

Technote 1143

Introducing the LaserWriter 8 Driver Version 8.6

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This Technote outlines some of the new features and changes that Apple has made with the LaserWriter 8 version 8.6 release. It describes new utilities, expanded technology support, and what this means to you, the developer. LaserWriter 8.6 is supported on Mac OS 7.6.1 and above, and on 68040 and PowerPC machines only.

ATSUI (Apple Type Services for Unicode Imaging)

LaserWriter 8.6 offers direct to PostScript translation of the new Apple Type Services calls. These calls, along with LaserWriter 8.6, offer precise placement of glyphs, large-character set support, and text transformations. Without adding ATSUI support to the driver, an ATSUI document will print as a bitmap and thus slow down printing--LaserWriter 8.6 takes care of this problem. Please see the [ATSUI documentation](#) for more information on the new APIs.

Download Manager

Today's desktop printers are capable of downloading both PostScript and Encapsulated PostScript (EPS) files. This capability is an important feature which we have improved. In LaserWriter 8.6, when downloading a DSC-conformant PostScript or EPS file, the new PostScript downloader will supply fonts used, but not included, in the document or available in the printer. LaserWriter 8.6 includes downloaders for the following file formats: PostScript, Encapsulated PostScript (EPS), PICT, and JPEG. In the future, Apple is considering adding support for PDF and TIFF file formats. An API has been provided to allow third parties to create plug-ins for other file formats. See [Technote 1171 "How to Write a Converter Plug-in for the Download Manager"](#) for more information on this API.

Note:

If the Download Manager cannot handle the file dropped on it, desktop printing will act as it does today; it will ask the document's owning application to print the document.

External Custom Hoses

LaserWriter 8.6 is capable of printing over a variety of communications channels. Built into LaserWriter 8.6's `PrintingLib` is support for printing over PAP, LPR, and an IrDA channel. In the future, Apple is considering adding other channel support such as USB and FireWire. The code fragments in `PrintingLib` that support these communications methods are called "hoses." LaserWriter 8.6 supports the use of hoses that live outside of `PrintingLib` and instead are in the new `Printing Plug-ins` folder. By writing an external hose and by creating a suitable desktop printer, developers can capture the output from the LaserWriter 8.6 driver and stream it over any communications medium they desire. See [Technote 1144 "Writing Custom Hoses for LaserWriter 8.6"](#) for more information.

IrDA Support

When running on suitable hardware, LaserWriter 8.6 is now capable of printing over an IrDA link to an IrDA-capable printer. LaserWriter 8.6 currently supports the following hardware:
Printers:

Hewlett Packard LaserJet 5MP and 6MP printers. Also tested on the Lexmark Optra 1650 with MarkNet S Tri-Port Adaptor.

Should work on all other IrDA-compatible printers who follow the [IrDA specification](#).
PowerBooks:

Tested and works on the PowerBook 2400, 3400, G3, and G3 Series.

Support for Mac OS 8.x Features

Appearance Manager

In order for LaserWriter 8's interface elements to better fit with Mac OS 8.x and the Appearance Manager, LaserWriter 8.6 has made changes to the driver. LaserWriter 8.6 now dynamically lays out the popups, given the current system font and uses the system's popup menus.

ColorSync 2.5 Support

LaserWriter 8.6 uses the new profile iteration routines in ColorSync 2.5. See the updated [ColorSync 2.5 documentation](#) for more information on these routines.

Desktop Printing

LaserWriter 8.6 adds better integration with Finder's desktop printing. LaserWriter 8.6 now spools its documents into the desktop printer folder (resolving aliases) instead of into the PrintMonitor Documents folder.

Font Manager

To mirror the support for `sbit`-only fonts added to the Font Manager, LaserWriter 8.6 has added support for printing `sbit`-only fonts. For more information on `sbit` fonts, please see Apple's [font web site](#).

Navigation Services

LaserWriter 8.6 also makes use of Navigation Services APIs for selection of PPDs (when Navigation Services is available). If Navigation Services is not available, LaserWriter 8.6 defaults to its old behavior.

PPD FindFolder

With the release of LaserWriter 8.6, the driver uses the new `FindFolder` selector '`ppdf`' that was introduced in Mac OS 8.0. The driver uses this selector to install and find PPDs in the Printer Descriptions folder.

Note:

The Printer Descriptions folder is located in different places for different versions of the Mac OS:

7.x	System Folder: Extensions: Printer Descriptions
8.0 and 8.1	System Folder: Printer Descriptions (LW 8 looks in System Folder: Extensions: Printer Descriptions)
8.5	System Folder: Extensions: Printer Descriptions

Euro Glyph

LaserWriter 8 has always maintained a set of glyphs which, when printed, are pulled from the Symbol font rather than from the font used on the Macintosh. LaserWriter 8.6 adds the new Euro glyph to this set when the font uses the Mac Standard encoding (bit 1 of the Font Classification work in the font's FONDR resource is set). When an application prints using the Euro glyph in a given font, LaserWriter 8.6 switches to the Symbol font and prints the glyph in that font. PostScript Level 3 printers have the Euro glyph in the Symbol font, and therefore present no special problems. Printers having interpreters prior to Level 3 do not contain the Euro glyph and to compensate, LaserWriter 8.6 downloads a Euro glyph character and maps it into the resident Symbol font. See [Technote 1146: "LaserWriter 8 and Fonts"](#) for more information on character encodings. See [Technote 1140 "The Euro Currency Symbol"](#) for more information on Apple's support for the Euro symbol in its OS releases.

