## APPENDIX B

# OpenWindows and X11 Standard Fonts

This appendix shows the standard display fonts available in OpenWindows Release 3 and in X11 Release 5. The images contained in this appendix are window dumps created with our own program, called *xshowfonts*, the code for which is included in the CD-ROM.

This appendix does not show how to add fonts to the OpenWindows server or the MIT X server, norr use of the X11R5 "font server"; these are covered in Volume Eight, *X Window System Administrator's Guide*. We do discuss adding Type 1 PostScript fonts to OpenWindows 3.3 and later.

## B.1 Pictures of Fonts

This appendix includes pictures of some representative fonts from the standard X distributions. No two distributions of X11 (except two copies of the same release direct from the X Consortium) contain exactly the same set of fonts! Not every font may be supported by particular server vendors, and some vendors may supplement the set.

Section B.2, "Fonts in the X11R5/6 (and modern OpenWindows) Servers," lists the fonts in the X11R5 and modern OpenWindows directories. Section B.3, "Fonts in the xnews Server," lists the fonts in the older OpenWindows servers. The first column lists the name of the file in which the font is stored (without the filenameextension); the second column lists the actual font name. See Chapter 10, *X11, OPEN LOOK and OpenWindows Font Specification*, for information about font naming conventions.

PICTURES of the different font families supplied in the standard X11 distribution appear in Section B.4, "Font Samples . We show just the fonts in the *75dpi* directory. The *100dpi* directory contains the same fonts stored in the *75dpi* directory but for 100 dots per inch monitors. Keep in mind that all of the fonts in the *75dpi* and *100dpi* directories are available in 8-, 10-, 12-, 14-, 18-, and 24-point sizes. Each page shows fonts of various sizes, weights, and styles. We include the source for *xshowfonts.c*, the program written at O'Reilly & Associates to make these displays, at the end of the appendix.. Section B.5,

B

"Font Encodings," shows you, using *xfd*, one example of each of the unique *encodings*, or character sets, available.[1]

All of the characters in each font are shown more-or-less actual size. But since no two montiros have exactly the same pixel density, these fonts would appear in a different size on your monitor.

## B.2 Fonts in the X11R5/6 (and modern OpenWindows) Servers

On the X Consortium X11R5 and R6 releases, as well as OpenWindows after Release 3.2, the standard fonts are stored in several directories, as shown in Table B-1

**Table B-1. MIT X11 Font Directories**

| Directory (relaitve to /usr/lib/X11 or /usr/openwin/home/lib/X11) | Contents |
|---|---|
| .../fonts/misc | Fxed-width fonts, the cursor font, other miscellaneous fonts. |
| *.../fonts/75dpi* | Fixed- and variable-width fonts, 75 dots per inch. |
| *...//fonts/100dpi* | Fixed- and variable-width fonts, 100 dpi. |
| *.../fonts/Speedo* | Charter and Courier outline fonts from Bitstream |
| *.../fonts/F3 (and F3bitmaps)* | Sun "F3" fonts (Sun only) |
| *.../fonts/Type1* | Display PostScript Type 1 fonts (Sun and other DPS vendors only) |

The standard server can accept fonts in any of several formats:

**Table 2-2. X11R5 Font File Formats**

| Suffix | File Format |
|---|---|
| .afm | Adobe ASCII format metric file |
| .bdf | Adobe BDF 2.1 bitmap file |

1. If you want to use this program yourself, you probably don't want to type the sourcein, so it's in the src/utils dir4ectory of the CD-ROM. Or, you can obtain the source from uunet.uu.net via anonymous *ftp* or *uucp*. See the Preface for more information.

B

**Table 2-2. X11R5 Font File Formats**

| Suffix | File Format |
|---|---|
| .snf | Server Normal Form |
| .spd | Speedo Scaleable form |
| .ff | Font Family file |
| .fm | NeWS font metric file |
| .ps | PostScript font file (usually Type Three) |
| .vft | Vfont (Berkeley) bitmap font |

Here is a listing of the fonts.

**Table B-3. Fonts in the misc Directory**

| Filename | Font name |
|---|---|
| 6x12.pcf.Z | -misc-fixed-medium-r-semicondensed--12-110-75-75-c-60-iso8859-1 |
| 6x13.pcf.Z | -misc-fixed-medium-r-semicondensed--13-120-75-75-c-60-iso8859-1 |
| 6x10.pcf.Z | -misc-fixed-medium-r-normal--10-100-75-75-c-60-iso8859-1 |
| 7x13.pcf.Z | -misc-fixed-medium-r-normal--13-120-75-75-c-70-iso8859-1 |
| 7x14.pcf.Z | -misc-fixed-medium-r-normal--14-130-75-75-c-70-iso8859-1 |
| clR8x12.pcf.Z | -schumacher-clean-medium-r-normal--12-120-75-75-c-80-iso8859-1 |
| 6x9.pcf.Z | -misc-fixed-medium-r-normal--9-90-75-75-c-60-iso8859-1 |
| clR8x13.pcf.Z | -schumacher-clean-medium-r-normal--13-130-75-75-c-80-iso8859-1 |
| clR8x10.pcf.Z | -schumacher-clean-medium-r-normal--10-100-75-75-c-80-iso8859-1 |
| 5x7.pcf.Z | -misc-fixed-medium-r-normal--7-70-75-75-c-50-iso8859-1 |
| clR8x16.pcf.Z | -schumacher-clean-medium-r-normal--16-160-75-75-c-80-iso8859-1 |
| clR8x14.pcf.Z | -schumacher-clean-medium-r-normal--14-140-75-75-c-80-iso8859-1 |
| clR8x8.pcf.Z | -schumacher-clean-medium-r-normal--8-80-75-75-c-80-iso8859-1 |
| 5x8.pcf.Z | -misc-fixed-medium-r-normal--8-80-75-75-c-50-iso8859-1 |
| clR9x15.pcf.Z | -schumacher-clean-medium-r-normal--15-150-75-75-c-90-iso8859-1 |
| clR6x8.pcf.Z | -schumacher-clean-medium-r-normal--8-80-75-75-c-60-iso8859-1 |
| clR5x6.pcf.Z | -schumacher-clean-medium-r-normal--6-60-75-75-c-50-iso8859-1 |
| clR7x8.pcf.Z | -schumacher-clean-medium-r-normal--8-80-75-75-c-70-iso8859-1 |
| clR4x6.pcf.Z | -schumacher-clean-medium-r-normal--6-60-75-75-c-40-iso8859-1 |
| clR5x8.pcf.Z | -schumacher-clean-medium-r-normal--8-80-75-75-c-50-iso8859-1 |
| clR6x6.pcf.Z | -schumacher-clean-medium-r-normal--6-60-75-75-c-60-iso8859-1 |

