

Hentzenwerke Whitepaper Series

Installing True Type Fonts on Linux

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Linux fonts are... a work in progress. That's a nice way of saying that they've got a ways to go to meet True Type fonts. And by themselves, they're not very interesting – they need to be displayed, and, in Linux, that means in X. You can make fonts accessible by X in a couple of different ways. This paper describes one quick mechanism relying on xfs, the "X font server", which is included in Xfree86 4.0 and later.

1. Preface

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1.2 Revisions

1.2.1 History

Version	Date	Synopsis	Author
1.0.0	2003/12/14	Original	WH

1.2.2 New version

The newest version of this document will be found at www.hentzenwerke.com.

1.2.3 Feedback and corrections

If you have questions, comments, or corrections about this document, please feel free to email me at 'books@hentzenwerke.com'. I also welcome suggestions for passages you find unclear.

1.3 References and acknowledgments

See the TLDP writeup at <http://tldp.org/HOWTO/Font-HOWTO/xfonts.html> and another writeup using RPM at <http://corefonts.sourceforge.net/>.

1.4 Disclaimer

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Before making any changes to your system, ensure that you have backups and other resources to restore the system to its state before making those changes.

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1.5 Prerequisites

This document was written using Fedora Core 1 and assumes a beginner's familiarity with use of Linux via the GUI and the Command Window. You'll also need access to True Type fonts on a Windows machine of yours.

2. Copy fonts to your Linux machine.

An oft-suggested directory is `/usr/local/fonts/ttf`. Note that if you're copying fonts from a Windows machine, the filenames may be in mixed case. Don't worry about it; when you "install" them into X, the file names will be handled appropriately.

3. Tell X about your fonts

In the last step, when I said "install", I didn't mean it in the usual, Windows-y sense of the word (running a Windows Installer routine that throws files all over your C drive and modifies a bunch of Registry entries.) Rather, I just mean that you need to let X know about your fonts. You do this by running a couple of programs that create or update files that contain font information that X uses.

In a terminal window, run the following commands:

```
cd /usr/local/fonts/ttf
ttmkfdir > fonts.scale
```

`mkfontdir`

If you view the contents of the directory now (with `ls -al`), you should now see two new files among the True Type fonts that you had copied there in Step 1: "fonts.scale" and "fonts.dir". These files simply contain a list with the full font names for each True Type font.

`ttmkfdir` creates `fonts.scale`. This lists the scalable fonts in the directory. The first line in the file identifies how many fonts are in the file.

`mkfontdir` reads the font files and creates `fonts.dir`. X server and font server use `fonts.dir` to find font files. The first line is the number of fonts in the file; the rest of the lines are the fonts themselves.

As an aside, the file `fonts.alias` is used to map new names to existing fonts. Search the Web on more.

Here is an example of both `fonts.scale` and `fonts.dir`. Note that various fonts have differing cases.

```
26
Ocr-a.ttf -monotype-OCR_A-medium-r-normal--0-0-0-0-p-0-ascii-0
Ocr-a.ttf -monotype-OCR_A-medium-r-normal--0-0-0-0-p-0-iso10646-1
Ocrbmsc.ttf -altsys-OCR_B_Music_Regular-medium-r-normal--0-0-0-0-p-0-ascii-0
Ocrbmsc.ttf -altsys-OCR_B_Music_Regular-medium-r-normal--0-0-0-0-p-0-iso10646-1
OCRABOOK.TTF -altsys-OCR_A_Book_Regular-medium-r-normal--0-0-0-0-p-0-iso10646-1
<more>
UPCTALL.TTF -altsys-Upc_Tall_Regular-medium-r-normal--0-0-0-0-p-0-iso10646-1
UPCTALL.TTF -altsys-Upc_Tall_Regular-medium-r-normal--0-0-0-0-p-0-microsoft-symbol
```

4. Modify the xfs config file

The X font server needs to know where to look for fonts. It looks in its configuration file for a list of directories that contain fonts. The config file is `/etc/X11/fs/config` in RedHat (and `/etc/X11/xfs/config` in Debian.)

There is a line in the config file that looks something like this:

```
# where to look for fonts
#
catalogue = /usr/X11R6/lib/X11/fonts/misc,
            /usr/X11R6/lib/X11/fonts/TTF,
            /usr/share/fonts/default/Type1
```

You can use the `chkfontpath` utility in Red Hat if it's on your system. Another way is to manually edit the file, so that the new line looks like this:

```
catalogue = /usr/X11R6/lib/X11/fonts/misc,
            /usr/X11R6/lib/X11/fonts/TTF,
            /usr/share/fonts/default/Type1,
            /usr/local/fonts/ttf
```

Note that there is a comma separating the lines ending in `Type1` and in `ttf`, since those are separate directories, and that there is not a comma following the name of the `ttf` directory.

