

Adobe PostScript®



Adobe PostScript was first developed in the early 1980s at Xerox PARC by John Warnock and Chuck Geschke, CEO and president of Adobe. Not only did PostScript give birth to Adobe Systems, but it started a revolution that continues to this day. PostScript is the software for describing to a printer the appearance of a page, including text, graphics, and scanned images. Adobe works with more than 70 industry-leading manufacturers to produce more than 300 output devices that bear the Adobe PostScript mark of excellence. PostScript Level 3 was announced in April of 1997.

Contents

Feature Techniques	542
Unexpected Results	557
General Information	562
PSPrinter	566

Adobe PostScript®

Feature Techniques, 542; Unexpected Results, 557; General Information, 562

Feature Techniques

MAC OS / WINDOWS / UNIX

Understanding PostScript Error Messages

If a PostScript file fails to print because of an error, the experience can be frustrating, time-consuming, and, ultimately, expensive. Because the printing systems that support the PostScript language are complex, their error messages can be varied and difficult to diagnose. With some knowledge of the PostScript language and the environment in which it operates, though, these experiences can be reduced or even eliminated. This appendix provides a basis for understanding PostScript errors and ways to interpret and correct them.

WHAT IS A POSTSCRIPT ERROR?

When you print a page on a desktop printer or a RIP (see “What Is a RIP?” page 101) that supports the PostScript language, the printer or RIP executes an electronic file that is a representation of the page in PostScript code. More accurately, the printer or RIP contains software called the PostScript interpreter, which is responsible for executing the PostScript file and creating a second representation of the page (often called the raster image) that can be understood by a printer engine. The engine then prints the raster image on paper or film.

When the interpreter executes a PostScript file, the usual result is that the corresponding page or pages are printed by the printer engine. If there is something wrong with the PostScript code in this file, however, the interpreter will detect an error—a PostScript error. When such an error occurs, the interpreter executes special code, called an error handler, designed to address that particular error. The error handler records information in the RIP’s memory about the error and then executes a command to stop processing the file.

At this point, the PostScript code in the file may ignore the command to stop processing so that the interpreter may continue executing the file. For example, a file’s request for duplex (two-sided) printing on paper will likely cause an error if it’s sent to a printer that prints on only one side of the paper. If so, the internal error handler for that error

executes the command to stop the job. But the PostScript file may ignore the command to stop as well as the request for duplex printing (the source of the error). Although the job will not fail in this case, it will print only single-sided pages. If the PostScript code does not ignore the command to stop, the interpreter processes the information recorded earlier by the internal error handler, which usually produces a message that looks like this:

```
%%[ Error: <error name>; OffendingCommand:
<command name> ]%%
%%[ Flushing: rest of job (to end-of-file)
will be ignored ]%%
```

The first line shows the name of the error as well as the name of the PostScript command that caused the error. The second line states that the rest of the job will not be processed. (This particular error message is very useful, although you may not always be able to see it. See “Displaying Error Messages,” page 102, for information on how to find error messages.) The interpreter will then stop executing the file.

The RIP may create other error messages that look like the one shown above. If the messages have a similar format but do not contain the words Error and OffendingCommand, however, they are very likely not PostScript errors. For example, you may see a message containing the label PrinterError, such as:

```
%%[ PrinterError: Media jam ]%%
```

This type of message does not represent an error in the PostScript file detected by the interpreter. It represents a different type of problem that was detected by some other part of the system, in this case by the printer engine.

UNDERSTANDING ERROR MESSAGES

Although you need to take some action to correct a PostScript error, you may not understand what the error is when you see the message corresponding to that error.

```
%%[ Error: limitcheck; OffendingCommand:
sethalftone ]%%
```

If you see this message, for instance, you know that an error called limitcheck occurred when a command called sethalftone was executed in the file, but this message doesn’t tell you much about the source of the problem. In some cases, you may get a clue from the name of the error or command involved. In this example, you might guess that the error was produced by some limit that was reached while attempting to set up a halftone screen.

You can make more educated guesses by learning about the types of commands and errors contained in the PostScript language. The PostScript Language Reference Manual (second edition) is the official specification for the PostScript language. It contains descriptions of all of the standard commands and errors contained in Level 2 of the PostScript language. The standard commands are commonly referred to as operators. Section 8.1, “Operator Summary,” groups all of the operators in the PostScript language into twenty-four categories. It also contains a brief summary of the thirty possible PostScript errors.

When analyzing an error message, look first at the offending command to determine what type of operation failed. Then look at the name of the error to determine what kind of failure occurred. In both steps, use Section 8.1 as a guide. The error name alone is meaningless without also knowing the offending command. For example, a `limitcheck` error message means that some limit in the RIP’s design was exceeded; by itself, however, a `limitcheck` error message tells you nothing about which limit or even what kind of limit was exceeded.

The offending command.

The `OffendingCommand` statement identifies which PostScript operator failed. Operators may be divided into two groups: those that influence the appearance of a page and those that do not. In particular, operators in the first group influence the appearance of the three types of objects supported in the PostScript language: text, graphics, and images (images include rasterized artwork that has been generated digitally or scanned to capture pixel data). The distinction between the two groups is important: You may be

able to correct errors resulting from operators in the first group by modifying the document from within the application that you used to create it. Operators in the second group, however, are used for the programming aspects of a PostScript file and require a great deal of experience with the PostScript language to understand and troubleshoot.

The first group of operators can be broken down further using the categories in Section 8.1 of the PostScript Language Reference Manual, which are described in Table 1: Graphics State, Device-Independent; Graphics State, Device-Dependent; Path Construction; Painting; Form and Pattern; Device Setup; and Character and Font. The large number of operators represented by these seven categories may be overwhelming, but bear in mind that within each category, some operators are seldom used. For example, the Painting operator `fill` occurs often because it is used to paint graphics; however, the Painting operator `uofill` is rarely used because it is more specialized.

When you see an operator name in an error message’s `OffendingCommand` statement, find its category in Section 8.1. This will help you identify the type of operation that produced the error. For example, the `show` operator is in the Character and Font category; therefore, if you see an error whose offending command is the `show` operator, you should suspect that there is a problem with the text in the PostScript file. Table 1 (page 102) lists the seven operator categories, along with their descriptions and common examples.

