FDU

Table of Contents

XFree86 Font Deuglification Mini HOWTO

Doug Holland, meldroc@frii.com

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How to fix ugly and unreadable X Window fonts.

6.Adjusting fonts in specific applications

7.Credits

8.Legalities

1.Introduction

One of the most annoying sets of problems I have had to deal with is the abysmal default fonts and font settings of X (I'm talking specifically about XFree86, other versions of X may be better.) Many programs use fixed width default fonts when a variable width font would be more appropriate. Other programs use fonts that are ridiculously tiny and unreadable. The fonts that are bundled with XFree86 are barely adequate for the job. It does come with a halfway decent courier font, but its Times and Helvetica fonts are simple bitmap fonts that pixelize when they are scaled. Yuck!

This HOWTO attempts to show how to adjust various font settings, install new fonts, and do other things that will greatly improve the appearance and readability of fonts on the X Window Desktop. This is done by adjusting the FontPath in the XF86Config file, by adding switches to X server command line in startx or xdm, by adding new fonts, by installing the TrueType font server xfstt, and by using a feature in the K Desktop Environment 1.1 that automagically adjusts font settings in many applications, including non−KDE apps to set their fonts and colors to match KDE's style settings.

Comments, corrections, additions and critiques are always welcome. You can reach me at meldroc@frii.com.

1.1 Change Log

- 0.1: Feb. 21, 1999: First release.
- 0.11: Feb. 27, 1999: Added copyright info to protect my butt.
- 0.12: Jun. 10, 1999: Added A Plea for Help.
- 0.20: Sep. 14, 1999: Added section on xfs for Redhatters. Many thanks to Hal Burgiss for his contribution.
- 1.0: Nov. 23, 1999: Converted document to SGML, for submission to the Linux Documentation Project. Removed Plea for Help.

2.The XF86Config File

The first place to look when seeking to cure font problems is the `XF86Config` file. (`/usr/X11/lib/X11/XF86Config` or `/etc/X11/XF86Config` are the usual locations.) If you haven't guessed already, the most important part of this file relating to fonts is the `FontPath.` Before we get into that, this would be a good time to check the other parts of your X configuration. Bad monitor settings can be even more of a headache than bad fonts, so make sure your refresh rate is as high as your monitor can handle (85 Hz is great, 75 Hz is OK, 60 Hz is painful.)

2.1 Setting The FontPath

Use your favorite text editor and edit `XF86Config`. Near the top of the file, you should see something like this:

```
FontPath        "/usr/X11R6/lib/X11/fonts/misc/"
FontPath        "/usr/X11R6/lib/X11/fonts/Type1/"
FontPath        "/usr/X11R6/lib/X11/fonts/Speedo/"
FontPath        "/usr/X11R6/lib/X11/fonts/75dpi/"
FontPath        "/usr/X11R6/lib/X11/fonts/100dpi/"
```

The `FontPath` tells X where to find the fonts it uses to render text on your display. Order is important -- when an X application asks X to render some text, the X server usually has some leeway to choose the font that is used. The X server then goes through the `FontPath` and grabs the first font it sees that matches the X client's criteria, and then renders.

The default FontPath typically puts 75dpi fonts before the 100dpi fonts. If you have a high resolution display, this means very tiny fonts. The first tweak you'll use is to switch the 75dpi & 100dpi FontPath lines.

```
FontPath        "/usr/X11R6/lib/X11/fonts/misc/"
FontPath        "/usr/X11R6/lib/X11/fonts/Type1/"
FontPath        "/usr/X11R6/lib/X11/fonts/Speedo/"
FontPath        "/usr/X11R6/lib/X11/fonts/100dpi/"
FontPath        "/usr/X11R6/lib/X11/fonts/75dpi/"
```

Next, specify that you prefer to use unscaled bitmap fonts. If you've ever used Netscape or any other program that displays titles using big fonts, you'll notice that those fonts are pixelized. This is very ugly and needs to be fixed. So add `:unscaled` to the ends of the misc, 100dpi & 75dpi fonts. You can even use both unscaled and scaled fonts if you want, just put the unscaled `FontPath` lines first to tell X you prefer unscaled fonts if possible.

```
FontPath        "/usr/X11R6/lib/X11/fonts/misc:unscaled"
FontPath        "/usr/X11R6/lib/X11/fonts/100dpi:unscaled"
FontPath        "/usr/X11R6/lib/X11/fonts/75dpi:unscaled"
FontPath        "/usr/X11R6/lib/X11/fonts/Type1"
FontPath        "/usr/X11R6/lib/X11/fonts/Speedo"
FontPath        "/usr/X11R6/lib/X11/fonts/misc"
FontPath        "/usr/X11R6/lib/X11/fonts/100dpi"
FontPath        "/usr/X11R6/lib/X11/fonts/75dpi"
```

After making these changes, restart X. Doesn't the desktop look better already?