5. Reload the xfs config

In order to make sure that `xfs` knows about the changes to its config file, reload the config file with the following command:

```
/etc/init.d/xfs reload
```

You should get a response that looks like this:

```
Reloading xfs:          [ OK ]
```

6. Restart your X-session

Finally, restart X. You can either log off and log back in, or use `Ctrl-Alt-Backspace` to do so.

7. Check to see if your fonts are really installed

In a terminal window, run the command

`xlsfonts`

The list of installed fonts will scroll by and can be rather unreadable. You can use `grep` in combination with `xlsfonts` to winnow down the list to a certain list of names. For example, to list just the fonts that begin with the letter 'h', run the command

```
xlsfonts | grep h
```

And you'll see just those that begin with 'h'.

The `xfontsel` utility provides a point and click interface for selecting fonts. Run the command

```
xfontsel
```

and you should see a display similar to that shown in Figure 1.

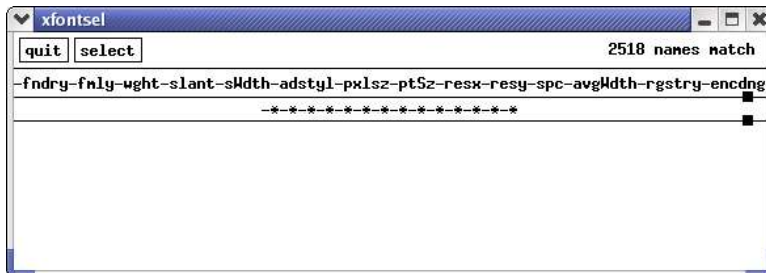


Figure 1. The `xfontsel` interface

Clicking on any of the menu items in the second row will display a list of available options. For example, clicking on the 'fndry' (foundry) menu option will display a list of available font foundries. From there, work your way to the right; each selection will winnow down the available choices in subsequent menu options. For example, selecting the Adobe foundry will result in only a few of the several dozen font families being available in the `fmly` menu. As you make selections, those choices are displayed in the third row, and a sample of the font is displayed in the window below, as shown in Figure 2.

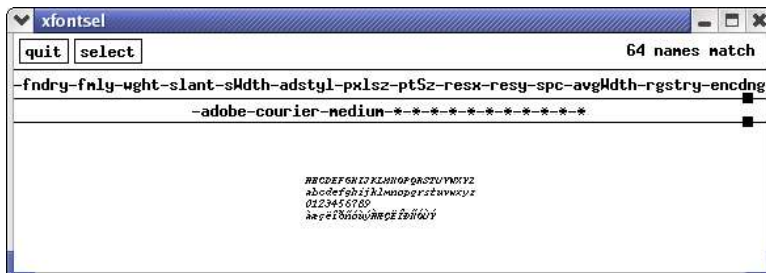


Figure 2. Selecting `fndry`, `fmly`, and `wght` options displays a sample of the font.

8. Use your fonts

Your fonts should now be available to your Linux applications. For example, open an OpenOffice.org document, and you'll see the new fonts in the Font combo box, as shown in Figure 3.

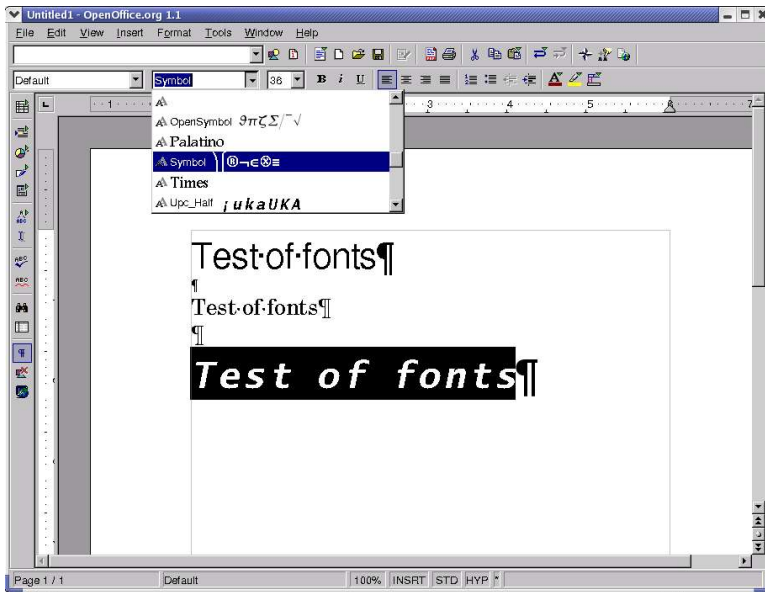


Figure 3. New fonts available in OpenOffice.org

Next, open up The GIMP, create a new, empty file, right click in the canvas, and select the Tools, Text menu as shown in Figure 4.