You may see some commands in error messages that you will not find in the PostScript Language Reference Manual because they are not standard PostScript com-

TABLE 1: POSTSCRIPT OPERATORS

OPERATOR CATEGORY	CATEGORY DESCRIPTION	SAMPLE OPERATORS	OPERATOR DESCRIPTIONS
Graphics State, Device-Independent	Used to control how objects are painted; results should not vary from one type of output-device engine to another	<code>setcolor</code> <code>setlinewidth</code>	Establishes the color for an object to be painted Establishes the thickness of painted lines
Graphics State, Device-Dependent	Used to control how objects are painted; results usually vary from one type of output-device engine to another	<code>sethalftone</code> <code>setflat</code>	Establishes a requested halftone screen Establishes the flatness of curves
Path Construction	Used to create graphics such as polygons and curves	<code>lineto</code> <code>curveto</code> <code>arc</code>	Draws a line Draws a curve Draws part or all of a circle
Painting	Used to paint graphics and images	<code>stroke</code> <code>fill</code> <code>image</code>	Paints the outline of graphics Paints the interior of graphics Paints images
Form and Pattern	Used to generate repeatable forms and patterns	<code>setpattern</code> <code>execform</code>	Establishes a pattern Paints a form
Device Setup	Used to set up printing attributes	<code>setpagedevice</code>	Installs requested device features
Character and Font	Used to manipulate fonts and parts of fonts, such as characters	<code>findfont</code> <code>show</code>	Looks for and loads a requested font Paints a character or group of characters

TABLE 2: POSTSCRIPT ERROR MESSAGES

ERROR NAME	USUAL MEANING	OFFENDING COMMANDS	COMMON PROBLEMS AND SOLUTIONS
<fontname> not found, using Courier.	The requested font was not supplied by the RIP or was not within the PostScript file. (This error message is formatted differently; it has no offending command.)	Not applicable	Download the missing font to the RIP, include it in the document, or choose a different font.
configurationerror	A requested feature setting cannot be satisfied; often accompanied by an extra <code>ErrorInfo</code> field in the error message indicating the requested feature.	setpagedevice	Do not request the feature from the printer driver, use a different printer support file, or configure the RIP to support the feature.
dictfull	There is no more room in PostScript data structures called dictionaries; this problem is more common with PostScript Level 1 than with Level 2.	store, put, def	These operators store objects in dictionaries; error requires advanced debugging.
invalidaccess	An attempt was made to put an object into a read-only data structure.	store, put, def	These operators store objects in various PostScript data structures; error requires advanced debugging.
invalidfont	There was an attempt to install a malformed or an improperly licensed font in the RIP's memory.	findfont, definefont, selectfont	Replace or reinstall the font on the RIP and/or computer.
invalidrestore	There is a programming problem with memory management.	restore	There is likely a problem with the printer driver; requires advanced debugging.
ioerror	An input/output error occurred while the RIP was processing a file; the file in question could be the actual job or another file referenced by the job file.	image, colorimage Random characters	The amount of data supplied is incorrect; scan, edit, or import the image again. These characters may indicate a problem with the communications link; move or replace the communications line, check communications settings, disable spoolers, or run the job again.
limitcheck	An implementation limit was exceeded.	show, fill, stroke, clip, other painting operators sethalftone image	A graphic is too complex (this occurs very rarely when using PostScript Level 2); increase flatness, split paths, simplify the graphic, or lower the printer engine's resolution. The internal representation of the requested halftone screen is too large or too small; consult your RIP vendor. The image is too large, its resolution is too high, or it cannot be rotated. Reduce the size or resolution, rotate the image at a different angle, or rotate it in an image editing application such as Adobe Photoshop.

mands. This situation is much more common in products that support only Level 1 of the PostScript language than in those that support Level 2 as well (see “PostScript Level 2,” page 104).

The error name.

After identifying the offending command in the error message, note the error name that was also reported in the message. The more common errors and their meanings are listed in Table 2 (pages 104-105), along with examples of offending commands and common problems and solutions for those combinations of errors and offending commands. Some of the examples are more complicated programming errors that require advanced debugging techniques and knowledge of the PostScript language to evaluate and correct. In such a case, you should call a local expert, the application vendor, or your RIP vendor for assistance.

You will find that the solutions offered in Table 2 do not always apply to the errors that you experience. There are too many possible errors—offending command combina-

tions, circumstances that produce errors—and possible solutions to list in a single table. Instead, this information is intended to give you an idea of the usual meanings of common errors and how they vary.

To learn more about operators and errors, see Section 8.2, “Operator Details,” of the PostScript Language Reference Manual; the rest of the manual describes the principles of operation regarding PostScript operators and errors. There are also a number of books and classes that discuss the PostScript language in more practical terms (see “Suggested Reading” and “Training Courses and Seminars,” page 108).

DISPLAYING ERROR MESSAGES

After the interpreter creates an error message, several things can happen to it, depending on the printer or RIP you are using. The message, perhaps in a different format than described earlier, may be recorded somewhere in the RIP, or it could be sent back to the computer that sent it to the RIP.

TABLE 2: POSTSCRIPT ERROR MESSAGES (CONTINUED)

ERROR NAME	USUAL MEANING	OFFENDING COMMANDS	COMMON PROBLEMS AND SOLUTIONS
rangecheck	A value provided to the operator was outside the acceptable range.	setpapertray (Level 1) Several operators	The requested paper tray does not exist; request a different tray from the printer driver. Requires advanced debugging
stackoverflow	This is a programming problem concerning the filling up of an internal data structure called the operand stack.	Several operators	May indicate a printer driver problem or interference from a separate utility; requires advanced debugging.
stackunderflow	The operator expected one or more values to be available on the operand stack, but there were none.	Several operators	May indicate a printer driver problem or interference from a separate utility; requires advanced debugging.
timeout	A time limit for an operation has been exceeded.	Several operators	A time-out threshold is set too low or there is a communications problem. Use administration software or the printer driver to reset the time-out value on the RIP, or try a different driver.
typecheck	The operator expected a certain type of value on the operand stack, but the wrong type was provided instead.	Several operators Random or no characters	May be a printer driver problem or interference from a separate utility; requires advanced debugging. This could indicate a problem with the communications link or with the leftover data in the job; try a different communications line or printer driver. This problem may also occur if a PostScript file is saved, transferred to a different computer platform, and downloaded from that computer; try saving the file in ASCII or Text Only rather than binary format.
undefined	The name specified in the OffendingCommand is not known to the RIP.	md Several operators Random characters	This is not a PostScript operator; it indicates that the required PostScript code has not been included in a PostScript file saved on the Macintosh. Resave the file. The job contains a nonstandard operator that is not recognized by the RIP; check the driver settings or select a different printer support file. Too much data for an image may have been supplied; scan, edit, or import the image again.
VMerror	The RIP has run out of PostScript virtual memory (VM) during the job.	Several operators	Reboot the RIP to clear its memory; this error should be very rare when using PostScript Level 2.

