DTD, Examplotron, RELAX NG, RELAX NG Compact, XML Schema, Schematron, CSS, XSLT, SGML DOCTYPE, SGML Catalog, SGML Declaration, and Context hints. Annotations with blue arrows point to various parts of the dialog: 'Select XAR' points to the dropdown; 'Documentation' points to 'Information File'; 'Templates' points to 'Templates'; 'Schemas for XML' points to 'External XML DTD', 'RELAX NG', 'RELAX NG Compact', and 'XML Schema'; 'Stylesheets' points to 'CSS' and 'XSLT'; 'SGML' points to 'SGML DOCTYPE', 'SGML Catalog', and 'SGML Declaration'; 'Tree Editor contextual help' points to 'Context hints'; 'Create new XAR using current entries' points to the 'Create New XAR' button; 'Populate the form with entries from a default configuration, or from the configuration used by some other tab, or using a saved configuration. Recent files have their last configuration reloaded automatically.' points to the 'Load from file' button; and 'Locate files for schemas, etc..' points to the 'Locate' button in the 'XML Schema' row.

Category	File Path	Action
Information File	C:\Program Files\topolog\TPRO2\schemas\Schematron\index.html	Locate
Templates	C:\Program Files\topolog\TPRO2\schemas\Schematron\vendor\topologi.com\Schematron.nl	Locate
External XML DTD	C:\Program Files\topolog\TPRO2\schemas\Schematron\schematron1-5.dtd	Locate
Examplotron		Locate
RELAX NG		Locate
RELAX NG Compact		Locate
XML Schema		Locate
Schematron	C:\Program Files\topolog\TPRO2\schemas\Schematron\schematron1-5.sch	Locate
CSS		Locate
XSLT		Locate
SGML DOCTYPE		Locate
SGML Catalog		Locate
SGML Declaration		Locate
Context hints		Locate

Convenient XAR (XML Application Archives) bundle different configuration files together. Select an XAR or fill in forms data individually. A *Usage Schema* created by sampling documents can be selected in addition.

# Progressive Validation

Check the correctness of your XML document in stages, from raw text to fully marked-up:

- Delimiters correct
- Well-formed
- Feasible elements (incomplete contents)
- Valid (DTD, schema)
- Schematron valid

The Markup Editor provides instant feedback on delimiter errors with red circles and helpful hints. When a fragment is selected, the Markup Editor will attempt to validate just that rather than the whole file or document.

The screenshot shows the Topologi 2.0 - XML Markup Editor interface. The menu bar includes File, Edit, Search, Markup, Pens, Validate, Characters, Media, Peers, and Help. The toolbar contains various editing and validation icons. The main text area displays XML code for a stylesheet. A red box highlights an error in the `&mdash;` entity reference within the `<h1>` element. The status bar at the bottom shows the error message: "(1 of 1) The entity "mdash" was referenced, but not declared. If it is a character entity, check the public set is included." Blue arrows point to the Validate menu, the error location, the error message, the Re-validate icon, the Jump to error icon, and the Configure icon.

Validate menu to configure and select which kind of validation

Error location

Error message

Re-validate

Jump to error

Configure

# Templates

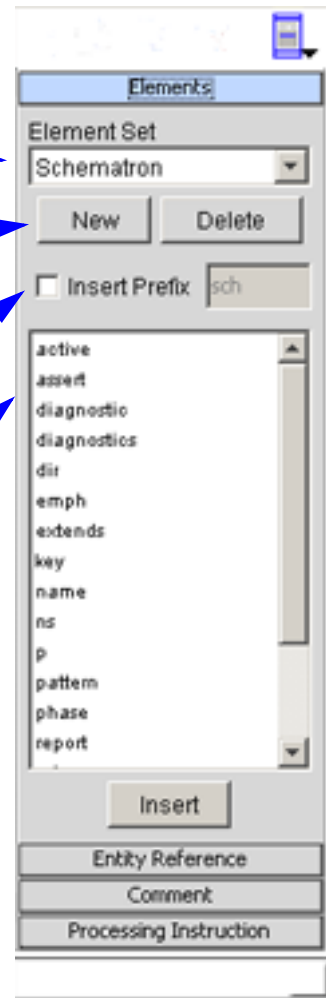
Tag completion and faster data entry: Topologi Professional Edition allows templates sets for

- elements
- entity references
- processing instructions
- comments

Templates are organized into sets  
Template sets come from XAR applications, or from DTD or usage samples, or you can make your own.

Choose if you wish to generate namespace prefix

Tag completion: the Template Sidebar follows your typing: when you type a < the Element templates become active. For example, type <as then **Ctrl-Enter** and the template for *assert* will be entered. Or use the mouse: click on **Elements** then double click on the template you want.