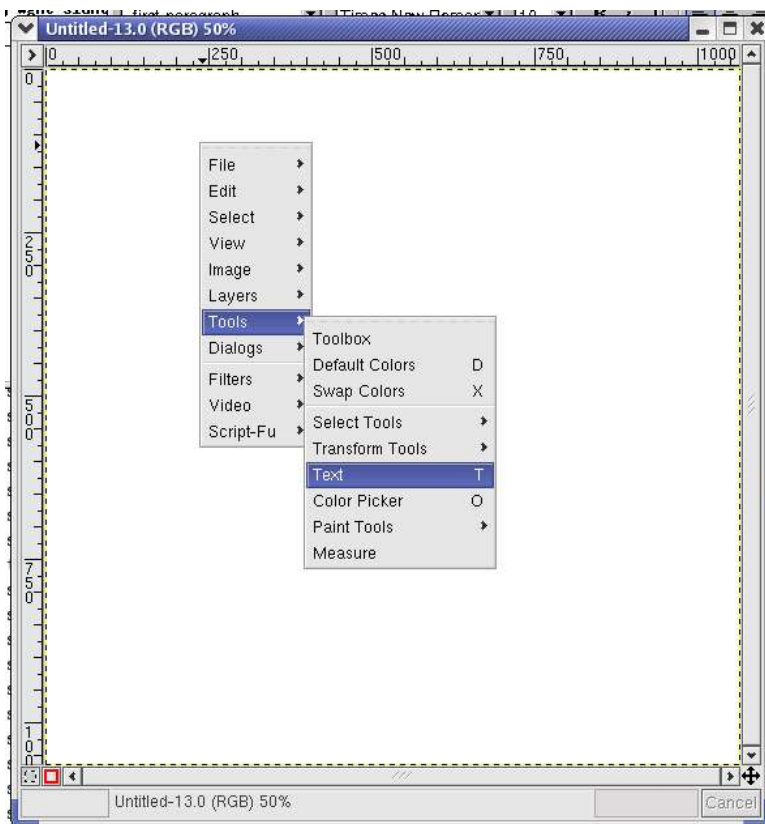


Figure 4. Selecting the Text tool in an empty canvas in The GIMP.

You'll see the new fonts available in the font tab of the Text Tool dialog, as shown in Figure 5.

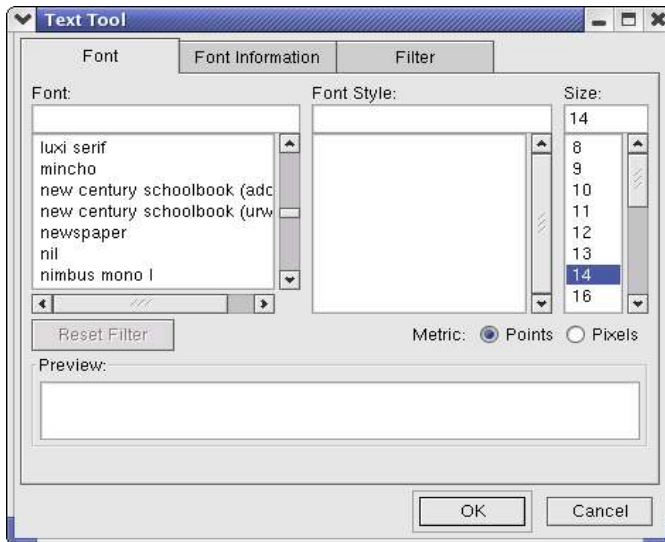


Figure 5. New fonts available in The GIMP.

9. To add more fonts to an existing directory

First, place the fonts in the directory. Then run the same commands as in Step 2:

```
cd /usr/local/fonts/ttf
ttmkfdir > fonts.scale
mkfontdir
```

And, of course, reload the config file, restart X and verify the fonts are there as described in Steps 4, 5 and 6.

10. Where to go for more information

The Linux Documentation Project at www.tldp.org has a lengthy, detailed write-up about fonts that covers many more side issues than this paper. Check out the HOWTO at <http://en.tldp.org/HOWTO/Font-HOWTO/>, specifically, Chapter 4 at <http://tldp.org/HOWTO/Font-HOWTO/xfonts.html>.

There's also a writeup on using RPM here: <http://corefonts.sourceforge.net/>.

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