If your RIP does not record messages or is unable to send them to an attached computer, the messages will be lost. In this case, it is best to use an error handler utility. Error handler utilities are PostScript files that change the way error messages are processed and displayed by the interpreter. For example, they may print the error information at the RIP or write it to the RIP's disk so that it may be read later. Some error handler utilities also provide more information than just the error message, but this additional information typically requires in-depth knowledge of the PostScript language. Contact your RIP vendor for information on available error handler utilities. Adobe Systems also provides a simple error handler utility via modem or the Internet (see "Accessing Adobe Files," page 103).

Even if the RIP can send error messages back to your computer, you may not see the error message at all or it may flash by too quickly on your computer's display to be read or understood. In this case, the printer driver on your computer is ignoring or intercepting messages sent back

from a RIP. (Examples of printer drivers include Apple Computer's LaserWriter driver, Microsoft's PSCRIPT™ driver, and Adobe Systems' PSpriinter™ and ADOBEPS™ drivers for the Macintosh and Windows platforms, respectively.)

Further, if the printer driver detects that the message represents an error, it may post an uninformative message such as -8133, which indicates that a PostScript error has occurred. Be aware that not all generic error messages indicate a PostScript error. For example, the messages -4100 or The job is OK but can't be printed. on the Macintosh may indicate a problem in the communications link between the Macintosh and the RIP.

You can use an error handler utility in this case, but this is not always the best choice. An error handler utility that instructs the RIP to print the error information on paper or film, for instance, could be an expensive waste of media. A better method is to look for an option to display error messages when you print. The PSpriinter and LaserWriter

8.0 printer drivers (from Adobe Systems and Apple Computer, respectively) both provide this option.

If this feature is not available to you, the next best method is to save the PostScript file on your computer's hard disk drive and download it separately to the RIP. Look for an option to save the PostScript file when you print. After saving the file, send it to the RIP using a downloader utility. (Examples of downloader utilities are font downloader software, LaserTalk™, and SendPS™, all of which are available from Adobe Systems; your RIP vendor may also offer downloader utilities.)

Typically, downloader utilities either show you the error message on-screen after sending the file or write any information returned by the RIP to a "log file" on your computer's hard disk drive. Alternatively, if your error handler utility provides additional information from the RIP with the error message and does not print on media, install it and then download the saved PostScript file. This allows you to see the more complete information returned by the error handler utility.

Follow these steps to help you determine which method to use to display complete error messages:

1. If the RIP can record or display error messages, consult the RIP documentation on how to read them. If not, go to step 2.
2. If the RIP is unable to send messages back to your computer, use an error handler utility. If it can send messages back, go to step 3.
3. If you are able to see complete error messages when you print, begin using them. If not, go to step 4.
4. If your printer driver has an option to display complete error messages, enable this option when you print. If not, go to step 5.
5. If your printer driver has an option to save PostScript files, save the file, then use a downloader utility to send the file to the RIP.
6. Finally, try running the PostScript file through the Adobe Acrobat Distiller. If the Distiller detects the same error, you should be able to see what that error is.

If none of these methods works, you will need to use more advanced techniques. Consult with a local expert or contact your RIP vendor for assistance.

CAUSES OF POSTSCRIPT ERRORS

In order to correct a PostScript error, you first need to know at which point in the printing process it was introduced. Although printing a document is a complex operation that varies slightly from one printing environment to another, generally there is a common sequence of steps. If you become familiar with these steps, you will be better able to isolate the cause of the errors you encounter. The following list describes each step in the printing process, along with common problems associated with it and suggested solutions.

1. You compose a document on your computer using an application. The application uses its own graphics language to represent the document on your monitor. The

document may also include files imported from other applications. If there is a problematic object in this document or an error in one of the imported files, remove or modify the offending object or imported file.

2. When you print the document, you select the destination RIP as well as various settings for printing the document on that RIP, such as paper size, hardware resolution, or flatness. If you selected settings that are inappropriate for the RIP, try selecting different ones.
3. The printer driver then converts the document into a PostScript file. The driver translates the representation of the document from the application's graphics language into the PostScript language. If the PostScript code created by the printer driver is faulty, the translation will produce an error. Try a different printer driver or try modifying the document from within the application.
4. Some printer drivers add information to the PostScript code, such as details about fonts, images, and other resources required by a document. Such information can be formatted according to the Document Structuring Conventions (DSC) described in the PostScript Language Reference Manual or the Open Prepress Interface (OPI) specification. If there is a mistake in the added information, a problem in the PostScript code may be introduced later if a spooler is attached to the RIP. Try using a different driver, changing the fonts, or changing the structure of the document (by moving or deleting pages, for example).
5. The printer driver may insert extra PostScript code into the file (see "Sending the Right File," this page) that requests specific features of the destination RIP. Some printer drivers obtain this code from printer support files, such as PostScript Printer Description (PPD) files from Adobe Systems (see "Customizing a PPD File," page 108). These support files contain product-specific code so that the printer drivers don't have to include it. If you or the printer driver chooses the wrong printer support file for the destination RIP, go back and select the appropriate printer support file for the RIP. If the information in the printer support file is incorrect, contact your RIP vendor or try using a printer support file for a very similar RIP.
6. The PostScript file is sent or transferred to the RIP, usually by the printer driver. If there is a problem with the way that the file is sent to the RIP, either in the physical connection or in the software that is sending the file, try a different way of sending the file. For example, try a different cable, using a different type of communications link, or using the same link but a different printer driver, downloader, or file transfer software.
7. If a spooler or OPI server is on the network or part of the RIP, the spooler or server intercepts the file. (A spooler is software that coordinates the delivery of files to a RIP.) Some spoolers and servers modify the file according to the DSC or OPI information in the file before passing it on to the PostScript interpreter within

the RIP. If the DSC or OPI information is incorrect or if the spooler handles the information incorrectly, an error will result. Disable the spooler if possible, or check that the resources required by the file are available at the RIP.

8. Finally, the interpreter executes the file—this is when errors are actually detected. Problems within the interpreter itself are less common than errors introduced in the previous steps. Some utilities, such as those for color calibration, make subtle changes to the interpreter's operation that can interfere with the proper operation of the interpreter. If there is a problem in the interpreter or if a utility is interfering, try either using a different RIP or restarting the RIP without using specialized utilities. If this does not help, contact your RIP vendor to report the problem.

If all else fails, one final solution that you can try is to save the PostScript file, modify it directly, and download it to the RIP. This requires explicit knowledge of the PostScript language and of DSC, however. Alternatively, you can contact your RIP vendor for assistance.

ISOLATING THE CAUSE OF THE ERROR

Note that one common action in the suggested solutions is to replace, remove, or otherwise change a particular part in the process, such as the printer driver, printer support file, or spooler. The best way to find the cause of an error is to isolate it by systematically changing one part of the process at a time and then observing whether the error still occurs. If you make a change and the problem disappears, you have located the cause of the problem and solved it as well; otherwise, try changing another part of the process.

