
DocBook with Eclipse

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Abstract

This document explains how to quickly start working with DocBook using your Eclipse Web Tools Platform (WTP) environment. WTP is required only for the XSLT features it provides. This article covers Mac, Linux, and Windows.

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1. Introduction

For this version of the article, I'm going to assume you have some reason to learn DocBook rather than try to provide a motivation. But just in case you stumbled on this document expecting an office suite replacement for products such as MS-Office, OpenOffice or LibreOffice, stop now. DocBook is not a WYSIWYG product. It has a considerable learning curve and should only be used by propeller-heads.

But perhaps you're already interested in DocBook but are wondering why use Eclipse to produce DocBook documents. I found Eclipse helpful for DocBook usage for the following reasons.

- Eclipse has built-in support for stylesheet transformations. You have to make sure you download the right edition (the J2EE edition is a safe bet).
- Eclipse has support for developing and running Ant scripts. You can get by without script support for your first few toy documents. But as you learn about the various parameters supported by the output configuration, providing the parameters via a command line becomes unwieldy.
- Eclipse has spell checking support within its XML editors.

2. Getting Files

DocBook is basically a set of stylesheets that convert our content-centric XML source files into a desired format. So acquiring DocBook amounts to acquiring these stylesheets.

2.1. DocBook Stylesheets

The DocBook stylesheets themselves are located at the following link.

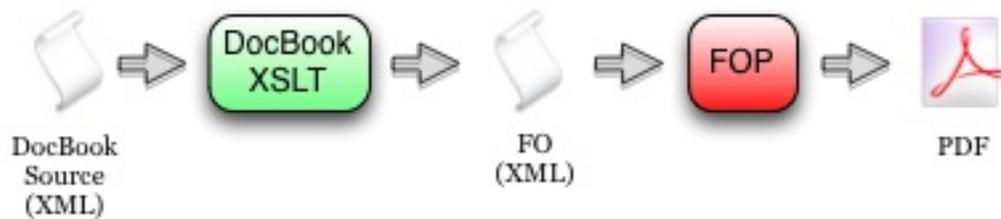
<http://sourceforge.net/projects/docbook/files/docbook-xsl-ns/>

Download the latest version in an archive format suitable for your OS.

2.2. Formatting Objects (FO)

If you want to generate PDF files, then there are a few more downloads. DocBook doesn't generate PDF files directly. Rather, it generates an XML document structured as *Formatting Objects*, or FO. A separate processor developed by an Apache project called *Formatting Object Processor* (FOP) takes the FO output from DocBook and produces a PDF file.

Figure 1. Generating PDF from DocBook



FOP may be downloaded from the Apache FOP project.

<http://xmlgraphics.apache.org/fop/download.html>

Choose the binary download. You'll be asked to choose a mirror. On the mirror site, choose the binaries folder and download the latest stable distribution in the archive format supported by your OS.

2.3. OFFO Hyphenation

FOP uses a hyphenation toolkit that is part of the OFFO project. The binary is downloaded from SourceForge.

<http://sourceforge.net/projects/offo/>

Download the file `offo-hyphenation-binary_v2.0.zip`.

3. Installing DocBook Files

Installing DocBook files pretty much amounts to unarchiving them. But it pays to plan things up front to ease the upgrade process when new versions of the stylesheets are released. The schemes described in this article differ slightly by OS.

Where you place files is somewhat arbitrary. This section is simply where I place them. Feel free to override these guidelines with any preference you may have.

3.1. Mac OS X

I configure the DocBook related stylesheets in `/usr/local/share`. One must have admin rights to set up here. If you don't have admin privileges, you may follow these steps substituting a location under your user directory.

1. Expand the DocBook stylesheets into `/usr/local/share`. The name of the directory created by expanding the archive should contain the version number of the stylesheets.

