

ABOUT THE 9.07 DISTRIBUTION

RICHARD KOCH

1. INTRODUCTION

The Ghostscript 9.07 install package should work on Leopard and higher systems, for both Intel and PPC.

Early MacTeX distributions of TeX for OS X installed three packages which came directly from Gerben Wierda's i-Installer packages: Ghostscript, ImageMagick, and Font Utilities (primarily FontForge and the Fondu Mac Font cli Tools). Starting with MacTeX-2008, Gerben's packages were replaced with packages compiled from scratch. Ghostscript and ImageMagick were compiled directly and the second package was pared down to the single utility "convert." The Font Utilities package was omitted entirely.

The most important package is Ghostscript. I have constructed an install package for the most recent release, Ghostscript 9.07. The source code comes from <http://www.ghostscript.com>, released on February 14, 2013. (Ghostscript fonts came from <http://sourceforge.net/projects/gs-fonts/>, released on December 24, 2003. However, recent versions of Ghostscript contains compressed copies of the fonts inside the binary, so the font folder is no longer needed.)

I'd like users to test this release, particularly since several different installations need to be tested: PPC on system 10.5 and Intel on systems 10.5, 10.6, 10.7, and 10.8; each installation has a version compiled with X11 support and a version compiled without X11 support.

Gerben installed two versions of the ghostscript binary: gs-X11 with X11 support and gs-noX11 without X11 support. At install time, he set the symbolic link "gs" to point to the appropriate binary, depending on whether the user has installed X11 or not. This package does the same.

2. WHAT IS INSTALLED

Ghostscript binaries are installed in `/usr/local/bin`. Ghostscript support files are installed in `/usr/local/share/ghostscript/9.07` and man pages are placed in `/usr/`

Date: April 12, 2013.

`local/share/man`. (Ghostscript fonts were installed in `/usr/local/share/ghostscript/fonts`, but aren't any longer.)

3. THE BINARIES

The install package contains four binaries, `gs-X11`, `gs-noX11`, `gs-X11-64Bit`, and `gs-noX11-64Bit`. The first two are universal binaries with 32 bit code for Intel and 32 bit code for PPC. The second two are universal binaries with Intel 32 bit and 64 bit code. When the package is installed on Leopard machines, the `gs-X11-64Bit` and `gs-noX11-64Bit` binaries are removed. Then a symbolic link named `gs` is created pointing to either `gs-X11` or `gs-noX11` depending on whether X11 is installed or not.

On Snow Leopard or higher, `gs-X11` and `gs-noX11` are removed and `gs-X11-64Bit` and `gs-noX11-64Bit` are renamed `gs-X11` and `gs-noX11`. Then the `gs` symbolic link is created as before. The result is that machines running Snow Leopard or higher run 64 bit code, except for a few early Intel machines which only contained 32 bit processors. Note that on Snow Leopard and Lion, X11 is automatically installed, so the `gs-X11` binary runs. But X11 is not automatically installed in Mountain Lion, so `gs-noX11` may well be activated there.

At the end of installation, all machines will contain `gs-X11` and `gs-noX11` and a symbolic link `gs` to the appropriate binary. Notice that a user who does not have X11 but later installs it can reset the `gs` link and get a ghostscript with X11 support.

4. PROVIDING ACCESS TO TEX FONT FILES

In 2012, David Arnold reported that MetaPost can create illustrations containing computer modern fonts. If the output is later processed in TeX + DVI mode, these fonts need to be accessed by Ghostscript. Previous versions of Ghostscript in MacTeX substituted default postscript fonts for these missing computer modern fonts.

Bruno Voisin studied this problem extensively and provided a natural and elegant solution to the problem. The solution involves adding two files named “Fontmap” and “Fontmap.cmr” to `/usr/local/share/ghostscript/9.07/Resource/Init` and adding symbolic links to the pfb files in TeX to `/usr/local/share/ghostscript/9.07/Resource/Font`. For example, a typical symbolic link is

```
blex.pfb->/Library/TeX/Root/texmf-dist/fonts/type1/public/belleek/blex.pfb
```

Note that this link passes through the `/Library/TeX/Root` link provided by the TeX Dist data structure, and thus causes Ghostscript to use fonts in the currently active TeX distribution. This method isn't entirely foolproof if TeX Live should change the location of important pfb files. But the Ghostscript package in MacTeX will be adjusted for the latest release of TeX Live, so the links should satisfy most users.