B

**Table B-3. Fonts in the misc Directory**

| Filename | Font name |
|---|---|
| 6x13B.pcf.Z | -misc-fixed-bold-r-semicondensed--13-120-75-75-c-60-iso8859-1 |
| 12x24rk.pcf.Z | -sony-fixed-medium-r-normal--24-170-100-100-c-120-jisx0201.1976-0 |
| 7x13B.pcf.Z | -misc-fixed-bold-r-normal--13-120-75-75-c-70-iso8859-1 |
| 7x14B.pcf.Z | -misc-fixed-bold-r-normal--14-130-75-75-c-70-iso8859-1 |
| clR6x12.pcf.Z | -schumacher-clean-medium-r-normal--12-120-75-75-c-60-iso8859-1 |
| clR6x13.pcf.Z | -schumacher-clean-medium-r-normal--13-130-75-75-c-60-iso8859-1 |
| clR6x10.pcf.Z | -schumacher-clean-medium-r-normal--10-100-75-75-c-60-iso8859-1 |
| clR7x12.pcf.Z | -schumacher-clean-medium-r-normal--12-120-75-75-c-70-iso8859-1 |
| clR7x10.pcf.Z | -schumacher-clean-medium-r-normal--10-100-75-75-c-70-iso8859-1 |
| clR7x14.pcf.Z | -schumacher-clean-medium-r-normal--14-140-75-75-c-70-iso8859-1 |
| 8x13.pcf.Z | -misc-fixed-medium-r-normal--13-120-75-75-c-80-iso8859-1 |
| 8x16.pcf.Z | -sony-fixed-medium-r-normal--16-120-100-100-c-80-iso8859-1 |
| clR5x10.pcf.Z | -schumacher-clean-medium-r-normal--10-100-75-75-c-50-iso8859-1 |
| 9x15.pcf.Z | -misc-fixed-medium-r-normal--15-140-75-75-c-90-iso8859-1 |
| heb6x13.pcf.Z | -misc-fixed-medium-r-semicondensed--13-120-75-75-c-60-iso8859-8 |
| clB8x8.pcf.Z | -schumacher-clean-bold-r-normal--8-80-75-75-c-80-iso8859-1 |
| 8x13B.pcf.Z | -misc-fixed-bold-r-normal--13-120-75-75-c-80-iso8859-1 |
| 7x14rk.pcf.Z | -misc-fixed-medium-r-normal--14-130-75-75-c-70-jisx0201.1976-0 |
| 9x15B.pcf.Z | -misc-fixed-bold-r-normal--15-140-75-75-c-90-iso8859-1 |
| clI8x8.pcf.Z | -schumacher-clean-medium-i-normal--8-80-75-75-c-80-iso8859-1 |
| heb8x13.pcf.Z | -misc-fixed-medium-r-normal--13-120-75-75-c-80-iso8859-8 |
| decsess.pcf.Z | decw$session |
| clB8x12.pcf.Z | -schumacher-clean-bold-r-normal--12-120-75-75-c-80-iso8859-1 |
| clB8x13.pcf.Z | -schumacher-clean-bold-r-normal--13-130-75-75-c-80-iso8859-1 |
| clB8x10.pcf.Z | -schumacher-clean-bold-r-normal--10-100-75-75-c-80-iso8859-1 |
| clB8x16.pcf.Z | -schumacher-clean-bold-r-normal--16-160-75-75-c-80-iso8859-1 |
| clB8x14.pcf.Z | -schumacher-clean-bold-r-normal--14-140-75-75-c-80-iso8859-1 |
| clB9x15.pcf.Z | -schumacher-clean-bold-r-normal--15-150-75-75-c-90-iso8859-1 |
| olcursor.pcf.Z | -sun-open look cursor-----12-120-75-75-p-455-sunolcursor-1 |
| Cmr-Bold14.pcf.Z | -sun-cmr-bold-r-normal--14-140-72-72-m-100-sun-fontspecific |
| hanglg16.pcf.Z | -daewoo-gothic-medium-r-normal--16-120-100-100-c-160-ksc5601.1987-0 |
| 8x16rk.pcf.Z | -sony-fixed-medium-r-normal--16-120-100-100-c-80-jisx0201.1976-0 |
| clB6x12.pcf.Z | -schumacher-clean-bold-r-normal--12-120-75-75-c-60-iso8859-1 |
| clB6x10.pcf.Z | -schumacher-clean-bold-r-normal--10-100-75-75-c-60-iso8859-1 |
| hanglm16.pcf.Z | -daewoo-mincho-medium-r-normal--16-120-100-100-c-160-ksc5601.1987-0 |

**Table B-3. Fonts in the misc Directory**

| Filename | Font name |
|---|---|
| jiskan24.pcf.Z | -jis-fixed-medium-r-normal--24-230-75-75-c-240-jisx0208.1983-0 |
| hanglm24.pcf.Z | -daewoo-mincho-medium-r-normal--24-170-100-100-c-240-ksc5601.1987-0 |
| jiskan16.pcf.Z | -jis-fixed-medium-r-normal--16-150-75-75-c-160-jisx0208.1983-0 |
| cursor.pcf.Z | cursor |
| Serif12.pcf.Z | -sun-serif-medium-r-normal-serif-12-120-72-72-m-70-iso8859-1 |
| Serif10.pcf.Z | -sun-serif-medium-r-normal-serif-10-100-72-72-m-70-iso8859-1 |
| Serif11.pcf.Z | -sun-serif-medium-r-normal-serif-11-110-72-72-m-70-iso8859-1 |
| Serif16.pcf.Z | -sun-serif-medium-r-normal-serif-16-160-72-72-m-90-iso8859-1 |
| Serif14.pcf.Z | -sun-serif-medium-r-normal-serif-14-140-72-72-m-80-iso8859-1 |
| deccurs.pcf.Z | decw$cursor |
| clI6x12.pcf.Z | -schumacher-clean-medium-i-normal--12-120-75-75-c-60-iso8859-1 |
| Screen6.pcf.Z | -sun-screen-medium-r-normal--6-60-72-72-m-40-sun-fontspecific |
| Screen7.pcf.Z | -sun-screen-medium-r-normal--7-70-72-72-m-60-sun-fontspecific |
| Gallant19.pcf.Z | -sun-gallant-demi-r-normal--19-190-72-72-m-120-iso8859-1 |
| olgl19.pcf.Z | -sun-open look glyph-----19-190-75-75-p-163-sunolglyph-1 |
| olgl12.pcf.Z | -sun-open look glyph-----12-120-75-75-p-116-sunolglyph-1 |
| olgl24.pcf.Z | -sun-open look glyph-----24-240-75-75-p-206-sunolglyph-1 |
| k14.pcf.Z | -misc-fixed-medium-r-normal--14-130-75-75-c-140-jisx0208.1983-0 |
| olgl10.pcf.Z | -sun-open look glyph-----10-100-75-75-p-106-sunolglyph-1 |
| olgl16.pcf.Z | -sun-open look glyph-----16-160-75-75-p-137-sunolglyph-1 |
| olgl20.pcf.Z | -sun-open look glyph-----20-200-75-75-p-172-sunolglyph-1 |
| olgl14.pcf.Z | -sun-open look glyph-----14-140-75-75-p-136-sunolglyph-1 |
| nil2.pcf.Z | -misc-nil-medium-r-normal--2-20-75-75-c-10-misc-fontspecific |
| Cmr14.pcf.Z | -sun-cmr-medium-r-normal--14-140-72-72-m-90-sun-fontspecific |
| 10x20.pcf.Z | -misc-fixed-medium-r-normal--20-200-75-75-c-100-iso8859-1 |
| 12x24.pcf.Z | -sony-fixed-medium-r-normal--24-170-100-100-c-120-iso8859-1 |
| Screen-Bold12.pcf.Z | -sun-screen-bold-r-normal--12-120-72-72-m-80-iso8859-1 |
| Screen-Bold16.pcf.Z | -sun-screen-bold-r-normal--16-160-72-72-m-100-iso8859-1 |
| Screen-Bold14.pcf.Z | -sun-screen-bold-r-normal--14-140-72-72-m-90-iso8859-1 |
| Screen12.pcf.Z | -sun-screen-medium-r-normal--12-120-72-72-m-70-iso8859-1 |
| Screen11.pcf.Z | -sun-screen-medium-r-normal--11-110-72-72-m-70-iso8859-1 |
| Screen16.pcf.Z | -sun-screen-medium-r-normal--16-160-72-72-m-90-iso8859-1 |
| Screen14.pcf.Z | -sun-screen-medium-r-normal--14-140-72-72-m-80-iso8859-1 |

Here are the fonts in the 75dpi directory:

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| courO08.pcf.Z | -adobe-courier-medium-o-normal--8-80-75-75-m-50-iso8859-1 |
| courO18.pcf.Z | -adobe-courier-medium-o-normal--18-180-75-75-m-110-iso8859-1 |
| courO14.pcf.Z | -adobe-courier-medium-o-normal--14-140-75-75-m-90-iso8859-1 |
| courO12.pcf.Z | -adobe-courier-medium-o-normal--12-120-75-75-m-70-iso8859-1 |
| courO24.pcf.Z | -adobe-courier-medium-o-normal--24-240-75-75-m-150-iso8859-1 |
| courO10.pcf.Z | -adobe-courier-medium-o-normal--10-100-75-75-m-60-iso8859-1 |
| lubB08.pcf.Z | -b&h-lucidabright-demibold-r-normal--8-80-75-75-p-47-iso8859-1 |
| lubB18.pcf.Z | -b&h-lucidabright-demibold-r-normal--18-180-75-75-p-107-iso8859-1 |
| lubB19.pcf.Z | -b&h-lucidabright-demibold-r-normal--19-190-75-75-p-114-iso8859-1 |
| lubB12.pcf.Z | -b&h-lucidabright-demibold-r-normal--12-120-75-75-p-71-iso8859-1 |
| lubB24.pcf.Z | -b&h-lucidabright-demibold-r-normal--24-240-75-75-p-143-iso8859-1 |
| lubB10.pcf.Z | -b&h-lucidabright-demibold-r-normal--10-100-75-75-p-59-iso8859-1 |
| lubB14.pcf.Z | -b&h-lucidabright-demibold-r-normal--14-140-75-75-p-84-iso8859-1 |
| courB08.pcf.Z | -adobe-courier-bold-r-normal--8-80-75-75-m-50-iso8859-1 |
| courB18.pcf.Z | -adobe-courier-bold-r-normal--18-180-75-75-m-110-iso8859-1 |
| lubI14.pcf.Z | -b&h-lucidabright-medium-i-normal--14-140-75-75-p-80-iso8859-1 |
| courBO08.pcf.Z | -adobe-courier-bold-o-normal--8-80-75-75-m-50-iso8859-1 |
| lubI12.pcf.Z | -b&h-lucidabright-medium-i-normal--12-120-75-75-p-67-iso8859-1 |
| lubI24.pcf.Z | -b&h-lucidabright-medium-i-normal--24-240-75-75-p-136-iso8859-1 |
| courBO18.pcf.Z | -adobe-courier-bold-o-normal--18-180-75-75-m-110-iso8859-1 |
| lubI10.pcf.Z | -b&h-lucidabright-medium-i-normal--10-100-75-75-p-57-iso8859-1 |
| termB14.pcf.Z | -dec-terminal-bold-r-normal--14-140-75-75-c-80-iso8859-1 |
| courB12.pcf.Z | -adobe-courier-bold-r-normal--12-120-75-75-m-70-iso8859-1 |
| courB24.pcf.Z | -adobe-courier-bold-r-normal--24-240-75-75-m-150-iso8859-1 |
| courB10.pcf.Z | -adobe-courier-bold-r-normal--10-100-75-75-m-60-iso8859-1 |
| courBO14.pcf.Z | -adobe-courier-bold-o-normal--14-140-75-75-m-90-iso8859-1 |
| courBO12.pcf.Z | -adobe-courier-bold-o-normal--12-120-75-75-m-70-iso8859-1 |
| courBO24.pcf.Z | -adobe-courier-bold-o-normal--24-240-75-75-m-150-iso8859-1 |
| lubI08.pcf.Z | -b&h-lucidabright-medium-i-normal--8-80-75-75-p-45-iso8859-1 |
| courB14.pcf.Z | -adobe-courier-bold-r-normal--14-140-75-75-m-90-iso8859-1 |
| courBO10.pcf.Z | -adobe-courier-bold-o-normal--10-100-75-75-m-60-iso8859-1 |
| lubI18.pcf.Z | -b&h-lucidabright-medium-i-normal--18-180-75-75-p-102-iso8859-1 |
| lubI19.pcf.Z | -b&h-lucidabright-medium-i-normal--19-190-75-75-p-109-iso8859-1 |
| lubR08.pcf.Z | -b&h-lucidabright-medium-r-normal--8-80-75-75-p-45-iso8859-1 |

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| lubR18.pcf.Z | -b&h-lucidabright-medium-r-normal--18-180-75-75-p-103-iso8859-1 |
| lubR19.pcf.Z | -b&h-lucidabright-medium-r-normal--19-190-75-75-p-109-iso8859-1 |
| helvBO08.pcf.Z | -adobe-helvetica-bold-o-normal--8-80-75-75-p-50-iso8859-1 |
| helvBO18.pcf.Z | -adobe-helvetica-bold-o-normal--18-180-75-75-p-104-iso8859-1 |
| lubR12.pcf.Z | -b&h-lucidabright-medium-r-normal--12-120-75-75-p-68-iso8859-1 |
| lubR24.pcf.Z | -b&h-lucidabright-medium-r-normal--24-240-75-75-p-137-iso8859-1 |
| helvBO14.pcf.Z | -adobe-helvetica-bold-o-normal--14-140-75-75-p-82-iso8859-1 |
| lubR10.pcf.Z | -b&h-lucidabright-medium-r-normal--10-100-75-75-p-56-iso8859-1 |
| helvBO12.pcf.Z | -adobe-helvetica-bold-o-normal--12-120-75-75-p-69-iso8859-1 |
| helvBO24.pcf.Z | -adobe-helvetica-bold-o-normal--24-240-75-75-p-138-iso8859-1 |
| helvBO10.pcf.Z | -adobe-helvetica-bold-o-normal--10-100-75-75-p-60-iso8859-1 |
| lubR14.pcf.Z | -b&h-lucidabright-medium-r-normal--14-140-75-75-p-80-iso8859-1 |
| lubBI14.pcf.Z | -b&h-lucidabright-demibold-i-normal--14-140-75-75-p-84-iso8859-1 |
| lubBI12.pcf.Z | -b&h-lucidabright-demibold-i-normal--12-120-75-75-p-72-iso8859-1 |
| lubBI24.pcf.Z | -b&h-lucidabright-demibold-i-normal--24-240-75-75-p-143-iso8859-1 |
| lubBI10.pcf.Z | -b&h-lucidabright-demibold-i-normal--10-100-75-75-p-59-iso8859-1 |
| lubBI08.pcf.Z | -b&h-lucidabright-demibold-i-normal--8-80-75-75-p-48-iso8859-1 |
| lubBI18.pcf.Z | -b&h-lucidabright-demibold-i-normal--18-180-75-75-p-107-iso8859-1 |
| lubBI19.pcf.Z | -b&h-lucidabright-demibold-i-normal--19-190-75-75-p-114-iso8859-1 |
| courR08.pcf.Z | -adobe-courier-medium-r-normal--8-80-75-75-m-50-iso8859-1 |
| courR18.pcf.Z | -adobe-courier-medium-r-normal--18-180-75-75-m-110-iso8859-1 |
| courR12.pcf.Z | -adobe-courier-medium-r-normal--12-120-75-75-m-70-iso8859-1 |
| courR24.pcf.Z | -adobe-courier-medium-r-normal--24-240-75-75-m-150-iso8859-1 |
| courR10.pcf.Z | -adobe-courier-medium-r-normal--10-100-75-75-m-60-iso8859-1 |
| courR14.pcf.Z | -adobe-courier-medium-r-normal--14-140-75-75-m-90-iso8859-1 |
| charB08.pcf.Z | -bitstream-charter-bold-r-normal--8-80-75-75-p-50-iso8859-1 |
| charB18.pcf.Z | -bitstream-charter-bold-r-normal--19-180-75-75-p-119-iso8859-1 |
| charB12.pcf.Z | -bitstream-charter-bold-r-normal--12-120-75-75-p-75-iso8859-1 |
| charB24.pcf.Z | -bitstream-charter-bold-r-normal--25-240-75-75-p-157-iso8859-1 |
| charB10.pcf.Z | -bitstream-charter-bold-r-normal--10-100-75-75-p-63-iso8859-1 |
| charB14.pcf.Z | -bitstream-charter-bold-r-normal--15-140-75-75-p-94-iso8859-1 |
| charI14.pcf.Z | -bitstream-charter-medium-i-normal--15-140-75-75-p-82-iso8859-1 |
| charI12.pcf.Z | -bitstream-charter-medium-i-normal--12-120-75-75-p-65-iso8859-1 |
| charI24.pcf.Z | -bitstream-charter-medium-i-normal--25-240-75-75-p-136-iso8859-1 |
| charI10.pcf.Z | -bitstream-charter-medium-i-normal--10-100-75-75-p-55-iso8859-1 |