3.X Server Command Line Options

The next thing you need to do is adjust the command line options for the X server. You'll want to use the `-dpi` switch which specifies the display resolution in dots per inch. As a lot of systems use high resolution displays these days, chances are they'll be working at 100 dpi.

If you start X from the console command prompt, type

```
startx -dpi 100.
```

If you use xdm for graphical logins, you'll want to edit your `/usr/X11/lib/X11/xdm/Xservers` file, which will have the command line for the Xserver in it. Mine has the line

```
:0 local /usr/X11R6/bin/X -dpi 100 -gamma 1.6
```

More information is in the X and Xserver man pages.

4.TrueType Fonts (One of the few things Windows is good for)

Because the boys at Redmond are very concerned with the appearance of their software (as opposed to the internal workings ;) they built TrueType font support into Windows. Windows 95 and nearly every other variety of Windows comes with Arial, Times New Roman, and Courier New, which are roughly equivalant to Helvetica, Times and Courier. TrueType fonts are scalable, so they look good in large sizes, and they are well hinted, so they are readable at small sizes. Many windows applications come with dozens of TrueType fonts. Don't microwave your Windows CD yet, you'll want to get the fonts first.

4.1 xfstt

Unfortunately, XFree86 does not come with built in TrueType support, so you'll have to add it yourself. The easiest way of doing this is with xfstt, a free TrueType font server.

Installation

xfstt is very easy to install. First, you'll want to download the tarball from the web. The most current version is at http://metalab.unc.edu/pub/Linux/X11/fonts/Xfstt–0.9.10.tgz

Once you have the tarball, untar it.

```
tar -zxvf Xfstt-0.9.10.tgz
```

Then build it and install it. Read the INSTALL file for quick instructions, but it's a no brainer. `make; make install` is all you have to do. Once that's done, copy the TrueType fonts you've managed to get from various sources to `/usr/ttfonts`, and you're ready to go. Start xfstt by typing

```
xfstt --sync        # updates xfstt's font database
xfstt &             # runs xfstt in the background.
```

Then type

```
xset +fp unix/:7100 # tells X about xfstt.
```

or add

```
FontPath "unix/:7100"
```

to your `XF86Config` to tell X about the font service.

Adjusting the default font size

If your TrueType fonts appear to be very tiny, the following commands help.

Add the `-dpi` switch to your X server command line (see section 3 to do this.)

Use the `--res` switch to tell xfstt to increase the default resolution. Use the following command line.

```
xfstt --res 120
```

4.2 xfs

xfs is an alternative font server that is now being included with RedHat based distributions. xfs is based on the FreeType Font library and provides similar functionality to xfstt. xfs is able to serve both TrueType and Type 1 fonts, as well as legacy X fonts.

Installation

First step is to add TrueType Fonts to your linux filesystem. Su to root, and make a directory to hold the fonts:

```
mkdir /usr/share/fonts/ttfonts
```

Then, add fonts to this directory, either by copying them from your Windows system:

```
cp /mnt/win/path_to_fonts/*ttf  /usr/share/fonts/ttfonts/
```

or by downloading those available directly from Microsoft.