Transferable Preferences Files

Due to numerous requests from users, Apple has added the ability to transfer LaserWriter 8 preferences files from machine to machine. What this means is that you can now use a tool like RevRdist to clone your disk across several machines while maintaining your LaserWriter preference settings.

PrGeneral opcodes

Table 1 lists the current PrGeneral opcodes that are implemented and supported by the LaserWriter 8.6 driver. With the Japanese-localized LaserWriter 8.6 release, the driver added a PrGeneral call for partial font downloading.

Table 1	Opcode Operation	Minimum LW 8 version
4	getRslDataOp	8.0 and above
5	setRslOp	8.0 and above
6	draftBitsOp	8.0 and above
7	noDraftBitsOp	8.0 and above
8	getRotnOp	8.0 and above
9	NoGraySc1	not used by LaserWriter 8
10	getPSInfoOp	8.0 and above
11	PSIntentionsOp	8.0 and above
12	enableColorMatchingOp	8.5.1 and above
13	registerProfileOp	ColorSync 1.x only; not used by LaserWriter 8
14	PSAdobeOp	8.0 and above
15	PSPrimaryPPDOp	8.0 and above
16	kLoadCommProcsOp	8.0 and above
17	kUnloadCommProcsOp	8.0 and above
18	kExtendPrintRecOp	8.4 and above
19	kGetExtendedPrintRecOp	8.4 and above
20	kPrinterDirectOpCode	not used by LaserWriter 8
21	kSetExtendedPrintRecOp	8.4 and above
22	kPrVersionOp	8.4 and above
23	kDTPGetPrinterInfo	not used by LaserWriter 8; 3rd party desktop printing
24	kDTPIsSamePrinterInfo	not used by LaserWriter 8; 3rd party desktop printing
25	kDTPSetDefaultPrinterInfo	not used by LaserWriter 8; 3rd party desktop printing
26	kPrEnablePartialFonts	8.6--Japanese localization only

Please refer to ["Meet PrGeneral, the Trap that Makes the Most of the Printing Manager"](#) in *develop* Issue 3 for more information on PrGeneral.

Note:

The ability to download partial fonts containing only the glyphs used within a document has been added to Japanese localization of the LaserWriter 8.6 driver. Partial font support is only provided for applications that take advantage of the new ATSUI APIs. Please be aware that applications that use the `PostScriptBegin` picture comment (and its variants) will not be provided with partial fonts unless they use the new `PrGeneral` opcode, `kPrEnablePartialFonts`. Many of these PostScript applications rely upon the LaserWriter driver to download a complete font. A new `PrGeneral` call has been created so that these applications can enable partial font downloading. LaserWriter 8 "trusts" the `kPrEnablePartialFonts` `PrGeneral` opcode, so you should not be embedding any other font data comments in the PostScript you download. The partial font downloading occurs only when background printing is enabled. This is due to the fact that the driver needs to know the set of glyphs that the job will use when it begins to emit PostScript.

PrintingLib libraries

PrintingLib 8.6 contains a large number of code fragments, some of which have been documented for use by developers. The code fragments discussed in other documents include:

Settings Library

The Settings Library within PrintingLib provides access to the printer database maintained by LaserWriter 8. Developers can obtain the driver's current information about and current settings for a given desktop printer, and can enumerate known desktop printers. See [Technote 1113: "The Settings Library"](#) for more information.

The Download Manager

The Download Manager enables developers to convert file formats to PostScript and to transmit the PostScript file to a printer. PrintingLib includes support for PostScript, EPS, JPEG, and PICT file formats, but the Download Manager allows the addition of external code fragments in order to support other file formats. See [Technote 1169 "The Download Manager"](#) and [Technote 1171 "How To Write a Converter Plug-in for the Download Manager"](#) for more information.

The Printing Plug-ins Manager

Shared libraries containing code fragments can be placed into the new "Printing Plug-ins" folder in order to extend the base functionality present in PrintingLib. The Printing Plug-ins manager gives developers a way in which to enumerate and search the capabilities of these plug-ins. See [Technote 1170 "Printing Plug-ins Manager"](#) and [Technote 1144 "Writing Custom Hoses for LaserWriter 8.6"](#) for details.

Summary

LaserWriter 8.6 has a new gray-scale look and uses the Appearance manager controls. In addition to this new look, LaserWriter 8.6 supports ATSUI's powerful new text features and improves its modularity through support for external code fragments. We suggest you try it out!

Further References

Technotes mentioned in the note are or will be available from [Apple's Technote web site](#):

- [Inside Macintosh : Imaging With QuickDraw](#)
- [Inside Macintosh : Advanced Color Imaging on the Mac OS](#)
- [develop Issue 3: "Meet PrGeneral, the Trap that Makes the Most of the Printing Manager"](#)

Downloadables



[Acrobat version of this Note \(K\).](#)

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