B

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| charI08.pcf.Z | -bitstream-charter-medium-i-normal--8-80-75-75-p-44-iso8859-1 |
| charI18.pcf.Z | -bitstream-charter-medium-i-normal--19-180-75-75-p-103-iso8859-1 |
| charR08.pcf.Z | -bitstream-charter-medium-r-normal--8-80-75-75-p-45-iso8859-1 |
| charR18.pcf.Z | -bitstream-charter-medium-r-normal--19-180-75-75-p-106-iso8859-1 |
| luRS08.pcf.Z | -b&h-lucida-medium-r-normal-sans-8-80-75-75-p-45-iso8859-1 |
| luRS18.pcf.Z | -b&h-lucida-medium-r-normal-sans-18-180-75-75-p-106-iso8859-1 |
| luRS19.pcf.Z | -b&h-lucida-medium-r-normal-sans-19-190-75-75-p-108-iso8859-1 |
| charR12.pcf.Z | -bitstream-charter-medium-r-normal--12-120-75-75-p-67-iso8859-1 |
| charR24.pcf.Z | -bitstream-charter-medium-r-normal--25-240-75-75-p-139-iso8859-1 |
| charR10.pcf.Z | -bitstream-charter-medium-r-normal--10-100-75-75-p-56-iso8859-1 |
| luRS14.pcf.Z | -b&h-lucida-medium-r-normal-sans-14-140-75-75-p-81-iso8859-1 |
| luRS12.pcf.Z | -b&h-lucida-medium-r-normal-sans-12-120-75-75-p-71-iso8859-1 |
| luRS24.pcf.Z | -b&h-lucida-medium-r-normal-sans-24-240-75-75-p-136-iso8859-1 |
| charR14.pcf.Z | -bitstream-charter-medium-r-normal--15-140-75-75-p-84-iso8859-1 |
| luRS10.pcf.Z | -b&h-lucida-medium-r-normal-sans-10-100-75-75-p-58-iso8859-1 |
| lutRS08.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-8-80-75-75-m-50-iso8859-1 |
| lutRS18.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-18-180-75-75-m-110-iso8859-1 |
| lutRS19.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-19-190-75-75-m-110-iso8859-1 |
| lutRS14.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-14-140-75-75-m-90-iso8859-1 |
| lutRS12.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-12-120-75-75-m-70-iso8859-1 |
| lutRS24.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-24-240-75-75-m-140-iso8859-1 |
| lutRS10.pcf.Z | -b&h-lucidatypewriter-medium-r-normal-sans-10-100-75-75-m-60-iso8859-1 |
| luIS14.pcf.Z | -b&h-lucida-medium-i-normal-sans-14-140-75-75-p-82-iso8859-1 |
| luIS12.pcf.Z | -b&h-lucida-medium-i-normal-sans-12-120-75-75-p-71-iso8859-1 |
| luIS24.pcf.Z | -b&h-lucida-medium-i-normal-sans-24-240-75-75-p-136-iso8859-1 |
| luIS10.pcf.Z | -b&h-lucida-medium-i-normal-sans-10-100-75-75-p-59-iso8859-1 |
| luIS08.pcf.Z | -b&h-lucida-medium-i-normal-sans-8-80-75-75-p-45-iso8859-1 |
| luIS18.pcf.Z | -b&h-lucida-medium-i-normal-sans-18-180-75-75-p-105-iso8859-1 |
| techB14.pcf.Z | -dec-terminal-bold-r-normal--14-140-75-75-c-80-dec-dectech |
| luIS19.pcf.Z | -b&h-lucida-medium-i-normal-sans-19-190-75-75-p-108-iso8859-1 |
| timBI14.pcf.Z | -adobe-times-bold-i-normal--14-140-75-75-p-77-iso8859-1 |
| timBI12.pcf.Z | -adobe-times-bold-i-normal--12-120-75-75-p-68-iso8859-1 |
| timBI24.pcf.Z | -adobe-times-bold-i-normal--24-240-75-75-p-128-iso8859-1 |
| timBI10.pcf.Z | -adobe-times-bold-i-normal--10-100-75-75-p-57-iso8859-1 |
| timBI08.pcf.Z | -adobe-times-bold-i-normal--8-80-75-75-p-47-iso8859-1 |

B

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| timBI18.pcf.Z | -adobe-times-bold-i-normal--18-180-75-75-p-98-iso8859-1 |
| luBS08.pcf.Z | -b&h-lucida-bold-r-normal-sans-8-80-75-75-p-50-iso8859-1 |
| luBS18.pcf.Z | -b&h-lucida-bold-r-normal-sans-18-180-75-75-p-120-iso8859-1 |
| luBS19.pcf.Z | -b&h-lucida-bold-r-normal-sans-19-190-75-75-p-122-iso8859-1 |
| luBS14.pcf.Z | -b&h-lucida-bold-r-normal-sans-14-140-75-75-p-92-iso8859-1 |
| luBS12.pcf.Z | -b&h-lucida-bold-r-normal-sans-12-120-75-75-p-79-iso8859-1 |
| luBS24.pcf.Z | -b&h-lucida-bold-r-normal-sans-24-240-75-75-p-152-iso8859-1 |
| luBS10.pcf.Z | -b&h-lucida-bold-r-normal-sans-10-100-75-75-p-66-iso8859-1 |
| lutBS08.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-8-80-75-75-m-50-iso8859-1 |
| lutBS18.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-18-180-75-75-m-110-iso8859-1 |
| lutBS19.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-19-190-75-75-m-110-iso8859-1 |
| lutBS14.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-14-140-75-75-m-90-iso8859-1 |
| lutBS12.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-12-120-75-75-m-70-iso8859-1 |
| lutBS24.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-24-240-75-75-m-140-iso8859-1 |
| lutBS10.pcf.Z | -b&h-lucidatypewriter-bold-r-normal-sans-10-100-75-75-m-60-iso8859-1 |
| timI08.pcf.Z | -adobe-times-medium-i-normal--8-80-75-75-p-42-iso8859-1 |
| timI18.pcf.Z | -adobe-times-medium-i-normal--18-180-75-75-p-94-iso8859-1 |
| timI14.pcf.Z | -adobe-times-medium-i-normal--14-140-75-75-p-73-iso8859-1 |
| timI12.pcf.Z | -adobe-times-medium-i-normal--12-120-75-75-p-63-iso8859-1 |
| timI24.pcf.Z | -adobe-times-medium-i-normal--24-240-75-75-p-125-iso8859-1 |
| timI10.pcf.Z | -adobe-times-medium-i-normal--10-100-75-75-p-52-iso8859-1 |
| timB12.pcf.Z | -adobe-times-bold-r-normal--12-120-75-75-p-67-iso8859-1 |
| timB24.pcf.Z | -adobe-times-bold-r-normal--24-240-75-75-p-132-iso8859-1 |
| timB10.pcf.Z | -adobe-times-bold-r-normal--10-100-75-75-p-57-iso8859-1 |
| timB14.pcf.Z | -adobe-times-bold-r-normal--14-140-75-75-p-77-iso8859-1 |
| timB08.pcf.Z | -adobe-times-bold-r-normal--8-80-75-75-p-47-iso8859-1 |
| timB18.pcf.Z | -adobe-times-bold-r-normal--18-180-75-75-p-99-iso8859-1 |
| tech14.pcf.Z | -dec-terminal-medium-r-normal--14-140-75-75-c-80-dec-dectech |
| timR12.pcf.Z | -adobe-times-medium-r-normal--12-120-75-75-p-64-iso8859-1 |
| timR24.pcf.Z | -adobe-times-medium-r-normal--24-240-75-75-p-124-iso8859-1 |
| timR10.pcf.Z | -adobe-times-medium-r-normal--10-100-75-75-p-54-iso8859-1 |
| timR14.pcf.Z | -adobe-times-medium-r-normal--14-140-75-75-p-74-iso8859-1 |
| timR08.pcf.Z | -adobe-times-medium-r-normal--8-80-75-75-p-44-iso8859-1 |
| timR18.pcf.Z | -adobe-times-medium-r-normal--18-180-75-75-p-94-iso8859-1 |
| helvB08.pcf.Z | -adobe-helvetica-bold-r-normal--8-80-75-75-p-50-iso8859-1 |

