xtpxlib-xdoc

An xtpxlib component for generating documentation

Erik Siegel - Xatapult Content Engineering
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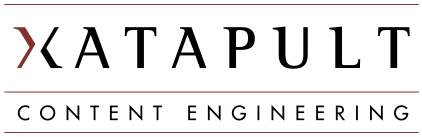
0 Documentation generation with xtpxlib-xdoc



xtpxlib library - component **xtpxlib-xdoc** - **v0.0** (2019-11-28)
Xatapult Content Engineering - http://www.xatapult.com - +31 6 53260792
Erik Siegel - erik@xatapult.com

xtpxlib-xdoc is part of the **xtpxlib** library. **xtpxlib** contains software for processing XML, using languages like XSLT and XProc. It consists of several separate components, all named `xtpxlib-*`. Everything can be found on GitHub (https://github.com/xatapult).

`xtpxlib-xdoc` TBD

Installation and usage information can be found on **xtpxlib**'s main website https://www.xtpxlib.org.

Technical information:

Component documentation: https://xdoc.xtpxlib.org
License: GNU GENERAL PUBLIC LICENSE - Version 3, 29 June 2007
Git URI: `git@github.com:xatapult/xtpxlib-xdoc.git`
Git site: https://github.com/xatapult/xtpxlib-xdoc
This component depends on:

- xtpxlib-container (Support for XML containers (multiple files wrapped into one))
- xtpxlib-common (Common component: Shared libraries and IDE support)

1 Description

Have you ever struggled with producing technical documentation for your software, content model or anything else? Big chance that you have had to deal with repeating constructs: Explaining XML elements and attributes, documenting functions, procedures and variables, etc. The same constructs over and over again, usually with complex tables, little pieces of program listings or other things that are difficult to keep consistent and maintain. The `xtpxlib` component **`xtpxlib-xdoc`** tries to alleviate this problem

`xtpxlib-xdoc`'s starting point is *narrative* documentation written in DocBook 5.1. On top of this it adds a number of extensions. This source format, DocBook + extensions, is called *`xdoc`*.

The **`xtpxlib-xdoc`** XProc (1.0) pipelines turns the `xdoc` format into "pure" DocBook. From there it can be converted into PDF or HTML using standard DocBook technology. The **`xtpxlib-xdoc`** component itself also contains conversions into PDF (through XSL-FO) and HTML. These work out of the box but, especially the PDF one, uses a layout that might not be what you want or need. But since the source is available you can tweak it to your heart's desire.

`xtpxlib-xdoc` currently allows two types of extensions on top of DocBook:

Parameter expansion
: Parameters, coming from some parameter source, are expanded. This useful for, for instance, status information, dates/times, standard words and phrases, etc. This uses the parameter mechanism as introduced in `xtpxlib`'s common component.

Transforms
: The so-called `xdoc` transforms convert something, usually some piece of XML, into DocBook and insert the result back in the main document. This is extremely useful for *consistent* and *repeating* documentation generation.

Curious to see it in action. Want to know more? Checkout the "Getting started" on page 5 section. This contains some ready-to-run examples that are drafted so you can use them as template for your own developments.

1.1 The main toolchain

The following figure illustrates **`xtpxlib-xdoc`**'s main toolchain:

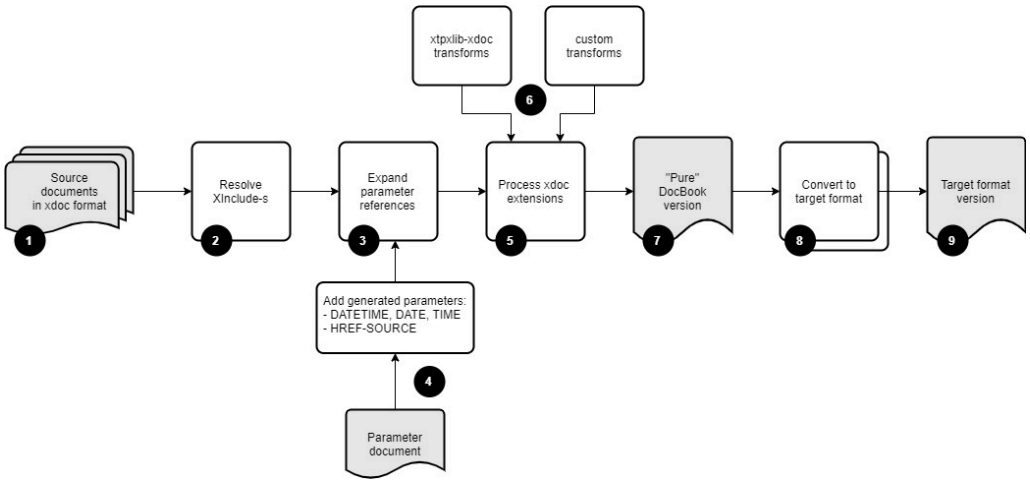


*Figure 1-1 - **`xtpxlib-xdoc`**'s main toolchain*

1. The **`xtpxlib-xdoc`** module uses a format called **`xdoc`** as its source format. The basis of `xdoc` is DocBook 5.1. On top of this `xdoc` adds extensions for parameter handling and code/markup/text generation.
2. The first processing step in the toolchain performs basic XInclude processing. This means that you can build your document from smaller parts, for instance one document per chapter.

   Another application of the XInclude processing is to get the data in for the `xdoc` transform processing in step 5.

3. The next step is to expand any parameter references in the source document. A parameter is a name/value pair. To expand its value in the document use either `${name}` or `{$name}` (both mean the same). Parameters are expanded both in text and in attribute values.
4. Parameters come from two sources:
   - An (optional) parameter document. This document must use the format as handled by the parameter mechanism of `xtpxlib`'s common component. For instance:

     ```
     <parameters>
       <parameter name="my-parameter">
         <value>Some value…</value>
       </parameter>
     </parameters>
     ```

     This format has several additional features, like filtering and grouping values. See the format's description for more information.
   - The toolchain adds a number of parameter of its own:

Parameter	Description	Example value(s)
`DATETIME`	The date and time the toolchain executed in `YYYY-MM-DD hh:mm:ss` format.	`2019-11-11 12:12:12`
`DATE`	The date part of the `DATETIME` parameter.	`2019-11-11`
`TIME`	The time part of the `DATETIME` parameter.	`12:12:12`
`HREF-SOURCE`	The main source's filename.	`C:/my/path/sourcedoc.xml` `/my/path/sourcedoc.xml`

*Table 1-1 - Parameters added by the **`xtpxlib-xdoc`** toolchain*

5. Next the so-called `xdoc` transforms are processed. A transform consists of an `<xdoc:transform>` element (the namespace prefix `xdoc:` must be bound to `http://www.xtpxlib.nl/ns/xdoc`). An XSLT stylesheet or XProc (1.0) pipeline is triggered that gets this `<xdoc:transform>` element (with all attributes and child elements) as input and results in the injection of generated DocBook.
6. The transformations triggered by `<xdoc:transform>` can come from two sources:
   - Transformations that are built into the **`xtpxlib-xdoc`** component. These are generic transformations for, for instance, documenting XML structures or generating code documentation. An overview of these can be found in [TBD].
   - Your own transformations. Guidelines on how to write these can found in [TBD].
7. The result of the toolchain so-far is a document in "pure" DocBook 5.1.
8. From this you can transform to some target format.

   The **`xtpxlib-xdoc`** component contains transformations to both PDF and HTML (see [TBD]). These transformations can only handle a subset of the full DocBook standard. The result will be rather specific for the **`xtpxlib-xdoc`** component and might not be directly usable for other use-cases. To amend this you can copy-and-adapt these transformations or use some other DocBook conversion.
9. Finally, the result of all this is a document in the desired target format.

Information about the pipelines that implement this toolchain can be found in [TBD]

2 Getting Started

TBD

3 xdoc transforms

The **xtpxlib-xdoc** component uses (a subset of) DocBook 5.1 as its main vocabulary. Within this there can be so-called *xdoc extensions*. These are specific elements in the xdoc (http://www.xtpxlib.nl/ns/xdoc) namespace that trigger special actions, like generating code documentation or describe some XML document.

3.1 xdoc extension elements

The xdoc format recognizes the following extension elements. The xdoc: namespace prefix used here is bound to the http://www.xtpxlib.nl/ns/xdoc namespace (xmlns:xdoc="http://www.xtpxlib.nl/ns/xdoc").

