

TECHNOTE: Writing PPD Files for Use With LaserWriter 8, version 8.4.1

By Dave Polaschek
dpolasch@apple.com
Apple Developer Technical Support (DTS)

LaserWriter 8.4 offers a new graphical way to customize the interface presented to the user for selecting printer-specific options that are defined in PostScript Printer Description (PPD) files. This Technote describes how to access those features.

This Technote assumes you are already familiar with the PPD specification. If you are not familiar with how to make PPD files, you should first consult the PostScript Printer Description File Format Specification Version 4.3, which is available from Adobe Systems, Inc. Version 4.2 of the spec is at http://www.adobe.com/PDFs/TN/5003.PPD_Spec_v4.2.pdf

Resource IDs

Resource IDs must be in the range of driver-owned resource, i.e., -8160 to -4090, but the resources used in your PPD file should be in the ID range of -7500 to -7000 to avoid conflicts with future revisions of the LaserWriter driver.

Icons

The four icon families in the PPD files are optional, but when they are there, the LaserWriter driver and Desktop Printing software will use them to represent a printer setup with that PPD file. Three additional icon families are pointed to by the BNDL resource of the PPD file. The types for these icons are 'dpnn' for the default icon (probably the same as the custom finder icon you provide), 'dpcn' for the selected version of the icon (with a bold border around it), and 'dpna' for the not available version of the icon (the crossed-out version of the icon). Even though Apple uses the IDs -7189, -7188 and -7187 for these icon families, and resource ID -7192 for the 'BNDL' resource, these ID numbers are not reserved, and developers are encouraged to use them.

Customizing the Panels Within the Print Dialog

The items displayed within the Printer Specific panel of the print dialog are controlled by resources within the PPD file. There are two main resources you need to define: the 'ppdT' and an associated 'DITL' resource. A template for the 'ppdT' resource is contained within the LaserWriter 8.4 driver. The 'ppdT' resource you create needs to have the signature set to 'rbil' and the version set to 1. The 'DITL' resource must have the same ID as the 'ppdT' resource. Also note that the coordinates within the 'DITL' resource are local to the print dialog, and you have the ability to construct a 'DITL' which would draw items over areas used by the driver. Don't do that. It will be a future compatibility problem.

Adding Items to the 'ppdT' Resource

Once you've created the base resource, you can add items to it. Items are added as follows:

- Checkboxes are defined by an item number, and the keyword which specifies which option they control. The Item number corresponds to the item number within the DITL. The keyword matches the name of an option as defined with the *OpenUI keyword in the PPD file.
- Radio Buttons are defined by a range of item numbers, which must be contiguous and a keyword.
- Menus are defined by an item number and a keyword. The item number must point to a control item within the 'DITL', which corresponds to a 'CNTL' resource which references the built-in Popup Menu CDEF.
- PICT controls are the most complicated to define. The item number corresponds to a user item within the DITL that has the correct placement and size. The color-offID is the ID of a PICT resource to be displayed when the option is not chosen,

and the monitor depth is 8-bit color or greater. The 1bit-offID is used when monitor depth is less than 8-bit color. The onID entries are similar, except for when the option is chosen. The forbiddenID entries are used when the option cannot be chosen due to a UIConstraint within the PPD file (usually the same as the off choice, except with an added red X through the picture). The main entry again corresponds to the keyword within the PPD, and the option entry corresponds to the option which is the "ON" state for that keyword.

Adding Balloon Help

You can add balloon help to the items described in your DITL in the same way you would for dialog items in an application. You add a help item to the DITL, it points to a 'hdlg' and that gets appended to any already existing balloon help. The only thing to remember is that the PICT controls used by LaserWriter 8 don't actually have multiple states, so you need to write the help string for those items so it covers all the possible cases. For more information on Balloon Help and the 'hdlg' resource, see *Inside Macintosh: More Macintosh Toolbox*, Chapter 3. Make sure that your help resources are also in the range specified above.

Summary

That's all there's to it. The best examples available are the PPDs supplied with LaserWriter 8.4 for use with Apple printers.

Further Reference

- Adobe PostScript Printer Description Specification, pg. 1
- PostScript Language Reference Manual, 2nd Edition

Acknowledgments

Thanks to Steve Simon and Rich Blanchard.