Replacing the printer driver is a common change, since the driver is involved in several of the steps in the printing process. If you try a different driver, you are sending different PostScript code for the same document. (Some applications, such as Adobe Photoshop, Adobe Illustrator, and QuarkXPress, generate their own PostScript code, so changing the driver may not have an effect in these cases.) If the error persists, then you need to look at the other parts of the process, such as modifying the file from within the application or changing the way the file is transferred to the RIP.

If you modify the file in the application, you can use a similarly systematic approach by replacing, removing, or modifying pages or objects on the page. Again, the error information may guide you in determining which objects to change.

There are several ways to change the method for transferring a file to the RIP. You can try different physical connections, such as LocalTalk® or EtherTalk® (both from Apple Computer) or serial or parallel cables. Or you can save a PostScript file using the printer driver and then send it to the RIP separately with a downloader utility. In this case, you are using the downloader utility software to transfer the file to the RIP; if the error disappears, you know it had to do with the way the printer driver transferred the file.

When you save a PostScript file using a printer driver, however, you may introduce some new problems. Because the driver adds device-dependent code to the file, it may not be appropriate to send the file to another type of RIP; either the file will fail or you will not get the printing features you requested. Also, if you transfer a saved PostScript file from a Windows or DOS machine to a Macintosh, there may be nonprinting characters (also called binary characters) within the file that will cause an undefined error when the file is downloaded to the RIP. In general, files with binary characters are much more difficult to transfer from one computer platform to another. It's safest to save files in ASCII text format rather than binary format.

Another method for transferring the PostScript file is to store the file on the RIP's internal disk, if it has one, and run it from there. This is similar to downloading and storing a font to the RIP's internal disk. When you run the file from the RIP's disk, you no longer need to send the file to print it, which effectively removes the communications step from the printing process. (Note, however, that if the file had binary characters in it when you stored it on the RIP's disk, those characters may have been lost if you used a serial or parallel connection.)

Some downloader utilities allow you to store a PostScript file to the RIP's internal disk. If one is not available, use a text editor (in ASCII format) to add the following PostScript code to the beginning of a PostScript file:

```
%!
/rf currentfile def
/wf (myfile.ps) (w) file def
/str 65535 string def
//rf //str readstring
//wf 3 -1 roll writestring
not {exit} if
} bind loop
```

You can change the name of the file by replacing myfile.ps in the code with your file name (retain the parentheses). It's best to keep the name simple and to avoid using spaces or nonalphanumeric characters. You can then send this new file to the RIP using a downloader utility. If there are no problems, the PostScript file will now be stored on the RIP's internal disk. Next, from within the text editor, create another PostScript file that contains only this simple code:

```
%!
(myfile.ps) run
```

Again, substitute the placeholder myfile.ps with the name of the file you stored previously on the RIP's internal disk. Save (also in ASCII format) and download this simple file to the RIP. The file myfile.ps will be executed. You can send this file as many times as you want to run myfile.ps. If the error persists, then the source of the problem is not in the communications line or the way that the printer driver sent the file to the RIP. Once you have finished testing for the error's source, you must delete the myfile.ps file; to do so, create and download another PostScript file to the RIP that contains this code:

```
%!
(myfile.ps) deletefile
```

Your RIP vendor may have utilities or methods available for performing these kinds of operations with PostScript files. For example, on some software-based RIPs that run on workstations, it may be possible to store a PostScript file on the workstation's file system so that it can be executed by the RIP.

This systematic approach can be time-consuming, since the printing process has so many parts and steps. Bear in mind, however, that the PostScript error message will often provide clues about the type of operation that failed and how it failed. For example, if you see an `ioerror` message with random characters rather than an operator name as the offending command, you should suspect a problem with the communications link to the RIP. But if you see an `ioerror` message associated with the image operator (related to a scanned image), you should either suspect the communications link or the application that you used to create and save the scanned image.

With time and experience, you will discover that intuitive hunches play a part in determining the causes of PostScript errors. Yet even when you are able to make such intuitive leaps, it will always be a good idea to return to basic principles: Know the steps in the printing process, know how to display the complete error message, know how to interpret the elements of the error message, and know that successful troubleshooting requires systematically isolating possible sources of the problem.

SUGGESTED READING

- Braswell, Frank. *Inside PostScript*. Berkeley, Calif.: Peachpit Press, 1989.
- Fink, Peter. *PostScript Screening: Adobe Accurate Screens*. Mountain View, Calif.: Adobe Press/MacMillan Computer Publishing, 1992.
- Glover, Gary. *Running PostScript from MS-DOS*. Blue Ridge, Pa.: Windcrest Books, 1989.
- McGilton, Henry, and Mary Campione. *PostScript by Example*. Reading, Mass.: Addison-Wesley, 1992.
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- Reid, Glenn. *Thinking in PostScript*. Reading, Mass.: Addison-Wesley, 1990.
- Roth, Stephen. *Real World PostScript*. Reading, Mass.: Addison-Wesley, 1988.
- Smith, Ross. *Learning PostScript: A Visual Approach*. Berkeley, Calif.: Peachpit Press, 1990.

TRAINING COURSES AND SEMINARS

- PostScript Language Training, Levels 1 and 2 Acquired Knowledge 619-587-4668
- PostScript Concepts Seminar Systems of Merritt 205-660-1240

Customizing a PPD File

A PostScript Printer Description (PPD) file—a printer support file in ASCII text format created by Adobe Systems or one of its original equipment manufacturers (OEMs)—describes the specifications and features of a specific Post-Script printing device in its original manufactured state. Applications such as Adobe Separator and PageMaker, as well as printer drivers from Adobe Systems and Apple Computer, use PPD files, which may be distributed by the application vendor or OEM. PPD files allow the user to select settings for different features, such as paper sizes, tray options, halftone screens, and output resolutions. Sometimes you may need to add to or modify a PPD file for a particular printing environment. This section—which is addressed primarily to prepress operators—discusses common ways of customizing PPD files.

In general, modifying a PPD file requires knowledge of the PPD format and often of the PostScript language itself. Although neither Adobe Systems nor its OEMs support PPD file customization, with careful attention to detail, it can be done successfully.

CUSTOMIZATION METHODS

Changes can be made to a PPD file in two ways: by editing the PPD file directly with a text editor, or by creating and editing a separate PPD file, called an editable customization file, that refers to the original PPD file. If you edit the PPD file, save a copy of the original and edit the copy, not the original. Use any text editor to modify or create the PPD file and always save the file in Text Only or ASCII format.

