

# Apache FOP: Configuration

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## Table of contents

1 Configuration File Basics.....	2
1.1 Making Configuration Available to FOP.....	2
2 Summary of the General Configuration Options.....	2
3 Renderer configuration.....	4
3.1 Special Settings for the PDF Renderer.....	5
3.2 Special Settings for the PostScript Renderer.....	5

## 1. Configuration File Basics

The FOP configuration file is an XML file containing a variety of settings that are useful for controlling FOP's behavior, and for helping it find resources that you wish it to use.

The easiest way to get started using a FOP configuration file is to copy the sample found at `{fop-dir}/conf/fop.xconf` to a location of your choice, and then to edit it according to your needs. It contains templates for the various configuration options, most of which are commented out. Remove the comments and change the settings for entries that you wish to use. Be sure to follow any instructions, including comments which specify the value range. Also, since the configuration file is XML, be sure to keep it well-formed.

### 1.1. Making Configuration Available to FOP

After creating your configuration file, you must tell FOP how to find it:

- If running FOP from the command-line, see the "-c" command-line option in [Running FOP](#).
- If running FOP as an embedded application, see [Embedding, Using a Configuration File](#).

See [Setting the Configuration Programmatically](#) for instructions on how to do so in an embedded environment.

## 2. Summary of the General Configuration Options

Element	Data Type (for the value)	Default Value
base	URL or directory	Specifies the base URL based on which relative URL will be resolved.
font-base	URL or directory	Specifies the base URL based on which relative font URLs will be resolved. If not specified defaults to the base URL above.
hyphenation-base	URL or directory	Specifies the base URL based on which relative URLs to hyphenation pattern files will be resolved. If not specified, support for user-supplied hyphenation patterns remains disabled.

source-resolution	Integer, dpi	Resolution in dpi (dots per inch) which is used internally to determine the pixel size for SVG images and bitmap images without resolution information.
target-resolution	Integer, dpi	Resolution in dpi (dots per inch) used to specify the output resolution for bitmap images generated by bitmap renderers (such as the TIFF renderer) and by bitmaps generated by Apache Batik for filter effects and such.
strict-validation	Boolean (true, false)	Setting this option to 'false' causes FOP to be more forgiving about XSL-FO validity, for example, you're allowed to specify a border on a region-body which is supported by some FO implementations but is non-standard. Note that such a border would currently have no effect in Apache FOP.
break-indent-inheritance	Boolean (true, false)	Setting this option to 'true' causes FOP to use an alternative rule set to determine text indents specified through margins, start-indent and end-indent. Many commercial FO implementations have chosen to break the XSL specification in this aspect. This option tries to mimic their behaviour. Please note that Apache FOP may still not behave exactly like those implementations either because FOP has not fully matched the desired behaviour and because the behaviour among the commercial implementations varies. The default for this option (i.e. false) is to behave exactly like the

		specification describes.
default-page-settings	n/a	Specifies the default width and height of a page if "auto" is specified for either or both values. Use "height" and "width" attributes on the default-page-settings element to specify the two values.
renderers	(see text below)	Contains the configuration for each renderer. See below.

This is an excerpt from the example configuration file coming with FOP:

```
<fop version="1.0">

  <!-- Base URL for resolving relative URLs -->
  <base>./</base>

  <!-- Font Base URL for resolving relative font URLs -->
  <font-base>./</font-base>

  <!-- Source resolution in dpi (dots/pixels per inch) for determining the
  size of pixels in SVG and bitmap images, default: 72dpi -->
  <source-resolution>72</source-resolution>
  <!-- Target resolution in dpi (dots/pixels per inch) for specifying the
  target resolution for generated bitmaps, default: 72dpi -->
  <target-resolution>72</target-resolution>

  <!-- default page-height and page-width, in case
  value is specified as auto -->
  <default-page-settings height="11in" width="8.26in"/>

  <!-- etc. etc..... -->
</fop>
```

### 3. Renderer configuration

Each Renderer has its own configuration section which is identified by the MIME type the Renderer is written for, ex. "application/pdf" for the PDF Renderer.

The configuration for the PDF Renderer could look like this:

```
<renderers>
  <renderer mime="application/pdf">
    <filterList>
      <!-- provides compression using zlib flate (default is on) -->
      <value>flate</value>
```

```
</filterList>
<font>
  <font metrics-url="arial.xml" kerning="yes" embed-url="arial.ttf">
    <font-triplet name="Arial" style="normal" weight="normal"/>
    <font-triplet name="ArialMT" style="normal" weight="normal"/>
  </font>
  <font metrics-url="arialb.xml" kerning="yes" embed-url="arialb.ttf">
    <font-triplet name="Arial" style="normal" weight="bold"/>
    <font-triplet name="ArialMT" style="normal" weight="bold"/>
  </font>
</font>
</render>

<render mime="application/postscript">
<!-- etc. etc..... -->
```

The details on the font configuration can be found on the separate [Fonts](#) page. Note especially the section entitled [Register Fonts with FOP](#).

### 3.1. Special Settings for the PDF Renderer

The configuration element for the PDF renderer contains two elements. One is for the font configuration (please follow the link above) and one is for the "filter list". The filter list controls how the individual objects in a PDF file are encoded. By default, all objects get "flate" encoded (i.e. simply compressed with the same algorithm that is also used in ZIP files). Most users don't need to change that setting. For debugging purposes, it may be desired not to compress the internal objects at all so the generated PDF commands can be read. In that case, you can simply use the following filter list. The second filter list (type="image") ensures that all images still get compressed but also ASCII-85 encoded so the produced PDF file is still easily readable in a text editor.

```
<render mime="application/pdf">
  <filterList>
    <value>null</value>
  </filterList>
  <filterList type="image">
    <value>flate</value>
    <value>ascii-85</value>
  </filterList>

  <font>...
</render>
```

### 3.2. Special Settings for the PostScript Renderer

Besides the normal font configuration (the same "fonts" element as for the PDF renderer) the PostScript renderer has an additional setting to force landscape pages to be rotated to fit on a

page inserted into the printer in portrait mode. Set the value to "true" to activate this feature. The default is "false". Example:

```
<render mime="application/postscript">
  <auto-rotate-landscape>true</auto-rotate-landscape>

  <font>
    <font metrics-url="arial.xml" kerning="yes" embed-url="arial.ttf">
      <font-triplet name="Arial" style="normal" weight="normal"/>
      <font-triplet name="ArialMT" style="normal" weight="normal"/>
    </font>
    <font metrics-url="arialb.xml" kerning="yes" embed-url="arialb.ttf">
      <font-triplet name="Arial" style="normal" weight="bold"/>
      <font-triplet name="ArialMT" style="normal" weight="bold"/>
    </font>
  </font>
</render>
```