3.1.1 Extension element xdoc:dump-parameters

This extension element shows the parameters that are currently in use. It is mainly use for debugging purposes.

```
<xdoc:dump-parameters type? = "comment" | "table" />
```

Attribute	#	Type	Description
type	?	xs:string	Default: comment Whether to dump the parameters as a comment or table. Value: comment — Dump the parameters as an XML comment Value: table — Dump the parameters as a table

3.1.2 Extension element xdoc:transform

This extension element runs an xdoc transformation (either XProc (1.0) or XSLT (2.0 or 3.0)). It is completely replaced by the outcome of the transformation.

There are several built-in transformations. You can also write your own transformations.

```
<xdoc:transform href = xs:anyURI
                (any)? >
  <!-- Usually an <xi:include> element to load the data for the transformation. -->
</xdoc:transform>
```

Attribute	#	Type	Description
href	1	xs:anyURI	Reference to the actual transformation. Relative names are resolved against the location of the source document. This file's extension determines whether an XProc 1.0 (extension: .xpl) or an XSLT (extension: .xsl) is done. A value that starts with $xdoc is assumed to be an xtpxlib-xdoc built-in transformation (e.g. href="$xdoc/code-docgen.xpl"). See also "Built-in xdoc transformations" on page 6.
(any)	?		Often transformations specify additional attributes on the <xdoc:transform> element to parametrize their functionality. Any additional attribute is allowed here.

3.2 Built-in xdoc transformations

3.2.1 XProc (1.0) pipeline: code-docgen.xpl (xdoc:code-docgen)

Takes some XML document (XSL, XSD, XProc, ordinary XML, etc.) and tries to generate some documentation out of it. For instance this section itself is generated by the code-docgen.xpl transformation on itself.

Typical usage (within an xdoc source document):

```
<xdoc:transform href="$xdoc/code-docgen.xpl
   filecomponents="…"
   header-level="…"
   add-table-titles="…"
   sublevels="…"
   id="…" >
  <xi:include href="path/to/document/to/generate/documentation/for"/>
</xdoc:transform>
```

- `@filecomponents`: Determines the display of the filename:
  - When lt 0, no filename is displayed
  - When eq 0, the full filename (with full path) is displayed
  - When gt 0, this number of filename components is displayed. So 1 means filename only, 2 means filename and direct foldername, etc.
- `@header-level`: Determines what kind of DocBook section is created:
  - When le 0, no separate section is created, all titles will be output as `bridgehead` elements.
  - Otherwise a title with this level is created (e.g. `header-level="1"` means a `sect1` element).
- `@add-table-titles`: (boolean, default `false`) Whether to add titles to generated tables.
- `@sublevels`: (boolean, default `true`) If true only the main section will be a "real" section. All sublevels will become bridgeheads.
- `@id`: Optional identifier of this section. If absent the id will become the document's filename.

When the format to document has means to add documentation of itself (like XProc (`p:documentation`) or XML Schema (`xs:annotation`)), this is used. When there is no such thing (like for XSLT and straight XML), comments starting with a tilde (~) are used.

The descriptions can contain simple Markdown.

The following formats are supported

- XML documents: only the header comment is used.
- XSLT (2.0 and 3.0) stylesheets: document all exported parameters, variables, functions and named templates. SOmething is supposed to be for export if its *not* in the no or local namespace.
- XProc (1.0) pipelines and libraries
- XML Schemas: use the main annotation and document the global elements

Port	Type	Primary?	Description
`source`	in	yes	The document to generate documentation for, wrapped in an `xdoc:transform` element.
`result`	out	yes	The resulting DocBook output.

3.2.2 XProc (1.0) pipeline: xml-description.xpl

Turns an XML element description into the appropriate DocBook. An annotated schema for the element's description markup can be found in `xsd/element-description.xml`.

Typical usage (within an `xdoc` source document):

```
<xdoc:transform href="$xdoc/xml-description.xpl>
  <xi:include href="path/to/xml/description.xml"/>
</xdoc:transform>
```

Port	Type	Primary?	Description
`source`	in	yes	The document containing the XML description, wrapped in an `xdoc:transform` element.
`result`	out	yes	The resulting DocBook output, containing the element's description.