To create an editable customization file, create a new file in a text editor and type the following line:

```
*Include: "filename"
```

Replace `filename` (keep the quotes) with the name of the original PPD file that is to be customized. Add the custom PPD entries you want before this line so it will override the information in the original PPD file. The custom PPD entries must conform to the PPD specifications. Save the customization file with a unique name that represents the changes you made or the particular device for which you made those changes (for example, `MyPrnr.PPD`). The `.PPD` extension (it is not case-sensitive) should be preserved because many applications and print managers search for files with that extension. Store both the original PPD file and the customization file in the same location.

Whenever possible, use the editable customization file method rather than editing a PPD file directly. There are several advantages to using an editable customization file over modifying the PPD file. First, the editable customization file method allows you to isolate errors more easily. Second, the original PPD files are still supported by Adobe Systems and its OEMs because they remain unchanged. Third, you can create a naming convention for the editable customization files that will make it easy to track future modifications. The disadvantage of using an editable customization file is that you must know the PPD file specifications in order to make the correct entries.

The only time you should edit the original PPD file is when you wish to make a small number of simple changes. In general, if you are making several customizations, you should use the editable customization file method instead.

APPLICATIONS

This section provides some examples of PPD file customizations.

Editing halftone screen information.

The ColorSepScreenAngle and ColorSepScreenFreq entries in either an original PPD or a customization file correspond to a particular halftone screen angle and frequency for each process and custom color, usually at a certain output resolution. Although you may select a 132-lpi screen frequency and a 2540-dpi output resolution in the dialog boxes of an application such as Adobe Separator, the actual settings may not represent an exact 132-lpi screen. To set your own custom screen frequency and angle, follow these steps.

1. Search for the ColorSepScreenAngle and ColorSepScreenFreq entries in the PPD file (they are usually near the end).
2. Locate the group of lines representing the screen frequency and output resolution combination (in lpi and dpi, respectively) you wish to modify (132/2540 in this example). You will find lines of code similar to these:

```
*% For 132 lpi / 2540 dpi
*ColorSepScreenAngle
  ProcessBlack.132lpi.2540dpi/132 lpi / 2540
  dpi: "45.0"
*ColorSepScreenAngle
  CustomColor.132lpi.2540dpi/132 lpi / 2540
  dpi: "45.0"
*ColorSepScreenAngle
  ProcessCyan.132lpi.2540dpi/132 lpi / 2540
  dpi: "18.4349"
*ColorSepScreenAngle
  ProcessMagenta.132lpi.2540dpi/132 lpi /
  2540 dpi: "71.565"
*ColorSepScreenAngle
  ProcessYellow.132lpi.2540dpi/132 lpi / 2540
  dpi: "0.0"
*ColorSepScreenFreq
  ProcessBlack.132lpi.2540dpi/132 lpi / 2540
  dpi: "119.737"
*ColorSepScreenFreq
  CustomColor.132lpi.2540dpi/132 lpi / 2540
  dpi: "119.737"
*ColorSepScreenFreq
  ProcessCyan.132lpi.2540dpi/132 lpi / 2540
  dpi: "133.871"
*ColorSepScreenFreq
  ProcessMagenta.132lpi.2540dpi/132 lpi /
  2540 dpi: "133.871"
*ColorSepScreenFreq
  ProcessYellow.132lpi.2540dpi/132 lpi / 2540
  dpi: "127.0"
```

3. At the end of each ColorSepScreenAngle line, edit the value within the quotation marks. This will change the angle of the screen used to create the halftone. These numbers must contain a decimal point, so follow each whole number with a decimal point and a zero. For example, enter 45 degrees as "45.0" (include quotation marks). If you are using the customization file method, copy these entries and place them in the customization file before the line containing *Include. Then edit the values in the customization file.
4. At the end of each ColorSepScreenFreq line, edit the value within the quotation marks. This will change the screen frequency used to create the halftone. These numbers must also have a decimal point, so follow each whole number with a decimal point and a zero. For example, enter 127 degrees as "127.0" (include quotation marks).

CHANGING MENU ITEM NAMES

Applications and drivers use translation strings to describe some menu items. Translation strings translate potentially cryptic PPD file entries into easily identifiable names or phrases, even in natural programming languages. To identify a translation string in a PPD file, look for a phrase preceded by a solidus (/) and followed by a colon (:). By editing these strings, you can use names that are more useful to you than the printer vendor's names.

For example, many imagesetter PPDs have a paper-size selection called Letter.Transverse, for letter-sized paper that is fed into the printer by its long edge. It may be more intuitive to be able to select the Long-edge-feed Letter paper size than it is to select the Letter.Transverse size in the appropriate dialog box. You can customize the PPD file to change the name of this paper size.

The latest drivers from Adobe Systems and Apple Computer use the *PageSize entries in the PPD file to display the names of the available paper sizes in the appropriate dialog box. When the entry shown below exists, it causes the printer driver to display Letter.Transverse, since there is no translation string. (In a PPD file, these entries are placed with other *PageSize entries; in a customization file, they are placed above the line that contains *Include.)

```
*PageSize Letter.Transverse: "<PostScript
  language code>"
```

Change the menu item by adding the following translation string:

```
*PageSize Letter.Transverse/Long-edge-feed
  Letter: "<PostScript language code>"
```

In this case, as a result of this new entry, the name of this paper size will now be displayed as Long-edge-feed Letter the next time you elect the same PPD file. Do not change the PostScript language code between the quotes.

Changing the nickname of your printer.

There may be times when you'll need to identify a PPD file by the function of the printer it represents, rather than the name of the product. The PSprinter driver from Adobe Systems, for example, is able to display an alternate name for a PPD file when you select the printer in the Chooser

on a Macintosh. Changing the *NickName entry in the PPD file changes this alternate name.

First, find the *NickName entry, which is usually near the beginning of the PPD file. It will look something like this:

```
*NickName: "ACME Color Printer 1000
v2013.114"
```

You may change the nickname to something more useful to you by changing the *NickName statement to read:

```
*NickName: "ACME Color Proofer"
```

The new nickname should be no longer than thirty-one characters. If it is longer, add this entry: ShortNickName: "<desired name>"

Adding Fonts to a Custom Printer File Using a Text Editor

Custom printer files supplement PPD (PostScript Printer Description) files, allowing printer information to be customized for a particular printer (e.g., resident fonts, paper sizes, virtual memory).

The External Font Information section in the selected PPD or custom printer file indicates what fonts are installed in the printer's hard drive. From this list of fonts, applications that read PPD files determine what fonts to download. Most PPD files list fonts in the printer's ROM only. The advantages of listing all fonts at the printer will depend on your work flow and how many fonts are always installed on the printer's hard drive. Listing fonts in the printer's RAM is not recommended, as those fonts are deleted from memory when the printer is reset.