← Show/Hide Template Sidebar (Ctrl-Enter)

← For Element templates

← For Entity Reference templates

← For Comment templates

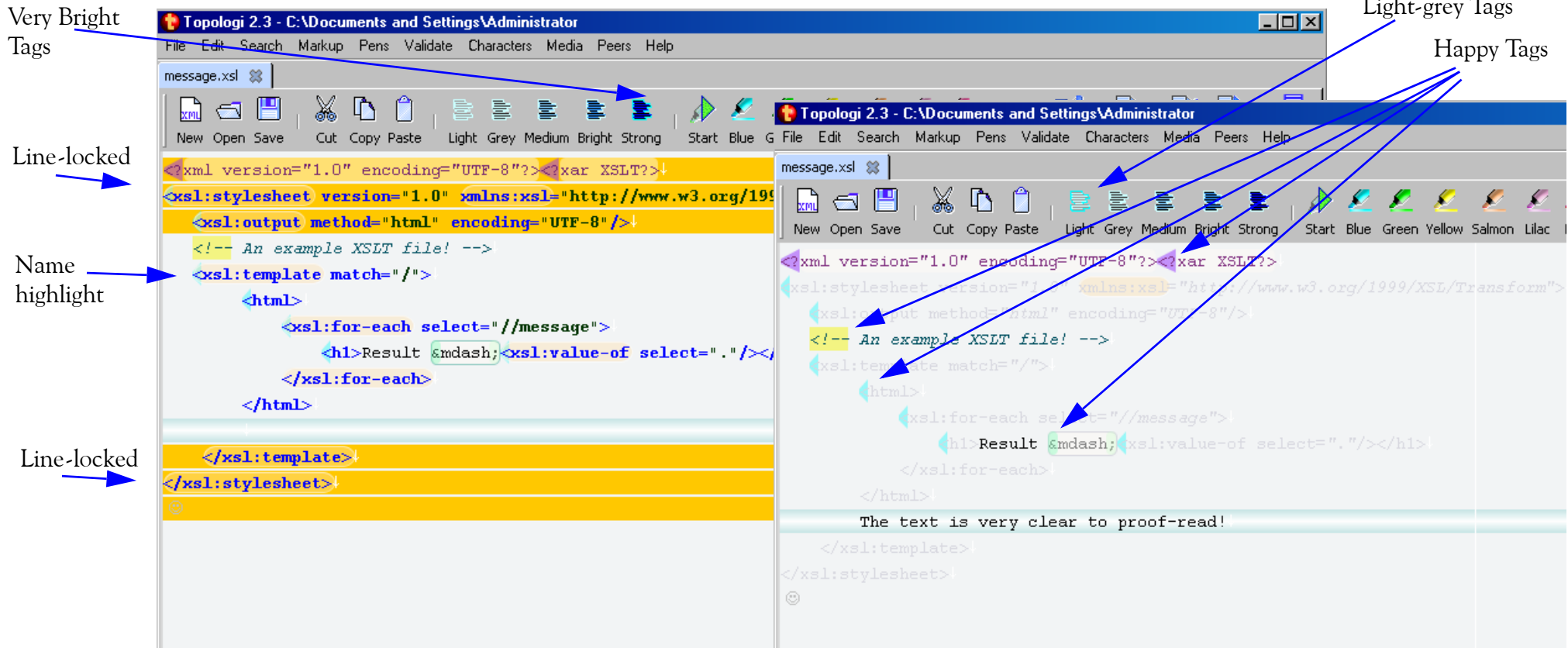
← For Processing Instruction templates

Templates can include any text, even text without tags. The Template sidebar tracks your key-boarding: if you type <, <?, <!--, or & the sidebar will attempt to match the next characters you type with names of element, PI, comment or entity reference templates, respectively. You can type an XML Namespace-style prefix to select a particular set.

# Visual Aids

Topologi Professional Edition has five special features to help you edit:

- *Grey-out* buttons provide five preset levels of contrast and colour: these range from *light-grey*, where tags are almost completely invisible to allow proofreading, to *very bright*, where tags are bold and in strong colours.
- *Line-locking* marks a region at the top and bottom with an orange highlight, and prevents editing operations in those areas. Useful to prevent overrun on large and repetitive files.
- *Name-highlighting* draws a mild yellow highlight behind element and attribute names that start with a string you provide: for example, "xslt:" would highlight XSLT elements but not HTML elements in an XSLT script.
- *Happy Tags* are undercolours for the open delimiters of tags: comments, start-tags, processing-instructions and references, and sections without them, have never been clearer.
- *User Preferences* supports various accessibility options, such as changing colors, fonts, font sizes, and anti-aliasing. You can change font size using your mouse wheel and the control key too.