These fonts are in self–extracting zip archives. You can still install them though in linux

```
unzip <TTFONT.EXE>
```

Note that the font file names must be lower case. One quick and easy way to convert them is to copy them to a DOS (FAT16) filesystem and then copy them back. DOS doesn't do upper case. For a more linuxian way, go to the directory containing the fonts and type this:

```
ls *TTF | while read f
do
 [ -f "$f" ] && mv -f "$f" "`echo \"$f\" | tr A-Z a-z`"
done
```

You'll get the ">" prompt as you type each line, hit return at the end of each line above. Note the punctuation –– those "backquotes" are important! Once the TrueType fonts are properly installed, as root:

```
ttmkfdir -o fonts.scale
mkfontdir
```

Rerun these commands anytime the contents of your font directory changes. Next, edit the xfs font config file, /etc/X11/fs/config, to add your TrueType fonts to the server's font list:

```
catalogue = /usr/X11R6/lib/X11/fonts/misc:unscaled,
            /usr/X11R6/lib/X11/fonts/100dpi:unscaled,
            /usr/X11R6/lib/X11/fonts/75dpi:unscaled,
            /usr/X11R6/lib/X11/fonts/misc,
            /usr/X11R6/lib/X11/fonts/Type1,
            /usr/X11R6/lib/X11/fonts/Speedo,
            /usr/share/fonts/default/Type1,
            /usr/share/fonts/ttfonts,
            /usr/X11R6/lib/X11/fonts/100dpi,
            /usr/X11R6/lib/X11/fonts/75dpi
```

Alternately, you can use the 'chkfontpath ––add <font>' command to add fonts. While you're at it, you may want to change the default point size too.

```
default-point-size = 140
```

This gives me 14 point, instead of the default 12. Some X apps use this, some won't. Next, make sure the FontPath line in /etc/X11/XF86Config is:

```
FontPath "unix/:-1"
```

Note that "unix/:7100" may also do the trick, but did not work with the initial release. Comment out any existing FontPath with '#' since you no longer need it. The xfs package itself should be installed already with the other XFree packages. To make sure it runs as one of the default services either use 'ntsysv' or

```
chkconfig --add xfs
```

Now xfs will start every time you boot. Now restart X to force the new FontPath and start/restart xfs

```
/etc/rc.d/init.d/xfs restart
```

You should now have a functioning font server. You can check which fonts are being served:

```
xlsfonts | less
```

or check them out further with xfontsel, and even better, gfontsel!

5.KDE

KDE is one of the best things that have happened to Linux and X in a long time. It provides a consistent user interface that goes a long way towards making Linux accessable to the average non−geek. More information about KDE can be found at http://www.kde.org/. So why am I singing it's praises here? This is because KDE 1.1 has a new feature that will make the fonts & colors in your programs, including non−KDE applications consistent with KDE's current style.

5.1 Applying KDE fonts & colors to non−KDE apps

This is very easy. Simply start up the KDE Control Center, go to Desktop, and go to Style inside Desktop. In there, there will be a toggle switch labled "Apply fonts and colors to non−KDE apps". Turn it on, click OK, and your done! The next time you start up many X applications, they will use the same colors and fonts that your KDE applications do. Some people may like this feature better than others, but if you don't like it you can always turn it off.

6.Adjusting fonts in specific applications

6.1 Netscape Navigator/Communicator

Netscape Communicator is particularly susceptible to font problems. If you're using the default FontPath, your fonts will be very tiny and very ugly. The first thing you'll want to do is fix your XF86Config FontPath (see section 2.) Using 100dpi fonts improves readability immensly. You'll also want check your font settings under Edit/Preferences, under Appearance/Fonts. To get rid of bitmap font pixelization, turn off the option "Allow Scaling" on the font selection.

If you have xfstt or xfs, Netscape is perfectly capable of using TrueType fonts. However, it doesn't handle xfstt's quirkiness very gracefully. In Edit/Preferences, you can specify TrueType fonts as the variable and fixed width fonts, however Netscape will not remember the size you've picked after you closed it. If you haven't used the `−dpi` switch when starting the X server or used the `−−res` switch in xfstt, you'll get very tiny fonts. Once I applied these two fixes, TrueType fonts work great.

6.2 WordPerfect

Coming soon.

6.3 StarOffice

Coming soon.

7.Credits

Created by Doug Holland

Email: meldroc@frii.com

WWW: http://www.frii.com/~meldroc/

Additional contributions by:

- Hal Burgiss

Thanks go to:

- The folks at comp.os.linux.x who gave me a hand in figuring all of this out in the first place.
- The Linux community in general who made all of this possible in the first place.
- Microsoft and Apple: for providing the fonts that adorn my desktop.

8.Legalities

he can boost his ego by knowing who else reads and links to this document.