To add fonts available at the printer to a custom printer file using a text editor:

1. Retrieve a list of PostScript font names available at the printer. For instructions, see "Retrieving List of PostScript Font Names."
2. Open the custom printer file in a text editor that can save in text-only format (e.g., Microsoft Word, Teach-Text, MS-DOS Editor).

NOTE: Some text editors (e.g., Microsoft Write, Notepad) add invisible characters (e.g., end-of-file, line feed) to the file that prevent the PPD file from being parsed.

3. Before the "*Include" line, add the printer fonts using the syntax:

```
*Font fontname: encoding "(version)" charset
status
```

For example, ROM resident fonts:

```
*Font Courier: Standard "(001.004)" Standard
ROM
```

```
*Font Symbol: Special "(001.003)" Special
ROM
```

For example, fonts residing on the printer's hard disk:

```
*Font Palatino-Bold: Standard "(001.002)"
Standard Disk
```

```
*Font Palatino-BoldItalic: Standard
```

```
"(001.002)" Standard Disk
```

```
*Font Palatino-Italic: Standard "(001.002)"
Standard Disk
```

```
*Font Palatino-Roman: Standard "(001.001)"
Standard Disk
```

```
*Font MinionMM-Ep: Expert "(001.000)" Expert
Disk
```

```
*Font MinionMM-It: Standard "(001.000)"
Standard Disk
```

```
*Font AGaramondAlt-Italic: Special
"(001.001)" Special Disk
```

```
*Font AGaramondAlt-Regular: Special
"(001.001)" Special Disk
```

NOTE: The encoding, version, charset, and status are not used by most applications (e.g., Adobe PageMaker). Aldus TrapWise requires the correct font encoding, version, charset, and status. If the custom printer file is used only in PageMaker or Aldus PrePrint, the only information required after the PostScript font name is "Standard" for encoding, "001.000" for version, "Standard" for charset, and "Disk" or "ROM" for status. For example:

```
*Font Palatino-Bold: Standard "(001.000)"
Standard Disk
```

4. Save the custom printer file in text-only format in the Printer Descriptions folder (Macintosh) or in the ALD-US\USEENGLISH\PPD4 subdirectory (Windows).

RETRIEVING LIST OF POSTSCRIPT FONT NAMES ON THE MACINTOSH

Create a Font catalog using Apple LaserWriter 8.0 Utility v 7.4.1:

1. Use Apple LaserWriter 8.0 Utility v 7.4.1 or later to print a Font catalog to disk.
2. Open the file in a text editor, and search for the PostScript font names in parentheses (e.g., Helvetica-ExtraCompressed) listed in the section "Fonts on printer."

OR: Use a PostScript file downloading utility (e.g., Adobe Font Downloader 5.04) to print or display a list of PostScript font names.

NOTE: PostScript font names displayed by Adobe Font Downloader 5.04 cannot be copied from the displayed list.

OR: Download a PostScript routine to query for fonts at the printer, and return a list of these fonts in a text file:

1. Open a new file in a text editor that can save in text-only format.
2. Type the following PostScript code (Color Central User Manual, p. 71):

```
statusdict begin save
/SC 100 string def
FontDirectory{pop = flush}forall
(fonts/*){dup length 6 sub 6 exch
getinterval = flush} SC filenameforall
restore
```
3. Save in text-only format.
4. Download the PostScript routine file using a utility able

to return a text or log file (e.g., Apple LaserWriter 8.0 Utility v 7.4.1). The log file returned will contain the every font name resident in the printer's RIP (i.e., ROM, RAM, hard drive).

OR: Copy the FontName line in the PostScript font's AFM file, included with PostScript fonts.

OR: Use ResEdit to open the printer font and retrieve the font name from the POST resource number 501.

OR: Use the Update PPD Addition or PPDShell.ps PostScript routine file included with Adobe PageMaker 5.0x to query and list available fonts at the printer in the generated custom printer file.

NOTE: The fonts listed in the custom printer file generated by the Update PPD Addition or "PPDShell.ps" PostScript routine file can be copied into other custom printer files.

RETRIEVING LIST OF POSTSCRIPT FONT NAMES IN WINDOWS
Use a PostScript file downloading utility to print a list of PostScript font names.

OR: Copy the FontName line in the PostScript font's AFM file, included with PostScript fonts.

Creating Smooth and Efficient Gradations or Blends for PostScript

PostScript creates a graduated effect digitally by generating a series of halftone bands. Each band is a different shade or tint; the series of tint bands create the illusion of a gradation. The thinner the tint bands, the smoother the gradation will appear. Thick bands create a gradation that appears "banded."

It is possible to calculate the size of tint bands in a gradation (i.e., gradient fill, radial fill, or blend) to predetermine banding and ensure efficient blends for PostScript output. These calculations aid in creating gradations with the optimum number of steps to prevent noticeable banding while decreasing imaging times. As a general guideline, gradations with tint bands less than 3 points wide appear smooth; tint bands 3 points or wider appear banded.

When creating blends, do not add extra blend steps to create a smoother effect. The number of tints produced is related to the variables listed below. Specifying more blend steps than the number of available tints adds extra information that the printer cannot use but still has to process, making the print time longer with no increase in quality.

The following information is needed to calculate tint band widths:

- The printer resolution in dots per inch (dpi).
- The screen frequency in lines per inch (lpi).
- The change in color between the beginning and ending tints in the gradation described as a percentage.
- The physical distance between the beginning and ending tints of the gradation described in points.

CALCULATING TINT BANDS FOR GRADATIONS

To calculate available tints and band widths, use the following three formulas in the order listed:

$$([\text{Resolution (dpi)}] / [\text{Screen frequency (lpi)}])^2 + 1 = [a]$$

$$[a] \times [\text{amount of tint change in gradation}] = [b]$$

$$[\text{length of area to be filled}] / [b] = [c]$$

Where:

[a] is the initial number of tints available.

[b] is the actual number of tints available for the gradation.

[c] is the size of each band or how visible it will be.

To calculate tints available and band size using the above formulas:

1. Divide the printer resolution by the chosen screen frequency. Square the integer value (discard any remainder or decimal), then add 1 to the result. This is the approximate number of tints the printer is capable of producing using this resolution and screen frequency.

$$([\text{Resolution (dpi)}] / [\text{Screen frequency (lpi)}])^2 + 1 = [\text{initial number of tints available}]$$

2. When the number calculated for initial number of tints available is higher than 256, reduce to 256. PostScript cannot create more than 256 different tints per ink.

For example, when printing to a device with resolution set at 1270 dots per inch (dpi) and line frequency specified at 150 lines per inch (lpi), the formula calculates roughly 72 available tints. Changing the resolution to 2540 dpi, while keeping the screen frequency at 150 lpi, results in 287 available tints. Because PostScript is only capable of 256 tints, you must use the number 256.