2. Create a soft link named `docbook` that points to the directory just created by expanding the archive.

```
ln -s docbook-xml-ns-1.77.1 docbook
```

Afterward, your directory should look similar to this.

```
/usr/local/share$ ls -l
total 8
lrwxr-xr-x  1 root  wheel    21 Jun  6 21:18 docbook@ -> docbook-xsl-ns-1.77.1
drwxr-xr-x@ 46 root  wheel   1564 Jun  6 21:17 docbook-xsl-ns-1.76.1/
drwxr-xr-x@ 51 root  wheel   1734 Jun  4 15:09 docbook-xsl-ns-1.77.1/
drwxr-xr-x   7 root  wheel    238 Jun  7 18:22 java/
/usr/local/share$
```

3. Expand the FOP and OFFO archives into the `/usr/local/share/java` directory. For the FOP directory, create a soft link as was done in the previous step. This is not necessary for the OFFO distribution since we are simply poaching its library, not referencing it. The `/usr/local/share/java` directory should look similar to this.

```
/usr/local/share/java$ ls -l
total 16
lrwxr-xr-x  1 root  wheel    7 Jun  7 18:22 fop@ -> fop-1.0
drwxr-xr-x@ 17 root  wheel   578 May 10 22:04 fop-1.0/
drwxrwxr-x  10 root  wheel   340 Oct 29 2010 offo-hyphenation-binary/
lrwxr-xr-x  1 root  wheel   13 Jun  6 20:10 xalan@ -> xalan-j_2_7_1
drwxr-xr-x@ 12 root  wheel   408 Jun  6 19:29 xalan-j_2_7_1/
/usr/local/share/java$
```

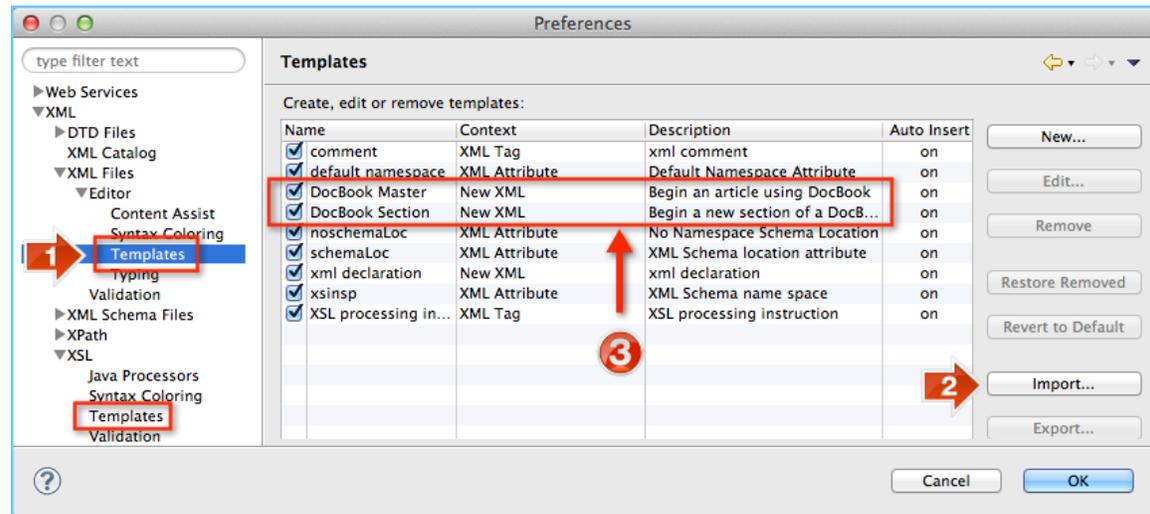
4. Copy `fop-hyph.jar` from the OFFO installation to the `fop/lib` directory. (Or you can simply hard link to it.)

This completes the file system set-up for Mac OS X.

4. New Eclipse Workspace

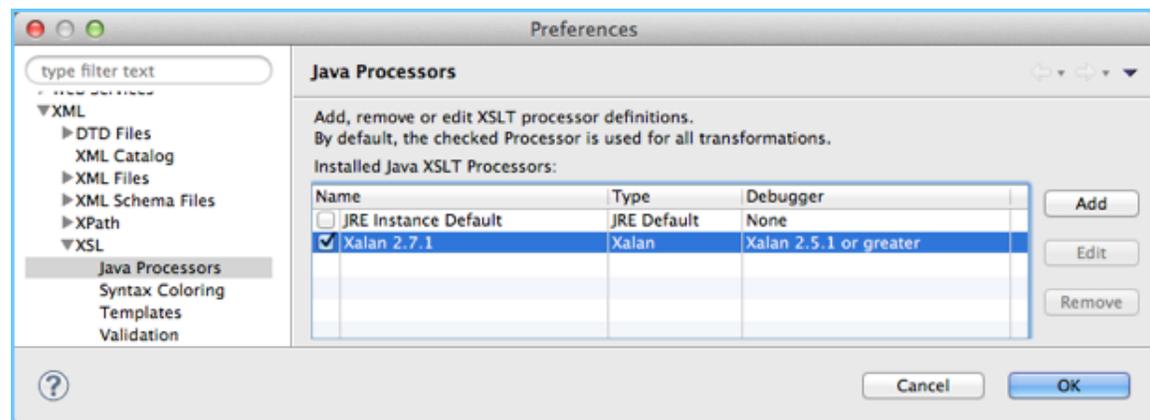
To configure a new Eclipse workspace for DocBook projects, install the XML/XSL templates from the Starter Kit to quicken the creation of new source files. These are located in the `templates` folder of the Starter Kit.