3.3 Writing your own xdoc transformations

[TBD]

4 XProc Pipelines

The xtpxlib-xdoc component contains the following XProc (1.0) pipelines:

Module	Description
`docbook-to-pdf.xpl`	This turns Docbook (5.1) into a PDF using FOP.
`docbook-to-xhtml.xpl`	This turns Docbook (5.1) into XHTML.
`xdoc-to-docbook.xpl`	Pipeline that transforms a DocBook source containing xdoc extensions into true DocBook format.
`xdoc-to-pdf.xpl`	Convenience pipeline: Combines the xdoc-to-docbook and the docbook-to-pdf steps in one.
`xdoc-to-xhtml.xpl`	Convenience pipeline: Combines the xdoc-to-docbook and the docbook-to-xhtml steps in one.

Table 4-1 - Module overview

4.1 XProc (1.0) pipeline: docbook-to-pdf.xpl (xdoc:docbook-to-pdf)

File: `xpl/docbook-to-pdf.xpl`

This turns Docbook (5.1) into a PDF using FOP.

All necessary pre-processing (resolving xincludes, expanding variables, examples, etc.) must have been done before this. To make sure we can find the images and other stuff, add appropriate xml:base attributes.

It will only convert a partial DocBook tagset. See TBD.

This is the code you would usually want to run before running this step, to get all the xml:base stuff right:

Port	Type	Primary?	Description
`source`	in	yes	The docbook source document, fully expanded (with appropriate xml:base attributes)
`result`	out	yes	The resulting XSL-FO that was transformed into the PDF

Option	Rq?	Default	Description
`chapter-id`		`''`	Specific chapter identifier to output (for debugging purposes)
`dref-pdf`	yes		The name of the resulting PDF file
`fop-config`		`resolve-uri('../../xtpxlib-common/data/fop-default-config.xml', static-base-uri())`	Reference to the FOP configuration file
`global-resources-directory`		`()`	Images that are tagged as `role="global"` are searched here (discarding any directory information in the image's URI)
`main-font-size`		`10`	Main font size as an integer. Usual values somewhere between 8 and 10.
`output-type`		`'a4'`	Output type. Use either a4 or sb (= standard book)
`preliminary-version`		`false()`	If true, adds a preliminary version marker and output any db:remark elements. If this is set to false, db:remark elements will be suppressed.

4.2 XProc (1.0) pipeline: docbook-to-xhtml.xpl (xdoc:docbook-to-xhtml)

File: `xpl/docbook-to-xhtml.xpl`

This turns Docbook (5.1) into XHTML.

All necessary pre-processing (resolving xincludes, expanding variables, examples, etc.) must have been done before this. To make sure we can find the images and other stuff, add appropriate xml:base attributes.

It will only convert a partial DocBook tagset. See TBD.

Port	Type	Primary?	Description
source	in	yes	The docbook source document, fully expanded (with appropriate xml:base attributes)
result	out	yes	The resulting XHTML

Option	Rq?	Default	Description
create-header		true()	Whether to create header (title, etc.) information

4.3 XProc (1.0) pipeline: xdoc-to-docbook.xpl (xdoc:xdoc-to-docbook)

File: xpl/xdoc-to-docbook.xpl
Pipeline that transforms a DocBook source containing xdoc extensions into true DocBook format.

Port	Type	Primary?	Description
source	in	yes	The DocBook source with xdoc extensions
result	out	yes	The resulting DocBook

Option	Rq?	Default	Description
href-parameters		()	Reference to an optional document with parameter settings. See the xtpxlib-common parameters.mod.xsl module for details.
parameter-filters		()	Filter settings for processing the parameters. Format: "name=value|name=value|..."

4.4 XProc (1.0) pipeline: xdoc-to-pdf.xpl (xdoc:xdoc-to-pdf)

File: xpl/xdoc-to-pdf.xpl
Convenience pipeline: Combines the xdoc-to-docbook and the docbook-to-pdf steps in one.