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| helvB18.pcf.Z | -adobe-helvetica-bold-r-normal--18-180-75-75-p-103-iso8859-1 |
| helvB12.pcf.Z | -adobe-helvetica-bold-r-normal--12-120-75-75-p-70-iso8859-1 |
| helvB24.pcf.Z | -adobe-helvetica-bold-r-normal--24-240-75-75-p-138-iso8859-1 |
| helvB10.pcf.Z | -adobe-helvetica-bold-r-normal--10-100-75-75-p-60-iso8859-1 |
| helvB14.pcf.Z | -adobe-helvetica-bold-r-normal--14-140-75-75-p-82-iso8859-1 |
| term14.pcf.Z | -dec-terminal-medium-r-normal--14-140-75-75-c-80-iso8859-1 |
| helvO08.pcf.Z | -adobe-helvetica-medium-o-normal--8-80-75-75-p-47-iso8859-1 |
| helvO18.pcf.Z | -adobe-helvetica-medium-o-normal--18-180-75-75-p-98-iso8859-1 |
| helvO14.pcf.Z | -adobe-helvetica-medium-o-normal--14-140-75-75-p-78-iso8859-1 |
| helvO12.pcf.Z | -adobe-helvetica-medium-o-normal--12-120-75-75-p-67-iso8859-1 |
| helvO24.pcf.Z | -adobe-helvetica-medium-o-normal--24-240-75-75-p-130-iso8859-1 |
| helvO10.pcf.Z | -adobe-helvetica-medium-o-normal--10-100-75-75-p-57-iso8859-1 |
| helvR08.pcf.Z | -adobe-helvetica-medium-r-normal--8-80-75-75-p-46-iso8859-1 |
| helvR18.pcf.Z | -adobe-helvetica-medium-r-normal--18-180-75-75-p-98-iso8859-1 |
| helvR12.pcf.Z | -adobe-helvetica-medium-r-normal--12-120-75-75-p-67-iso8859-1 |
| helvR24.pcf.Z | -adobe-helvetica-medium-r-normal--24-240-75-75-p-130-iso8859-1 |
| helvR10.pcf.Z | -adobe-helvetica-medium-r-normal--10-100-75-75-p-56-iso8859-1 |
| helvR14.pcf.Z | -adobe-helvetica-medium-r-normal--14-140-75-75-p-77-iso8859-1 |
| luBIS14.pcf.Z | -b&h-lucida-bold-i-normal-sans-14-140-75-75-p-92-iso8859-1 |
| luBIS12.pcf.Z | -b&h-lucida-bold-i-normal-sans-12-120-75-75-p-79-iso8859-1 |
| luBIS24.pcf.Z | -b&h-lucida-bold-i-normal-sans-24-240-75-75-p-151-iso8859-1 |
| luBIS10.pcf.Z | -b&h-lucida-bold-i-normal-sans-10-100-75-75-p-67-iso8859-1 |
| luBIS08.pcf.Z | -b&h-lucida-bold-i-normal-sans-8-80-75-75-p-49-iso8859-1 |
| luBIS18.pcf.Z | -b&h-lucida-bold-i-normal-sans-18-180-75-75-p-119-iso8859-1 |
| luBIS19.pcf.Z | -b&h-lucida-bold-i-normal-sans-19-190-75-75-p-122-iso8859-1 |
| ncenBI14.pcf.Z | -adobe-new century schoolbook-bold-i-normal--14-140-75-75-p-88-iso8859-1 |
| ncenBI12.pcf.Z | -adobe-new century schoolbook-bold-i-normal--12-120-75-75-p-76-iso8859-1 |
| ncenBI24.pcf.Z | -adobe-new century schoolbook-bold-i-normal--24-240-75-75-p-148-iso8859-1 |
| ncenBI10.pcf.Z | -adobe-new century schoolbook-bold-i-normal--10-100-75-75-p-66-iso8859-1 |
| ncenBI08.pcf.Z | -adobe-new century schoolbook-bold-i-normal--8-80-75-75-p-56-iso8859-1 |
| ncenBI18.pcf.Z | -adobe-new century schoolbook-bold-i-normal--18-180-75-75-p-111-iso8859-1 |
| symb12.pcf.Z | -adobe-symbol-medium-r-normal--12-120-75-75-p-74-adobe-fontspecific |
| symb24.pcf.Z | -adobe-symbol-medium-r-normal--24-240-75-75-p-142-adobe-fontspecific |
| symb10.pcf.Z | -adobe-symbol-medium-r-normal--10-100-75-75-p-61-adobe-fontspecific |
| symb14.pcf.Z | -adobe-symbol-medium-r-normal--14-140-75-75-p-85-adobe-fontspecific |

B

**Table B-4. Fonts in the 75dpi Directory**

| Filename | Font names |
|---|---|
| symb08.pcf.Z | -adobe-symbol-medium-r-normal--8-80-75-75-p-51-adobe-fontspecific |
| symb18.pcf.Z | -adobe-symbol-medium-r-normal--18-180-75-75-p-107-adobe-fontspecific |
| ncenB08.pcf.Z | -adobe-new century schoolbook-bold-r-normal--8-80-75-75-p-56-iso8859-1 |
| ncenB18.pcf.Z | -adobe-new century schoolbook-bold-r-normal--18-180-75-75-p-113-iso8859-1 |
| ncenB12.pcf.Z | -adobe-new century schoolbook-bold-r-normal--12-120-75-75-p-77-iso8859-1 |
| ncenB24.pcf.Z | -adobe-new century schoolbook-bold-r-normal--24-240-75-75-p-149-iso8859-1 |
| ncenB10.pcf.Z | -adobe-new century schoolbook-bold-r-normal--10-100-75-75-p-66-iso8859-1 |
| ncenB14.pcf.Z | -adobe-new century schoolbook-bold-r-normal--14-140-75-75-p-87-iso8859-1 |
| ncenI14.pcf.Z | -adobe-new century schoolbook-medium-i-normal--14-140-75-75-p-81-iso8859-1 |
| ncenI12.pcf.Z | -adobe-new century schoolbook-medium-i-normal--12-120-75-75-p-70-iso8859-1 |
| ncenI24.pcf.Z | -adobe-new century schoolbook-medium-i-normal--24-240-75-75-p-136-iso8859-1 |
| ncenI10.pcf.Z | -adobe-new century schoolbook-medium-i-normal--10-100-75-75-p-60-iso8859-1 |
| ncenI08.pcf.Z | -adobe-new century schoolbook-medium-i-normal--8-80-75-75-p-50-iso8859-1 |
| ncenI18.pcf.Z | -adobe-new century schoolbook-medium-i-normal--18-180-75-75-p-104-iso8859-1 |
| ncenR08.pcf.Z | -adobe-new century schoolbook-medium-r-normal--8-80-75-75-p-50-iso8859-1 |
| ncenR18.pcf.Z | -adobe-new century schoolbook-medium-r-normal--18-180-75-75-p-103-iso8859-1 |
| ncenR12.pcf.Z | -adobe-new century schoolbook-medium-r-normal--12-120-75-75-p-70-iso8859-1 |
| ncenR24.pcf.Z | -adobe-new century schoolbook-medium-r-normal--24-240-75-75-p-137-iso8859-1 |
| ncenR10.pcf.Z | -adobe-new century schoolbook-medium-r-normal--10-100-75-75-p-60-iso8859-1 |
| ncenR14.pcf.Z | -adobe-new century schoolbook-medium-r-normal--14-140-75-75-p-82-iso8859-1 |
| charBI14.pcf.Z | -bitstream-charter-bold-i-normal--15-140-75-75-p-93-iso8859-1 |
| charBI12.pcf.Z | -bitstream-charter-bold-i-normal--12-120-75-75-p-74-iso8859-1 |
| charBI24.pcf.Z | -bitstream-charter-bold-i-normal--25-240-75-75-p-154-iso8859-1 |
| charBI10.pcf.Z | -bitstream-charter-bold-i-normal--10-100-75-75-p-62-iso8859-1 |
| charBI08.pcf.Z | -bitstream-charter-bold-i-normal--8-80-75-75-p-50-iso8859-1 |
| charBI18.pcf.Z | -bitstream-charter-bold-i-normal--19-180-75-75-p-117-iso8859-1 |

The fonts in the 100 dpi fonti difectory are a subset of the above, and it would not be useful to list them here. The following is the contents of the Speedo directory:

**Table B-5. Fonts in the Speedo Directory**

| Filename | Font names |
|---|---|
| font0648.spd | -bitstream-charter-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| font0649.spd | -bitstream-charter-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| font0709.spd | -bitstream-charter-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| font0710.spd | -bitstream-charter-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| font0419.spd | -bitstream-courier-medium-r-normal--0-0-0-0-m-0-iso8859-1 |
| font0582.spd | -bitstream-courier-medium-i-normal--0-0-0-0-m-0-iso8859-1 |
| font0583.spd | -bitstream-courier-bold-r-normal--0-0-0-0-m-0-iso8859-1 |
| font0611.spd | -bitstream-courier-bold-i-normal--0-0-0-0-m-0-iso8859-1 |

The following lists the files in the F3 directory (Sun only). The F3bitmaps directory contains pre-scaled versions of the same fonts, so we do not list them separately.:

**Table B-6. Fonts in the F3 Directory (Sun only)**

| Filename | Font name |
|---|---|
| NewCenturySchlbk-Bold.f3b | -linotype-new century schoolbook-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| LucidaSans-BoldItalic.f3b | -b&h-lucida sans-bold-i-normal-sans-0-0-0-0-p-0-iso8859-1 |
| NewCenturySchlbk-BoldItalic.f3b | -linotype-new century schoolbook-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| Palatino-BoldItalic.f3b | -linotype-palatino-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| Times-BoldItalic.f3b | -linotype-times-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| Bembo-BoldItalic.f3b | -monotype-bembo-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| Bookman-LightItalic.f3b | -urw-itc bookman-light-i-normal--0-0-0-0-p-0-iso8859-1 |
| GillSans-BoldItalic.f3b | -monotype-gill sans-bold-i-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Lucida-BrightDemiBold-Italic.f3b | -b&h-lucida bright-demibold-i-normal--0-0-0-0-p-0-iso8859-1 |
| Lucida-BrightItalic.f3b | -b&h-lucida bright-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Rockwell-BoldItalic.f3b | -monotype-rockwell-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| NewCenturySchlbk-Italic.f3b | -linotype-new century schoolbook-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Palatino-Italic.f3b | -linotype-palatino-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Bembo-Italic.f3b | -monotype-bembo-medium-i-normal--0-0-0-0-p-0-iso8859-1 |

B

**Table B-6. Fonts in the F3 Directory (Sun only)**

| Filename | Font name |
|---|---|
| ZapfChancery-MediumItalic.f3b | -urw-itc zapfchancery-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Rockwell-Bold.f3b | -monotype-rockwell-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| AvantGarde-DemiOblique.f3b | -urw-itc avant garde-demi-o-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Helvetica-Narrow-Oblique.f3b | -linotype-helvetica-medium-o-narrow-sans-0-0-0-0-p-0-iso8859-1 |
| Lucida-Bright.f3b | -b&h-lucida bright-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| Courier.f3b | --courier-medium-r-normal--0-0-0-0-m-0-iso8859-1 |
| NewCenturySchlbk-Roman.f3b | -linotype-new century schoolbook-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| Palatino-Bold.f3b | -linotype-palatino-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| GillSans.f3b | -monotype-gill sans-medium-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Times-Bold.f3b | -linotype-times-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| LucidaSans-Bold.f3b | -b&h-lucida sans-bold-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Times-Italic.f3b | -linotype-times-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Bookman-DemiItalic.f3b | -urw-itc bookman-demi-i-normal--0-0-0-0-p-0-iso8859-1 |
| LucidaSansTypewriter-Bold.f3b | -b&h-lucida sans typewriter-bold-r-normal-sans-0-0-0-0-m-0-iso8859-1 |
| Courier-Oblique.f3b | --courier-medium-o-normal--0-0-0-0-m-0-iso8859-1 |
| Helvetica-Narrow-Bold.f3b | -linotype-helvetica-bold-r-narrow-sans-0-0-0-0-p-0-iso8859-1 |
| Bembo.f3b | -monotype-bembo-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| Courier-Bold.f3b | --courier-bold-r-normal--0-0-0-0-m-0-iso8859-1 |
| AvantGarde-Book.f3b | -urw-itc avant garde-medium-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| AvantGarde-Demi.f3b | -urw-itc avant garde-demi-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Rockwell.f3b | -monotype-rockwell-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| LucidaSans-Italic.f3b | -b&h-lucida sans-medium-i-normal-sans-0-0-0-0-p-0-iso8859-1 |
| GillSans-Italic.f3b | -monotype-gill sans-medium-i-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Helvetica-Oblique.f3b | -linotype-helvetica-medium-o-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Bookman-Light.f3b | -urw-itc bookman-light-r-normal--0-0-0-0-p-0-iso8859-1 |
| Palatino-Roman.f3b | -linotype-palatino-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| Bembo-Bold.f3b | -monotype-bembo-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| Rockwell-Italic.f3b | -monotype-rockwell-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| Courier-BoldOblique.f3b | --courier-bold-o-normal--0-0-0-0-m-0-iso8859-1 |

**Table B-6. Fonts in the F3 Directory (Sun only)**

| Filename | Font name |
|---|---|
| Helvetica-BoldOblique.f3b | -linotype-helvetica-bold-o-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Helvetica-Narrow-BoldOblique.f3b | -linotype-helvetica-bold-o-narrow-sans-0-0-0-0-p-0-iso8859-1 |
| Lucida-BrightDemiBold.f3b | -b&h-lucida bright-demibold-r-normal--0-0-0-0-p-0-iso8859-1 |
| Helvetica-Bold.f3b | -linotype-helvetica-bold-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| LucidaSansType-writer.f3b | -b&h-lucida sans typewriter-medium-r-normal-sans-0-0-0-0-m-0-iso8859-1 |
| Times-Roman.f3b | -linotype-times-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| GillSans-Bold.f3b | -monotype-gill sans-bold-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Symbol.f3b | --symbol-medium-r-normal--0-0-0-0-p-0-sun-fontspecific |
| Helvetica.f3b | -linotype-helvetica-medium-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| AvantGarde-BookOblique.f3b | -urw-itc avant garde-medium-o-normal-sans-0-0-0-0-p-0-iso8859-1 |
| Bookman-Demi.f3b | -urw-itc bookman-demi-r-normal--0-0-0-0-p-0-iso8859-1 |
| Helvetica-Narrow.f3b | -linotype-helvetica-medium-r-narrow-sans-0-0-0-0-p-0-iso8859-1 |
| LucidaSans.f3b | -b&h-lucida sans-medium-r-normal-sans-0-0-0-0-p-0-iso8859-1 |
| ZapfDingbats.f3b | -urw-itc zapfdingbats-medium-r-normal--0-0-0-0-p-0-sun-fontspecific |

Most modern commercial versions of X, including OpenWindows, include the Display PostScript option. Fonts for this are normally stored as PostScript Type 1 Ascii (with the extention .pfa). Here are the fonts in the Type1 directory for OpenWindows 3.3:

**Table B-7. Fonts in the Type1 (Display PostScript) Directory**

| Filename | Font name |
|---|---|
| UTRG____.pfa | -adobe-utopia-medium-r-normal--0-0-0-0-p-0-iso8859-1 |
| UTI_____.pfa | -adobe-utopia-medium-i-normal--0-0-0-0-p-0-iso8859-1 |
| UTB_____.pfa | -adobe-utopia-bold-r-normal--0-0-0-0-p-0-iso8859-1 |
| UTBI____.pfa | -adobe-utopia-bold-i-normal--0-0-0-0-p-0-iso8859-1 |
| cour.pfa | -adobe-courier-medium-r-normal--0-0-0-0-m-0-iso8859-1 |
| couri.pfa | -adobe-courier-medium-i-normal--0-0-0-0-m-0-iso8859-1 |
| courb.pfa | -adobe-courier-bold-r-normal--0-0-0-0-m-0-iso8859-1 |
| courbi.pfa | -adobe-courier-bold-i-normal--0-0-0-0-m-0-iso8859-1 |

If you wish to add your own Type 1 fonts, you need to use *mkpsres* in addition to setting up the font directory. There are some commercial tools which help you in this process. If you use Adobe software such as Adobe Illustrator, you should use their TypeInstaller program, which lets you install fonts from CD-ROM, browse fonts (see Figure 2-1), download fonts to the printer, and get a list of fonts resident in the printer.

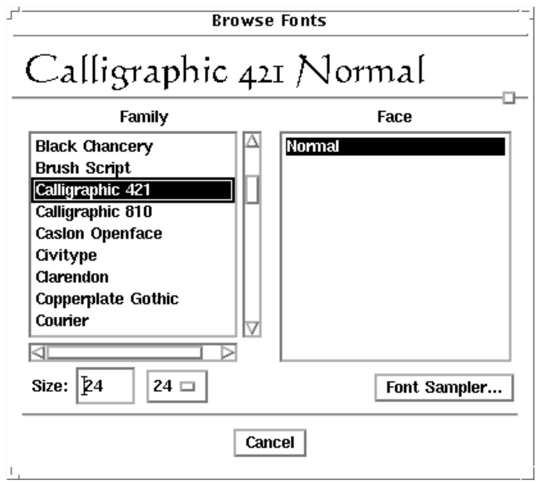


**Figure 2-1. Adobe TypeInstaller's Browse Fonts Screen**

# B.3 Fonts in the xnews Server

On OpenWindows up to Release 3.2, the X server was based on Sun's own server., The standard fonts are stored in the directories shown in Table B-1.