3. Multiply the initial number of tints available by the amount of tint change in the gradation, expressed as a decimal.

$$[\text{Initial number of tints available}] \times [\text{amount of tint change in gradation}] = [\text{actual number of tints available for the gradation}]$$

For example, for a 20% black to 80% black gradation, the tint change is 60% or .60 when expressed as a decimal. Because a tint change of less than 100% uses less than 100% of the total available range of tints (e.g., 60% of 256 tints is 153 tints), you must calculate the actual number of tints available.

4. Measure the object in the direction of the gradation and convert that length to points (72 points per inch).

5. Divide the length of the gradation by the actual number of tints available to determine the width of each tint band or the minimum width of objects used to create a blend.

$$[\text{length of area to be filled}] / [\text{actual number of tints available}] = [\text{size of each tint band}]$$

For example, when the gradation is 4 inches (288 points) in length with 153 tints available, each tint band will be about 1.9 points wide.

CALCULATING TINT BANDS FOR PROCESS COLOR GRADATIONS
When predetermining band widths for process color gradations, calculate band widths for each of the four process inks involved. You can calculate banding for the ink that has the most change in color, and the ink with the least change to determine the complete spectrum of expected band widths. Banding in a lighter color (i.e., yellow) is less evident when the final product is printed than banding in a darker color (i.e., black).

REDUCING BANDING

Variables that affect banding are: resolution, screen frequency, tint change in the gradation, and the length of the gradation.

Adjust variables to reduce the width of tint bands by doing one or more of the following:

- A. Increase the resolution until the gray bands are thin enough or until the number of initially available grays passes PostScript's limit of 256 gray levels. Raising resolution after passing 256 tints is pointless because PostScript can only produce 256 tints per ink.
- B. Lower the screen frequency value until the formula shows the bands are thin enough or until the number of initially available tints passes PostScript's limit of 256 gray levels. Lowering screen frequency after passing 256 tints is pointless because PostScript can only produce 256 tints per ink.
- C. Increase the difference in color between the starting and ending tints in the gradation.
- D. Decrease the length of the gradation.

OR: Diffuse the hard edges of the tint bands by applying noise to the gradation in an application that can open and rasterize the gradation (e.g., Adobe Photoshop), or by choosing an ink or absorbent paper stock that will aid in diffusing the tint bands.

OR: Replace the gradation by having your printer strip in a pre-made gradation or by printing to a PostScript processing system (e.g., Scitex system) that replaces gradations with a proprietary smooth rasterized gradation.

PostScript Level 2 General Information

PostScript, developed by Adobe in 1985, is a page description language for printing and displaying documents that integrate text, graphics, images, and color. PostScript implementations are organized into levels (i.e., Level 1, Level 2). Several extensions have been made to the PostScript language to adapt to new technology and to incorporate new functionality and flexibility. PostScript extensions are collections of language features that are not a standard part of the language level.

PostScript Level 1 interpreters implement all Level 1 features documented in the first edition of the PostScript Language Reference Manual.

PostScript Level 2 introduces new language features as well as optimized text and graphic operators. Level 2 features include CMYK color extensions, composite font ex-

tensions, and many of the Display PostScript extensions that apply to raster devices. Because Level 2 supports Level 1 features and operators, applications that support printing to Level 1 interpreters also support printing to Level 2 interpreters. PostScript Level 1 does not support all Level 2 features and operators. PostScript language applications that support Level 2 operators and features do not automatically support printing to Level 1 interpreters.

POSTSCRIPT LEVEL 2 NEW LANGUAGE FEATURES

PostScript Level 2 provides improved and enhanced support for the following features:

Composite font

PostScript Level 2 incorporates the composite font extension. Composite fonts are a hierarchical collection of base fonts (i.e., individual character descriptions) that support character sets larger than 256 characters and complex character positioning. In PostScript Level 1, fonts are limited to 256 characters. Languages such as Japanese and Chinese require character sets larger than 256 characters.

Data Compression and Decompression Filters

Data Compression and Decompression filters transform data as it is being read from or written to a file. The PostScript Level 2 language supports filters for ASCII HEX coding, ASCII85 coding, LZW compression, Run-length compression, CCITT fax compression (i.e., Group 3 and Group 4), and JPEG compression.

Device-independent Color

PostScript Level 2 supports several device-independent color spaces based on the international standard CIE 1931 (Commission International de l'Eclairage) as well as the CMYK and RGB color models. CIE is a system for specifying color values in a way that is related to human visual perception. The CIE color models are based on visual color perception rather than color production. The CIE color system allows for device-independent color, which enables you to create, view, and print color information with more predictable results on a variety of displays and printers.

Forms

A form is a self-contained description of graphics, text, or images painted multiple times on any number of pages by using Form caches. To optimize the repeat uses of the same form, the form cache uses a location in memory to store recently used forms. When the form is requested, it is retrieved from the form cache. If the form is not requested within a predetermined amount of time, the form is deleted from memory.

Improved Halftoning Algorithms

PostScript Level 2 devices provide improved accuracy of angles and frequencies for imagesetter halftone screens. Halftone screen calculations are based on parameters such as the exact screen angle and frequency requested, resolution of the device, and memory available for use by the algorithm. PostScript Level 2 uses device-specific halftone dictionaries to ensure hardware specific adjustments. A halftone dictionary (e.g., type 1, type 3) is a self-contained description of a halftoning process.

Improved Memory Management

Memory in a PostScript Level 2 device is available to all resources, resulting in dynamically-shared memory for increased efficiency. In PostScript Level 2, the VM, stacks, paths, font cache, form cache, and the page buffer expand when necessary, sharing memory as needed. PostScript Level 2 supports the removal of individual entries from dictionaries and the removal of font definitions in an order unrelated to the order in which they were created. Virtual memory (VM) is reclaimed automatically for composite objects.

Patterns

PostScript Level 2 allows printers to paint with patterns in addition to solid colors. Painting operators are used to tile a pattern cell at fixed intervals to cover the area being painted. The pattern cache is a location in memory where recently used patterns are stored, optimizing the repeated use of the same pattern. When the pattern is requested, it is retrieved from the pattern cache. If the pattern is not requested in a predetermined amount of time, it is deleted from memory.

Resource Management

PostScript Level 2 enables quick storage and retrieval of resources (e.g., fonts, forms, patterns, font encoding vectors, and CIE-based color-rendering dictionaries). A resource is a collection of named objects that either reside in VM or can be located and brought into VM on demand. There are separate categories of resources with independent name spaces.

