

Using TrueType fonts with teTeX and dvips

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Abstract

This document describes how I have managed to use TrueType fonts with teTeX 1.0 under SuSE Linux 6.2. The way described in “Using TrueType fonts with T_EX (L^AT_EX) and pdfT_EX (pdfL^AT_EX)” [Rak] did work with MiK_TE_X, but I did not manage to use the fonts with teTeX.

Strictly speaking this document doesn't describe how to use TrueType fonts with teTeX but how to convert TrueType fonts to PostScript Type 1 format which can be used with T_EX.

If I have made any errors or if you have a suggestion please mail it to me.

I don't know if the shown conversion violates any copyrights.

This document can be downloaded from <ftp://ftp.dante.de/tex-archive/info/TrueType/> (PostScript, pdf and html available).

Contents

1	Preparing the conversion	1
2	Generating the Postscript Type 1 fonts	2
3	Generating the T_EX related font files	3
4	Move the files to the right places	3
5	Make dvips find the new font	4
6	Usage of the new font	4
A	To do	5
B	References	5

1 Preparing the conversion

As an example I will show how to convert the font “VAG Rounded BT” which is part of Microsoft Windows 98 (tt0756m_.TTF).

First copy the fonts you want to convert into a temporary directory (e.g. a Windows disk is mounted on /dos/c):

```
$ mkdir ~/ttf
$ cp /dos/c/windows/fonts/tt0756m_.TTF ~/ttf
```

Then rename the files to a name conforming the fontname scheme by K. Berry [Ber99]. In this case the supplier is “Bitstream” (Filename `b*****.ttf`)¹. The Shortcut for the typeface is “vr” (Filename `*vr*****.ttf`) taken from [Ber99]. The weight is “regular” (Filename `***r****.ttf`). The variant is omitted because itself and the width are normal. The encoding is set to “8a” which means Adobe standard encoding² (Filename `****8a**.ttf`). Because the width is standard and the font is linearly scaled, these parts of the filename are omitted. Finally the filename results in `bvrr8a.ttf`. Move the original file to this filename:

```
$ mv tt0756m_.TTF bvrr8a.ttf
```

A more detailed description on the naming conventions can be found in [Ber99].

2 Generating the Postscript Type 1 fonts

To convert the TrueType font to Postscript Type 1 format I used the program `ttf2pt1` by Andrew Weeks et al. (<http://www.netspace.net.au/~mheath/ttf2pt1/>). Generate the font files `bvrr8a.afm`, `bvrr8a.pfa`, and `bvrr8a.pfb` by using these commands:

```
$ ttf2pt1 -e bvrr8a.ttf bvrr8a
$ ttf2pt1 -b bvrr8a.ttf bvrr8a
```

In one of the last lines of output the fontname is noted: “VAGRound-edBT_Regular”. Note the name on a sheet of paper—You will need it later on.

The script `ttf2type1` does these conversion automatically for all files with the extension `ttf` in the present working directory. To get the font names you should start it as follows:

```
$ ./ttf2type1 2>&1 | grep FontName
```

¹You can find this out by viewing the file with `less`.

²Maybe the TrueType font is in Windows encoding, but the approach using “8a” worked fine, so I won’t change it.

3 Generating the T_EX related font files

Use “fontinst” by Alan Jeffrey and Rowland McDonnell (<ftp://ftp.tex.ac.uk/tex-archive/fonts/utilities/fontinst>) to generate the files that T_EX needs to use the fonts:

```
$ tex fontinst.sty
* \latinfamily{bvr}{ } \bye
```

If you use fonts with different variants you have to append the letter of the variant to the family name of the font (E.g. VAGRoundedBT_Condensed would be bvr_c). Now use `pltotf` on every file with the extension `.pl` and `vptovf` on all files with the extension `.vpl`:

```
$ for a in *.pl; do pltotf $a; done
$ for a in *.vpl; do vptovf $a; done
```

Now you may delete all files that are not used anymore:

```
$ rm *.pl *.vpl *.mtx
```

In the manual to the fontinst package there is better description.

4 Move the files to the right places

Now all files have to be moved to a position where T_EX can find them. I suggest to put them in the LOCALTEXMF tree. Where this tree is located can be found in the file `texmf.cnf` (e.g. `/etc/texmf/texmf.cnf` with SuSE 6.2 and teT_EX 1.0). On my computer the LOCALTEXMF tree starts at `/usr/local/share/texmf`.

Every extension is installed in an own directory tree which has this structure:

```
LOCALTEXMF/fonts/ < extension > / < supplier > / < fontname/
```

In this case:

```
/usr/local/share/texmf/fonts/ < extension > /bitstream/vagrounded/
```

The extensions are: `tfm`, `vf`, `pfa`, `pfb`, `afm`, and `ttf`. Copy the files by typing:

```
$ for a in tfm vf pfa pfb afm ttf; do
> mkdirhier /usr/local/share/texmf/fonts/$a/bitstream/vagrounded;
> mv *.$a /usr/local/share/texmf/fonts/$a/bitstream/vagrounded;
> done
```

Move the `*.fd` files to a directory `LOCALTEXMF/tex/latex/psnfss/`:

```
$ mkdirhier /usr/local/share/texmf/tex/latex
$ mv *.fd /usr/local/share/texmf/tex/latex/psnfss/
```

5 Make dvips find the new font

Create the file `LOCALTEXMF/dvips/config/config.vagrounded` with these contents:

```
o
p +vagrounded.map
```

Create the file `LOCALTEXMF/dvips/config/vagrounded.map` with these contents *in one single line*:

```
bvrr8r VAGRoundedBT_Regular
      "TeXBase1Encoding ReEncodeFont" <8r.enc <bvrr8a.pfb
```

The first item is the filename of the TrueType font with “8r” instead of “8a”. The second item is the font name you held in mind, hopefully. The next items are the same all times. The last one is the filename of the TrueType font with the extension `.pfb`.

Finally type

```
$ texhash
```

to update the \TeX file database.

6 Usage of the new font

To use the new font you simple have to insert

```
\renewcommand{\rmdefault}{bvr}\rmfamily
```

into you \TeX sourcecode. For example `sample.tex`

```
\documentclass{article}
\begin{document}
\renewcommand{\rmdefault}{bvr}\rmfamily
Hello, I am VAG Rounded BT
\end{document}
```

It is more elegant to create an new style switches to your new font.

You also have to tell dvips that it should use the font:

```
$ latex sample
$ dvips -Pvagrounded sample
```

This should produce the PostScript file `sample.ps` which looks like figure 1.

Hello, I am VAG Rounded BT

Figure 1: Sample of the font VAGRounded BT

A To do

Yet, I have not managed to generate slanted versions of TrueType fonts that don't have slanted (oblique) series. Please help me!

B References

- [Ber99] K. Berry. Fontname, March 1999. <ftp://ftp.dante.de/tex-archive/info/fontname/>.
- [Rak] Damir Rakityansky. Using TrueType with TeX (LaTeX) and pdf-TeX (pdfLaTeX). <http://www.radamir.com/tex/ttf-tex.htm>.