**Table B-8. OpenWindows Release 3 Font Directories**

| Directory | Contents |
|---|---|
| /usr/openwin/lib/fonts | Font masters (.f3b) and families (.ff) for all scalable fonts. |
| */usr/openwin/lib/fonts/afm* | Adobe Font Metrics for other sofrt-ware that needs them.. |
| *./usr/openwin/lib/fonts/100dpi* | Pre-computed bitmaps for standard fonts, 100 dpi. |

## 2.3.1 Font Formats

The OpenWindows server accepts fonts in several formats. The most common are bitmaps, Sun Folio fonts, and Postscript fonts. Since the OpenWindows server is not derived from the MIT server, it does not accept bitmap fonts in the MIT server's internal "SNF" (server normal form) format. Instead, the *convertfont* program is used to convert bitmap files into a form that the server can accept. This is analogous to the use of *bdftosnf* in the MIT server,

B

and is perfectly in keeping with the X standards, since *convertfont* will accept fonts in the X Consortium standard Bitmap Distribution Format (".bdf" files). However, unlike *bdftosnf*, OpenWindows's *convertfont* can also convert from many other formats into the form needed by the OpenWindows server. Here is a summary of the font file name suffixes and their types:

**Table 2-9. OpenWindows Font File Formats**

| Suffix | File Format | Convert font input? | Output ? |
|---|---|---|---|
| .afb | Adobe ASCII format bitmap font file | y | |
| .afm | Adobe ASCII format metric file | n/a | |
| .bdf | MIT (Adobe) BDF 2.1 bitmap file | y | |
| .f3b | Folio Font format file | y | n |
| .fb | NeWS binary file | y | |
| .ff | Font Family file | | |
| .fm | NeWS font metric file | y | |
| .ps | PostScript font file (usually Type Three) | n | |
| .vft | Vfont (Berkeley) bitmap font | y | y |

The Font Family files are made by *bldfamily*, a program used in conjunction with *convertfont*.

As you can see, *convertfont* can read and write most of the important bitmap font file formats. Here is an example of using it on a font file in the MIT BDF format:.

```
% convertfont kbb.bdf
kbb.bdf->./KlBB2424.fb
% ls -l kbb* K*
-rw-r--r-- 1 ian 69632 Jun 23 15:56 KlBB2424.fb
-rw-rw-r-- 1 ian 133938 Feb 4 11:24 kbb.bdf
%
```

Having generated a "font binary" (.fb) file, you must install it in the appropriate font directory, as described in the following section, and run *bldfamily*. See the reference pages for these two programs in Part Three of this guide for details.

### 2.3.2 PostScript fonts and ldf

You can also use PostScript Type Three fonts directly in the OpenWindows server. However, installing them in the font directory does not automatically make them available. Presumably because they are so much more memory-expensive than bitmap and Folio fonts, you must explicitly load them. You could load them by hand using *psh*, but it is more convenient to use a special script called *ldf* (load font). Invoked with no arguments, it lists the available PostScript (.ps) fonts in all the directories in $FONTPATH. For example:

```
% ldf
ldf: loads PostScript defined NeWS fonts.
Usage: ldf fontname
Where fontname may be one of the following:
    fontnamePostScript name
    -----------------------
     Dijkstra  Dijkstra
     HrshCyr  Hershey-Cyrillic
     HrshGoth  Hershey-Gothic
     HrshGrk  Hershey-Greek
     HrshGrkN  Hershey-Greek-Narrow
     HrshGrkp  Hershey-Greekp
     HrshI  Hershey-Italic
     HrshIN  Hershey-Italic-Narrow
     HrshIW  Hershey-Italic-Wide
     HrshRom  Hershey-Roman
     HrshRomN  Hershey-Roman-Narrow
     HrshRomW  Hershey-Roman-Wide
     HrshRomd  Hershey-Romand
     HrshRomp  Hershey-Romanp
     HrshScr  Hershey-Script
     HrshScrN  Hershey-Script-Narrow
     HaeberliWriting
```

The first column is the filename (relative to one of the font directories), and the second, if different,[1] is the name you use to refer to the font. The Hershey fonts are the ubiquitous public-domain Hershey fonts, converted to an outline format for use here. HaeberliWriting is the handwriting font shown in the *Pageview* example in Chapter 9, *Graphics Clients*. It appeared in the USENET newsgroups comp.graphics, comp.fonts, comp.lang.postscript, and several system-specific groups courtesy of Paul Haeberli of Silicon Graphics, <paul@manray.asd.sgi.com>, on 10 July 1990. Silicon Graphics was the first major workstation vendor outside of Sun to offer NeWS support on their workstations. Paul writes: "Here's another outline font in Adobe type 3 format. This is a replica of my handwriting, drawn onto the screen of an IRIS, and auto traced into a PostScript Font."

We've installed it on our reference system in the directory */usr/local/lib/fonts*, which is mentioned in $FONTPATH. So to use it, all I need to is give the command

1. *Ldf* is a shell script; it locates the PostScript name by *grep*ping '^/FontName', so if the font doesn't have its definition of FontName beginning in column one of the line it's on, ldf prints it as blank!

```
ldf HaeberliWriting
```

(in fact this command is in my *.xinitrc* file), and I can use it in any NeWS clients. For example, in the "text demo" mentioned earlier, I can select it from the font menu, and get this:

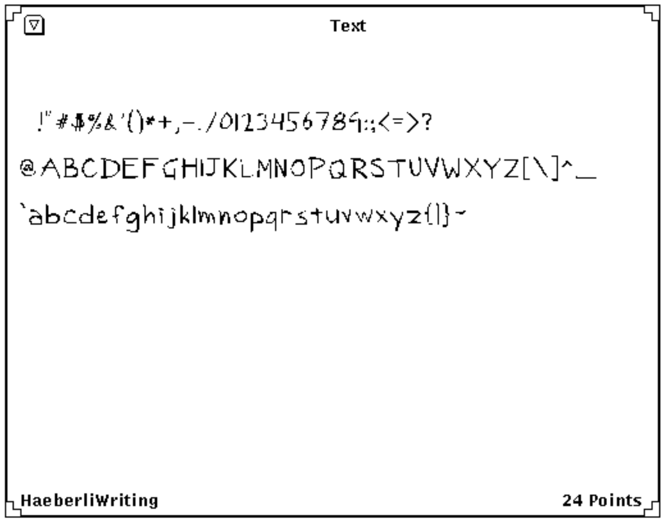


**Figure 2-2. Text Demo Program showing HaeberliWriting**

And, as shown in Chapter 9, *Graphics Clients*, I can use it in normal PostScript. However, these Type 3 fonts do not have X11 names, so they do not show up in an *xlsfonts* listing, and cannot be used by X11 clients:

```
% xfd -fn 'HaeberliWriting-12'
xfd: error: Unable to open font HaeberliWriting-12!
%
```

However, they are a lot of fun if you know how to make use of them. There are many freely-available Type3 fonts available on the Internet and on BBS systems..

## B.4 Font Samples

## B.5 Font Encodings

A font encoding is a representation of the characters in a font and their locations within a font. This is to enable applications to know that the characters they need are available on each font that has a given encoding. The common font encodings used with X11 are described in Table B-10, and are pictured on the following pages.

**Table B-10. Font Encodings used with X11**

| Name | Description |
|---|---|
| iso8859-1 | Extended ASCII character set |
| iso8859-8 | Same with additional characters |
| adobe-fontspecific | For use by Adobe fonts |
| dec-dectech | For use by DEC fonts |
| jisx0201.1976 | Japanese character set |
| jisx0208.1983 | Japanese character set, revised |
| ksc5601.1987 | Korean/Asicn character set |
| sun-fontspeci | For use by Sun special-purpose fonts |
| sun-open look cursor | Cursors for use with Sun OPEN LOOK software |
| sun-open look glyph | Picture elemeents used by Sun OPEN LOOK software |

The following figures show xfd displays of the standard font encodings (just the first page of wide character sets is shown). The shell script which produced these bitmaps, *show-encodings*, is included in the *src* directory on the CD-ROM..