Port	Type	Primary?	Description
source	in	yes	The DocBook source with xdoc extensions
result	out	yes	Some XML report about the conversion

Option	Rq?	Default	Description
chapter-id		''	Specific chapter identifier to output (for debugging purposes)
dref-pdf	yes		The name of the resulting PDF file
fop-config		resolve-uri('../../xtpxlib-common/data/fop-default-config.xml', static-base-uri())	Reference to the FOP configuration file
global-resources-directory		()	Images that are tagged as role="global" are searched here (discarding any directory information in the image's URI)
href-parameters		()	Reference to an optional document with parameter settings. See the xtpxlib-common parameters.mod.xsl module for details.
main-font-size		10	Main font size as an integer. Usual values somewhere between 8 and 10.
output-type		'a4'	Output type. Use either a4 or sb (= standard book)
parameter-filters		()	Filter settings for processing the parameters. Format: "name=value|name=value|..."
preliminary-version		false()	If true, adds a prelimiary version marker and output any db:remark elements. If this is set to false, db:remark elements will be suppressed.

4.5 XProc (1.0) pipeline: xdoc-to-xhtml.xpl (xdoc:xdoc-to-xhtml)

File: `xpl/xdoc-to-xhtml.xpl`

Convenience pipeline: Combines the xdoc-to-docbook and the docbook-to-xhtml steps in one.

Port	Type	Primary?	Description
`source`	in	yes	The DocBook source with xdoc extensions
`result`	out	yes	The resulting XHTML

Option	Rq?	Default	Description
`create-header`		`true()`	Whether to create header (title, etc.) information
`href-parameters`		`()`	Reference to an optional document with parameter settings. See the xtpxlib-common parameters.mod.xsl module for details.
`parameter-filters`		`()`	Filter settings for processing the parameters. Format: "name=value|name=value|..."

5 XProc Libraries

The xtpxlib-xdoc component contains the following XProc (1.0) library module:

Module	Description
`xtpxlib-xdoc.mod.xpl`	TBD Generic library

Table 5-1 - Module overview

5.1 XProc (1.0) library: xtpxlib-xdoc.mod.xpl

File: `xplmod/xtpxlib-xdoc.mod/xtpxlib-xdoc.mod.xpl`
TBD Generic library

Prefix	Namespace URI
`xdoc`	`http://www.xtpxlib.nl/ns/xdoc`

5.1.1 Step: xdoc:markdown-to-docbook

Checks for elements xdoc:MARKDOWN. Replaces these with Docbook contents.
Only simple Markdown is supported (e.g. no tables).

Port	Type	Primary?	Description
`source`	in	yes	
`result`	out	yes	

6 DocBook dialect

The `xtpxlib-xdoc` component uses DocBook 5.1 as its source and target vocabulary. However, *for generating output* it does not implement the full standard (which is huge!) but only those elements/attributes that were deemed necessary. This document will explain what is in and what's not.

6.1 Supported root elements

Both the `<book>` and the `<article>` root element are supported. [TBD rephrase] A `<book>` root results in paged output (for, as the name implies, a book. The `<article>` root results in something more memo style (like this).

6.2 Document information

Document information: The only document information elements recognized are (any others are ignored):

```
<info>

  <title> ... main title ... </title>
  <subtitle> ... subtitle ...</subtitle>
  <pubdate> ... publication date ... </pubdate>
  <author>
    <personname> ... author name ...</personname>
  </author>

  <orgname> ... organization ... </orgname>

  <mediaobject role="top-logo">
    <!-- Use either role="top-logo" or no role attribute. -->
    <imageobject>
      <imagedata fileref="..." width="...(opt)" height="...(opt)"/>
    </imageobject>
  </mediaobject>

  <mediaobject role="center-page">
    <imageobject>
      <imagedata fileref="..." width="...(opt)" height="...(opt)"/>
    </imageobject>
  </mediaobject>

</info>
```

All elements are optional.

6.3 Chapter/Section structure

- For books, `<preface>`, `<chapter>`, `<appendix>` and `<sect1>` to `<sect3>` are recognized and handled.
- In articles only `<sect1>` to `<sect3>` are allowed.