# Import RTF

The RTF import tool lets you:

- Read an RTF file
- Make simple editing corrections
- Convert the RTF text to XML, with custom names, prefixes and indentation

The image shows two windows. The 'RTF Processor' window displays the 'XML and SGML Import from RTF' dialog. It lists features like 'Reads RTF', 'Exports to XML', and 'Converts style names to element names'. At the bottom, there are checkboxes for 'Pre...', 'Body', and 'Font' (all checked), and a table for 'Select the element tags to insert' with columns for tag name and value. The 'Bold' checkbox is checked with 'b' in the value field. The 'Italic' checkbox is checked with 'i' in the value field. The 'Undedi...' checkbox is checked with 'u' in the value field. There are also checkboxes for 'Indent' and 'Space'.

The 'Topologi 2.0 - XML' window shows the resulting XML output. The text is wrapped in XML tags, including <font> tags for styling and <body> tags for structure. The XML is re-indented for readability.

Annotations with arrows point to various elements:

- 'RTF file' points to the title of the RTF Processor window.
- 'XML Prefix' points to the 'Pre...' checkbox.
- 'Tagnames for RTF body and font' points to the 'Body' and 'Font' rows in the tag selection table.
- 'Imported RTF file (Re-indented using publishing markup option of Foreman tool)' points to the XML output in the Topologi window.
- 'Tagnames for bold, italic and underline' points to the 'b', 'i', and 'u' values in the tag selection table.
- 'Indent XML' points to the 'Indent' checkbox.
- 'Collapse spaces' points to the 'Space' checkbox.

Select *Import from RTF* from the *Import* menu in the *Markup* menu.

Note: RTF is not a structured format and different applications generate very different kinds of RTF: visual structures apparent to the eye such as tables may not translate to useful markup.

# Quick Indexes

Quick indexes are useful for navigation (even through non-well-formed documents), searches, and report or index generation. Validation results can even be displayed in the List Viewer.

Search field (regular expression)

Perform search (result in bold)

Perform other search with merged results (other results in plain, to show context)

Search results (Double click to jump to location in Markup Editor)

Sort by text or by line number

Copy list to clipboard

```
<xsl:template match="*" mode="toc"/>
<xsl:template match="*" mode="xref"/>
<xsl:template match="*" />
<xsl:template match="" />
<xsl:template match="annex" mode="toc"/>
<xsl:template match="annex" mode="xref"/>
<xsl:template match="annex" />
<xsl:template match="b" />
<xsl:template match="bibliography" mode="toc"/>
<xsl:template match="bibliography" />
<xsl:template match="bibliography/referenced-document" mode="xref"/>
<xsl:template match="clause" mode="toc"/>
<xsl:template match="clause" mode="xref"/>
<xsl:template match="clause" />
<xsl:template match="clause//clause|annex//clause" mode="toc"/>
<xsl:template match="clause//clause|annex//clause" mode="xref"/>
<xsl:template match="clause" />
<xsl:template match="code" />
<xsl:template match="definition" />
<xsl:template match="document" mode="toc"/>
<xsl:template match="ed" />
<xsl:template match="example/p[1]" />
<xsl:template match="example|note" />
<xsl:template match="fig" />
<xsl:template match="foot" />
```

- Example: What XSLT templates Do I Have?
1. Search XSLT document for all `xs:template`
  2. Sort by text
  3. Copy to clipboard
  4. Paste into editor

```
<xsl:template match="*" mode="toc"/>
<xsl:template match="*" mode="xref"/>
<xsl:template match="*" />
<xsl:template match="" />
<xsl:template match="annex" mode="toc"/>
<xsl:template match="annex" mode="xref"/>
<xsl:template match="annex" />
<xsl:template match="b" />
<xsl:template match="bibliography" mode="toc"/>
<xsl:template match="bibliography" />
<xsl:template match="bibliography/referenced-document" mode="xref"/>
<xsl:template match="clause" mode="toc"/>
<xsl:template match="clause" mode="xref"/>
<xsl:template match="clause" />
<xsl:template match="clause//clause|annex//clause" mode="toc"/>
<xsl:template match="clause//clause|annex//clause" mode="xref"/>
<xsl:template match="clause" />
<xsl:template match="code" />
<xsl:template match="definition" />
<xsl:template match="document" mode="toc"/>
<xsl:template match="ed" />
<xsl:template match="example/p[1]" />
<xsl:template match="example|note" />
<xsl:template match="fig" />
<xsl:template match="foot" />
```

Select *List Occurrences* from the Search menu