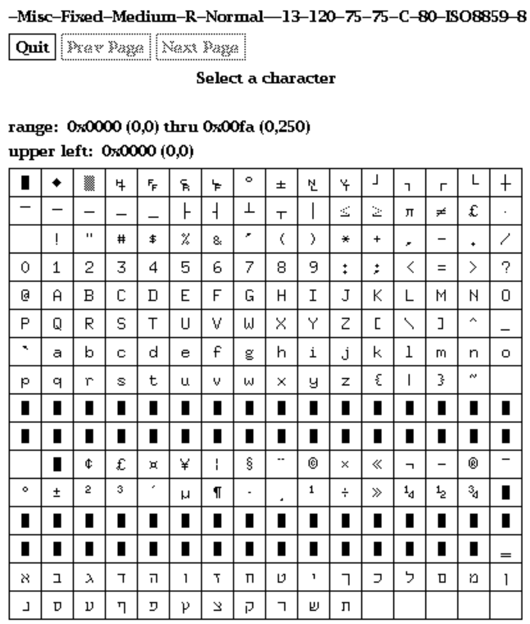


**Figure 2-3. ISO8859-1 Encoding**

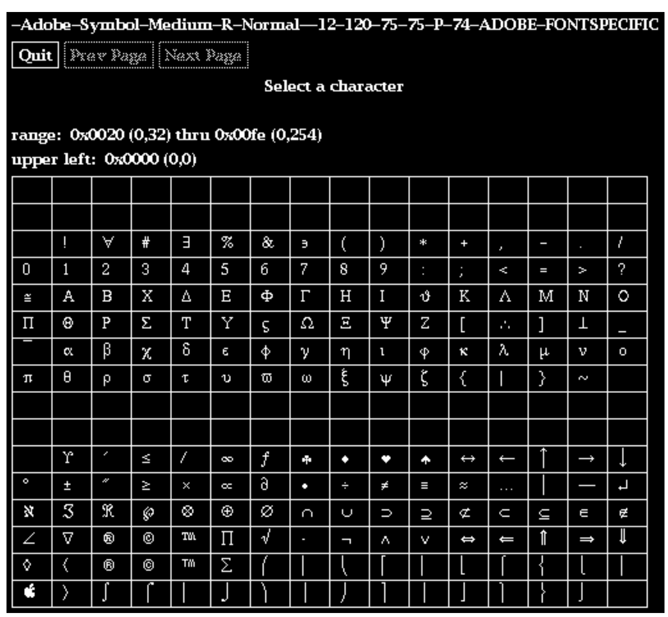


**Figure 2-4. Adobe-Fontspecific Encoding**

B

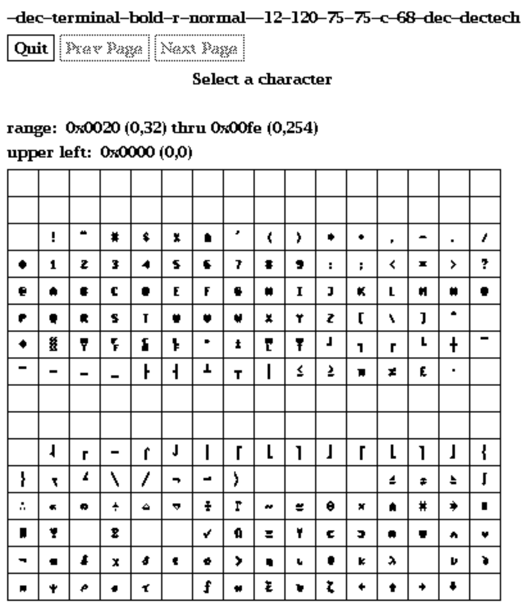


**Figure 2-5. dec-dectech encoding**

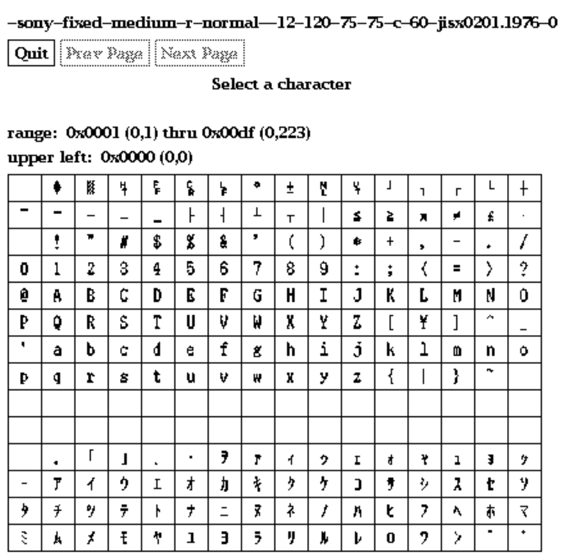


**Figure 2-6. JIS0201-1976 Encoding**

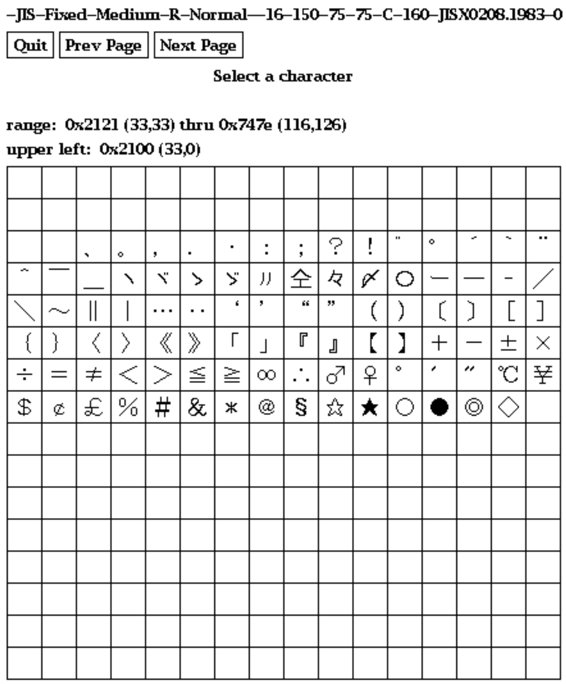


**Figure 2-7. jisx0208.1983 Encoding**

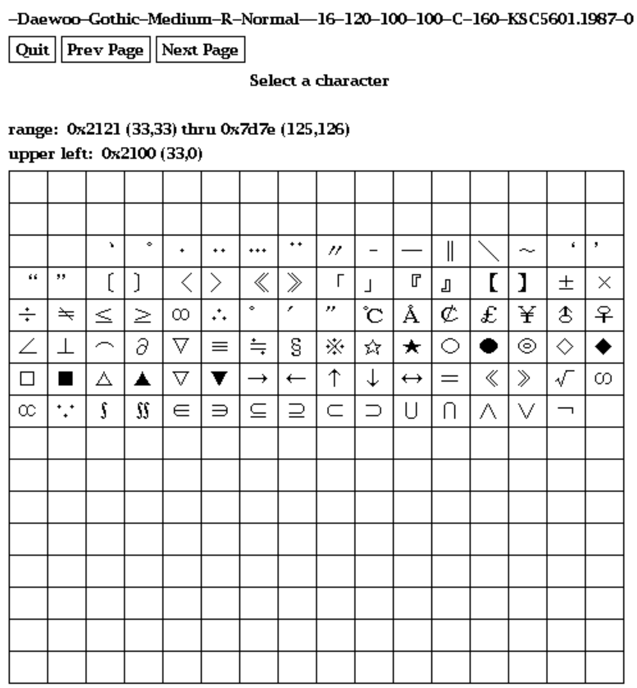


**Figure 2-8. ksc5601.1987 Encoding**

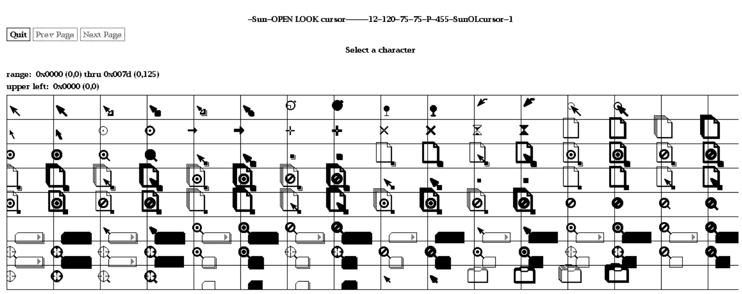


**Figure 2-9. Sun OPEN LOOK Cursor Encoding**

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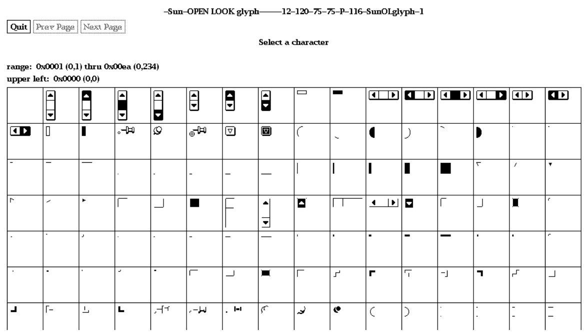


**Figure 2-10. Sun OPEN LOOK Glyph Encoding**