6.4 Block constructions

the following block level constructions are recognized and handled:

- **Paragraphs**: Normal `<para>` elements recognize the following role attribute values (multiple, whitespace separated, values allowed):

`@role` value	Description
`break`, `smallbreak`	Inserts an empty line, either full or small height. The contents of the `<para>` element is ignored.
`break-before` `break-after`	Adds extra whitespace before or after the paragraph
`header` `keep-with-next`	Keeps this paragraph with the next one together on a page.

@role value	Description
keep-with-previous	Keeps this paragraph with the previous one together on a page.

Table 6-1

- **Lists**: Both <itemizedlist> and <orderedlist> are allowed.

- **Tables**: Both <table> and <informaltable> are allowed. An example of a formal table above. An informal table below.

Example	of
an	informal table

Add role="nonumber" to a table to stop it from getting a number:

Blurp	Blorb
Example	of
an	unnumbered table

Unnumbered table

Tables are notoriously difficult in that FOP cannot compute column widths automatically. To amand this (a little bit) add colspec/@colwidth information. There is also a mechanism for columns with code (set in a fixed-width font), see "Fixed-width column mechanism" on page 16.

- **Program listings**: For program listings use the <programlisting> element
  The easiest way to handle this turned out to put longer program listings in external files and use an <xi:include parse="text"> construction:
  <programlisting><xi:include href="ref" parse="text"/></programlisting>
  Or use a <![CDATA[construction around the piece of code.

- **Figures**: Both <figure> and <informalfigure> are allowed. Width and height can be set on the image data.

Figure 6-1 - An example of a figure... (this in fixed width)

Add role="nonumber" to a figure to stop it from getting a number.

- **Bridgeheads**: The <bridgehead> element inserts a bridgehead paragraph (bold, underlined and with an empty line before):

This is a bridgehead...

- **Simple lists**: The <simplelist> element inserts a simple list:

An entry
Another entry...

- **Variable lists**: The <variablelist> element inserts a variable list list (also very useful for explaining terms, definitons, etc.):

The first entry
The explanation of the first entry!

The second entry
The explanation of the second entry!

- **Notes and warnings**: The `<note>` element inserts a note and `<warning>` a warning:

  NOTE:
  This is a note! Nulla ac ex urna. Ut auctor odio quis nulla porta bibendum. Proin hendrerit molestie velit sit amet tristique. Vivamus laoreet ligula leo, vitae placerat ipsum porta sed. Morbi blandit ex mauris, eu volutpat tortor mattis eu. Nam et molestie mi. Aliquam erat volutpat. Aenean a imperdiet lectus. Phasellus condimentum dignissim laoreet.

  WARNING:
  This is a warning! Nulla ac ex urna. Ut auctor odio quis nulla porta bibendum. Proin hendrerit molestie velit sit amet tristique. Vivamus laoreet ligula leo, vitae placerat ipsum porta sed. Morbi blandit ex mauris, eu volutpat tortor mattis eu. Nam et molestie mi. Aliquam erat volutpat. Aenean a imperdiet lectus. Phasellus condimentum dignissim laoreet.

  If you add a `<title>` element, the standard title (NOTE/WARNING) will be replaced by its contents.

- **Sidebars**: The `<sidebar>` element inserts sidebar section:

  Title of the sidebar
  Contents of the sidebar. Nulla ac ex urna. Ut auctor odio quis nulla porta bibendum. Proin hendrerit molestie velit sit amet tristique. Vivamus laoreet ligula leo, vitae placerat ipsum porta sed. Morbi blandit ex mauris, eu volutpat tortor mattis eu. Nam et molestie mi. Aliquam erat volutpat. Aenean a imperdiet lectus. Phasellus condimentum dignissim laoreet.

- **Examples**: The `<example>` element inserts an example:

  Lorem ipsum dolor sit amet, consectetur adipiscing elit. Vivamus elementum diam nec nunc elementum, eget dapibus dui malesuada. Aenean facilisis consequat odio, vitae euismod eros tempor nec. Vestibulum cursus tortor tortor, semper euismod sapien sagittis et.
  Example 6-1 - Example of an example

  Add `role="nonumber"` to an example to stop it from getting a number.

6.5 Inline elements

the following inline elements are recognized and handled:

- **`<emphasis>`**: Sets *emphasis*.
  Use **`role="bold"`** or `role="underline"` to set a specific type of emphasis.

- **`<literal>`** or **`<code>`**: Creates a piece of literal, `mono-spaced` text.