1. Import the DocBook Starter Kit as a plain Eclipse project or simply have the files somewhere handy.
2. Open Windows → Preferences of your Eclipse workspace. As shown in Figure 2, there are two templates to import.
3. First choose XML → XML Files → Editor → Templates and import `templates/xml/docbook-new.xml` from the Starter Kit. This will create two new creation templates for XML files named *DocBook Master* and *DocBook Section* as shown in Figure 2.
4. Then choose XML → XSL → Templates and import `templates/xsl/customization-pdf.xml` from the Starter Kit. This will create a single creation template for XSL files named *DocBook Customization*.

Figure 2. Importing XML/XSL Editor Templates

- To use Xalan for XSL processing run configurations, navigate to XML → XSL → Java Processors as shown in Figure 3 and choose Xalan from the list.

This is only meaningful if you intend to execute the DocBook stylesheets directly from an Eclipse run configuration. If you invoke the stylesheets from an Ant script as described in the next section, the Xalan processor is specified in the Ant script.

Figure 3. Choose Xalan for XSL Processing

5. Configuring a New DocBook Project

We need to configure our DocBook project dependencies independent of where we install them on our file system. Since we usually expect to source-control our DocBook source and build-scripts, we need to organize our Eclipse workspace so that file system and OS dependencies don't creep into source-controlled artifacts. This is accomplished on most platforms with soft links and build links.

- Create a new project to hold the DocBook source. The type can be a simple project.

2. Make the DocBook and FOP installations *appear* to reside in our project under a directory named `softlinks`. Whether copies of those directories need to reside there depends on the OS platform. Linux and OS X support directory soft links. Windows does not. The Eclipse platform itself supports links for files, but not directories.

Linux and OS X users can use the following technique.

- a. Open a terminal to the `softlinks` directory.
- b. Run the following command.

```
ln -s {path to DocBook installation} docbook
```

- c. Run a similar command for the FOP folder.

```
ln -s {path to FOP installation} fop
```

Windows users must actually copy these folders into their Eclipse workspace under the `softlinks` directory. This is not a very attractive solution. I wasn't able to make the any of the following work in its place.

- *Windows Shortcuts* - On a Windows desktop or file explorer, a Windows shortcut looks like the real thing. But it's actually a file with an `.inf` extension. In the Eclipse workspace, we get `docbook.inf` and `fop.inf`.
 - *Eclipse Links* - Eclipse provides a linking mechanism to refer to files and directories outside the workspace. Unfortunately, this linking information is stored in the `.project` metadata file that Eclipse uses for a project, not in workspace metadata. Thus it would also become source controlled and then imposed on others.
3. Copy the build folder of the Starter Kit into your new project. This includes a `build-core.xml` that defines source dependencies and sets a few global properties. The other files reference `build-core.xml` and generate specific output formats.
 4. Create the following folders in your new project.
 - `images` - used for storing image files.
 - `out` - stores generated output for each of the output types.
 - `src` - the source for your document content.
 5. In most cases, you will want to create a subdirectory of `out` for each output type. These directories contain files that control the presentation of your documents. (The `src` directory determines the content). If you generate PDF output, a `pdf` folder would contain the customization layer. If you generate HTML or EPUB output, the `html` or `epub` folder would contain the your CSS files.

You're ready to start writing your DocBook source!

6. References

- [1] DocBook: The Definitive Guide, April, 2012. Norman Walsh. Online: <http://docbook.org/tdg51/en/html/>
- [2] DocBook XSL: The Complete Guide, Fourth Edition, September, 2007. Bob Stayton. Online: <http://www.sagehill.net/docbookxsl/index.html>