

# Fonts

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## 1 Status

FOP (building PDF files) normally supports only the base 14 font package defined in the Adobe PDF specification. That includes the following fonts: Helvetica, Times, Courier, Symbol and ZapfDingbats.

Font support in FOP can be extended by the addition of font metric files (written in XML) created from Adobe Type 1 fonts and TrueType fonts. No other font types (Type 3, etc.) are supported at this time.

### Note:

The font is simply embedded into the PDF file, it is not converted.

## 2 Adding additional Type 1 fonts

As mentioned above you need an XML file containing font metrics to be able to use an additional font. FOP contains a tool that can generate such a font metrics file from a PFM file, which normally comes with the font file.

### 2.1 Generating a font metrics file

Run the class `org.apache.fop.fonts.apps.PFMReader` to generate the XML file.

Windows:

```
java -cp build\fop.jar;lib\avalon-framework.jar;lib\xml-apis.jar;lib\xercesImpl.jar;1
```

Unix:

```
java -cp build/fop.jar:lib/avalon-framework.jar:lib/xml-apis.jar:lib/xercesImpl.jar:1
```

**Note:**

The classpath in the above example has been simplified for readability. You will have to adjust the classpath to the names of the actual JAR files in the lib directory. avalon-framework.jar is necessary only for versions 0.20.5 or later. xml-apis.jar, xercesImpl.jar and xalan.jar are not necessary for JDK version 1.4 or later.

**Note:**

The tool will construct some values (FontBBox, StemV and ItalicAngle) based on assumptions and calculations which are only an approximation to the real values. FontBBox and Italic Angle can be found in the human-readable part of the PFB file or in the AFM file. The PFMReader tool does not yet interpret PFB or AFM files, so if you want to be correct, you may have to adjust the values in the XML file manually. The constructed values however appear to have no visible influence.

## 2.2 Register the fonts within FOP

Edit conf/userconfig.xml and add entries for the font if the fonts section, ie:

```
<font metrics-file="FTL_____.xml" kerning="yes" embed-file="C:\myfonts\FTL_____.pfb">
  <font-triplet name="FrutigerLight" style="normal" weight="normal">
</font>
```

**Note:**

Starting from FOP version 0.20.5 you can use URLs for the paths to the font files. Relative URLs are resolved relative to the fontBaseDir property (or baseDir) if available.

**Note:**

Make sure you specify the PFB file in the embed-file attribute and not the PFM you used to generate the XML font metrics file.

**Note:**

If you do not want the font embedded in the PDF then remove the "embed-file" attribute. The PDF will then contain text using the font with the font metrics and to view it properly the font will need to be installed where it is being viewed.

**Note:**

Cocoon users will need to setup the config, see FOPSerializer for more information.

## 3 Adding additional TrueType

Adding TrueType fonts is almost identical to the process of adding Type 1 fonts. The main difference is in the first step.

### 3.1 Generating a font metrics file

As mentioned above you need an XML file containing font metrics to be able to use an additional font. FOP contains a tool that can generate such a font metrics file from your TrueType font file.

Create metrics for the fontfile (we assume the file has the name cmr10.ttf and exists in c:\myfonts\):

```
java -cp build\fop.jar;lib\avalon-framework.jar;lib\xml-apis.jar;lib\xercesImpl.jar;l
```

### 3.2 TrueType collections

TrueType collections (.ttc files) contains more than one font. To create metrics for a ttc file you must specify the font in the collection with the -ttcname option to TTFReader.

To get a list of the fonts in a collection, just start the TTFReader as if it were a normal TrueType file (without the -ttcname option). It will then display all the font names and exit with an Exception...

Example on generating metrics for a .ttc file:

```
java -cp build\fop.jar;lib\avalon-framework.jar;lib\xml-apis.jar;lib\xercesImpl.jar;l
```

### 3.3 Register the fonts within FOP

Similar to Type 1 fonts.

```
<font metrics-file="cyberbit.xml" kerning="yes" embed-file="C:\WINNT\Fonts\Cyberbit.t
  <font-triplet name="Cyberbit" style="normal" weight="normal">
</font>
```

## 4 Embedding fonts

Font embedding is enabled in the userconfig.xml file and controlled over the embed-file attribute. If you don't specify the embed-file attribute the fonts doesn't get embedded but only referenced.

**Note:**

Remember to start fop with -c conf/userconfig.xml on the command line.