Adding Fonts to FOP

When building PDF files, FOP 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.

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.

Generating a font metrics file

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

```
java org.apache.fop.fonts.apps.PFMReader pfm-file xml-file
```

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. The PFMReader tool does not yet interpret PFB 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.

Register the fonts within FOP

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

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

Adding additional TrueType fonts

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

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'll use MS Gothic as an example:

```
java org.apache.fop.fonts.apps.TTFReader C:\WINNT\Fonts\msgothic.ttf
msgothic.xml
```

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 org.apache.fop.fonts.apps.TTFReader -ttcname "MS Mincho" msmincho.ttc
msminch.xml
```

Register the fonts within FOP

Same as for [Type 1 fonts](.).

Embedding fonts

Font embedding is enabled in the userconfig.xml file. Start Fop with -c userconfig.xml

Example embedding MSGothic

This example will use the Microsoft Gothic TrueType font. This is the font used to render this examples given in the last section of this file. If you don't have it installed, you can download an installer at ftp://ftp.cc.monash.edu.au/pub/nihongo/ie3lpkja.exe .

Setup your classpath to run FOP:

```
  C:\Fop-0.18.1> set
 CLASSPATH=fop.jar;lib\xerces-1.2.3.jar;lib\xalan-2.0.0.jar;lib\w3c.jar
```

Create the metrics file:

```
  C:\Fop-0.18.1> java org.apache.fop.fonts.apps.TTFReader
 c:\WINNT\Fonts\msgothic.ttf msgothic.xml
 TTF Reader v1.1.1
 Reading /home/camk/cjkv/msgothic.ttf...
 Number of glyphs in font: 13104
 Postscript format 3
 Creating xml font file...
 Creating CID encoded metrics
 Writing xml font file msgothic.xml...
 This font contains no embedding license restrictions
```

Edit the msgothic.xml file and set the `font-name` to "MSGothic".

Edit conf/userconfig.xml and add the following to the <fonts> section:

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

Now you can use MSGothic in your .fo files by setting font-family="MSGothic". You'll need to start FOP specifying the config file as in this example:

```
 java -jar fop.jar -c conf/userconfig.xml -fo myfo.fo -pdf mypdf.pdf
```

Examples from JMDict Japanese glossary:

Japanese (kanji or kanadzukai)	English	German
うん	"yeah" or "uh huh"	
アウタースペース	outer space	
スペースクラフト	spacecraft	
スペースシャトル	space shuttle	
著わす	"to write", "to publish"	veröffentlichen
電子出版	electronic publishing	
五輪	the Olympics	Olympische Spiele
空港	airport	Flughafen

Japanese (kanji or kanadzukai)	English	German
チューリッヒ	Zurich	Zürich
コロラド	Colorado	
コロラドスプリングス	Colorado Springs	