- **`<link>`**: Outputs some link (e.g. a web address). This is either the contents of the element or, if not available, the contents of the `xlink:href` attribute.
  Like this or like this http://www.xatapult.nl.

- **`<inlinemediaobject>`**: Inserts an inline image , like this.

- **`<citation>`**: Inserts a citation between square brackets like this: [CITATION].

- **`<command>`**: Use to indicate an exetuble program or a user provided command, like this: *git checkout origin*

- **`<email>`**: Use to indicate an an email address, like this: *info@xatapult.com*
- **`<filename>`**: Use to indicate an a filename, like this: *blabla.xml*
- **`<replaceable>`**: Use to indicate text to be replaced with user or context supplied values, like this: *`add your own stuff here`*
- **`<keycap>`**: Use to indicate a keyboard physical key, like this: Return
- **`<superscript>`, `<subcript>`**: For super- and subscripts, like this: XX^{super} YY$_{sub}$
- **`<userinput>`**: Use to indicate data entered by the user, like this: **`data entered here`**
- **`<tag>`**: Indicates an object from the XML vocabulary. The `class` attribute signifies what:

`@class` value	Result example(s)
`attribute`	`@attribute` `@class`
`attvalue`	`"attribute value"` `"some value for an attribute"`
`emptytag`	`<element/>` `<docbook/>`
`endtag`	`</element>` `</docbook>`
`pi`	`<?processing-instruction x="y"?>`
`comment`	`<!-- Some comment line... -->`
Anything else defaults to `element`	`<element>` `<docbook>`

Table 6-3

- **`<xref>`**: Inserts a cross-reference to the id referenced by `@linkend`
  - Use `role="page-number-only"` to get just a page number.
  - Use `role="simple"` to always get: page #
  - Use `role="text"` to only get the (unquoted) text only in cases where a "…" on page … would normally appear.
  - Use `role="capitalize"` to force the reference string (for chapters/appendices/pages/figures/tables/…) to start with an upper-case character (so you can be sure a sentence that starts with an `<xref>` always starts with a capital).

  Otherwise it depends on what is pointed to:

Target	Result/Examples
To anything that holds an `xreflabel` attribute	"paragraph with xreflabel attribute" on page 12
To a chapter or appendix	chapter # or appendix #
To a section	"Document information" on page 12
To a table (with a number), like this one	table 6-4
To a figure (with a number)	figure 6-1
To an example (with a number)	example 6-1
To anything else	First paragraph: page 12 Unnumbered table: page 13

Table 6-4 - Examples of `<xref>` usage

6.6 Other constructs

- **To-be-done marker**: Start a to-be-done marker with **`[TBD`** and end it with **`]`**. For instance: [TBD this needs to be done...]

6.7 Fixed-width column mechanism

FOP (in the current version, 3Q19) cannot compute the column-widths automatically. It divides the space and you can set a fixed column-width (with `colspec/@colwidth`). For the case that a column contains code stuff (text in a fixed-width font) *and* you want the column-width to be dependent on the text in such a column, there is a (unfortunately a bit complicated) mechanism for this.

The fixed-width column mechanism consists of two parts:

Dynamically compute the column width

This part is optional.

Add a `role` attribute to the `<colspec>` element with, as one of the roles, `code-width-cm:min-max`, where `min` and `max` are (positive) doubles. For instance `<colspec role="code-width-cm:1.2-4">`. `min` and `max` are the minimum and maximum column-widths, expressed in cm.

The PDF conversion will now look in all the contents of this particular column for entries `<code role="code-width-limited">`. Based on the length of these entries it computes an optimal column-width, but always between `min` and `max`.

Output code width-limited

If a table entry contains contents in a `<code role="code-width-limited">` element, it tries to make it fit within the available column-width. If necessary the line is split to prevent overflowing of table cell contents.

This is (currently) not completely fool-proof: if the contents contains whitespace or hyphens, it is assumed to line-break correctly by itself. That, of course, does not guarantee correct results. So it may need a little experimenting before things look right.

A column that contains `<code role="code-width-limited">` contents *must* have a column width set *in cm* (either directly with `<colspec colwidth="…cm">` or by the dynamic mechanism described above).