Printer-specific features

The “setpagedevice” operator provides a device-independent framework for specifying the requirements of a page and for controlling both standard features (e.g., number of copies) and optional device features (e.g., duplex printing, multiple paper trays).

PostScript Level 2 Operators

The following Level 2 operators, along with the Level 1 operators documented in the first edition of the PostScript Language Reference Manual, are present in the Level 2 implementation of the PostScript language.

```
<<
>>
arct
colorimage
cshow
currentblackgeneration
currentcacheparams
currentcmkcolor
currentcolor
currentcolorrendering
currentcolorscreen
currentcolorspace
currentcolortransfer
currentdevparams
currentglobal
currentgstate
currenthalftone
```

```
currentobjectformat
currentoverprint
currentpacking
currentpagedevice
currentshared
currentstrokeadjust
currentsystemparams
currentundercolorremoval
currentuserparams
defineresource
defineuserobject
deletefile
execform
execuserobject
filenameforall
fileposition
filter
findencoding
findresource
gcheck
globaldict
GlobalFontDirectory
glyphshow
gstate
ineofill
infill
instroke
inueofill
inufill
inustroke
ISOLatin1Encoding
languagelevel
makepattern
packedarray
printobject
product
realtime
rectclip
rectfill
rectstroke
renamefile
resourceforall
resourcestatus
revision
rootfont
scheck
selectfont
serialnumber
setbbox
setblackgeneration
setcachedevice2
setcacheparams
setcmkcolor
setcolor
setcolorrendering
setcolorscreen
setcolorspace
```

```

setcolortransfer
setdevparams
setfileposition
setglobal
setgstate
sethalftone
setobjectformat
setoverprint
setpacking
setpagedevice
setpattern
setshared
setstrokeadjust
setsystemparams
setucacheparams
setundercolorremoval
setuserparams
setvmthreshold
shreddict
SharedFontDirectory
startjob
uappend
ucache
ucachestatus
ueofill
ufill
undef
undefinefont
undefineresource
undefineuserobject
upath
UserObjects
ustroke
ustrokepath
vmreclaim
writeobject
xshow
xyshow
yshow

```

Converting PostScript Files to EPS Graphics

To convert a PostScript file to an EPS graphic, you must open it in a text editor and add lines that identify it as an EPS graphic and specify the dimensions, or bounding box, of the image contained in the file. Adding these lines does not guarantee the file will conform to the EPSF specification, but it may enable you to import a PostScript file into an application when no other options are available.

To convert a PostScript file to an EPS graphic using a text editor:

1. Using any PostScript downloading utility, download the original PostScript file to a PostScript printer to ensure it prints as expected.
2. Draw a box around the printed image that includes the entire image, with a minimum of white space. This box

represents your bounding box.

3. Measure distance “a” from the lower-left corner of the bounding box to the left edge of the paper. Note measurement “a” in points. (To calculate points: 1 inch=72 points, and 1 pica=12 points.)
4. Measure distance “b” from the lower-left corner of the bounding box to the bottom edge of the paper. Note measurement “b” in points.
5. Measure distance “c” from the upper-right corner of the bounding box to the left edge of the paper. Note measurement “c” in points.
6. Measure distance “d” from the upper-right corner of the bounding box to the bottom edge of the paper. Note measurement “d” in points.
7. Open the PostScript file in a word processing application. The lines at the top of the file are the header. The subsequent lines are the PostScript description of the image.
8. Edit your PostScript file so that it begins with the following lines:

```

%!PS-Adobe-2.0 EPSF-1.2
%%Creator: name
%%CreationDate: date
%%Title: filename
%%BoundingBox: a b c d
%%EndComments

```

where “name” is your name or initials, “date” is today’s date in any format (e.g., 9/18/57 or September 18, 1957), “filename” is the name of the PostScript file, and “a,” “b,” “c,” and “d” are the measurements you noted in steps 3 - 6.

NOTE: Do not insert blank lines between the lines of the header.

9. Save the file in text-only format.

NOTE: EPS files do not automatically include a screen preview. If you import an EPS file that doesn’t contain a screen preview into an application, the application displays a gray box. Inside the gray box are the title, creator, and creation date of the graphic, if those comments are found inside the EPS file. Saving an EPS file that contains a screen image in text-only (ASCII) format will eliminate the screen preview.

Adding Custom Paper Sizes to a Custom Printer File Using a Text Editor

Creating a custom printer file to supplement a PPD file enables you to customize the printer information (e.g., resident fonts, paper sizes, virtual memory) your printer’s PPD file contains. Most sheet-fed, desktop laser printers (e.g., Apple LaserWriter II NTX) do not support custom paper sizes. As a result, the PPDShell.ps PostScript routine and the Update PPD Addition or utility are unable to add custom paper size information to a custom printer file when they query these printing devices. Printing devices that support variable paper sizes (e.g., imagesetters) support cus-

tom paper size information and include the “*Variable-PaperSize: True” line in their PPD file.

The following example creates a custom paper size named “MyCustomPage” with dimensions of 3" x 4.5". Not all PPD files include the “*PageRegion” keyword as the “*PageSize” keyword can function as both the “*PageSize” and “*PageRegion” keywords. The “*PageRegion” keyword specifies input options, which are contained in the “*Page-Size” keyword.

To add a new custom paper size to a custom printer file using a text editor:

1. Open the custom printer file in a text editor that can save in text-only format (e.g., Microsoft Word, TeachText, MS-DOS Editor).

NOTE: Some text editors (e.g., Microsoft Write, Notepad) add invisible characters (e.g., end-of-file, line feed) to the file that prevent applications or printer drivers from parsing, or reading, the PPD file.

2. In the section containing the “*PageSize” keywords, add a custom paper size after the last “*PageSize” line using the following syntax:

For Normal orientation (1):

```
*PageSize MyCustomPage: "216 324 1
statusdict begin setpage end"
where:
```

“MyCustomPage” represents the name of your page, with no spaces.

“216” is the small page dimension in points (72 points = 1 inch).

“324” is the large page dimension in points.

For Transverse orientation (0):

```
*PageSize MyCustomPage.Transverse: "324 216
0 statusdict begin setpage end"
where:
```

“MyCustomPage.Transverse” represents the name of your page, with no spaces.

“324” is the large page dimension in points.

“216” is the small page dimension in points.

NOTE: When adding large paper sizes, low memory at the printer causes a failed print job, cropped print job, or a PostScript error. The total width plus margin of the paper size must be less than or equal to the imageable width of the imagesetter.

3. In the section containing the “*PageRegion” keywords, add a line for the custom paper size after the last “*PageRegion” line using the following syntax:

For Normal orientation (1):

```
*PageRegion MyCustomPage: "216 324 1
statusdict begin setpage end"
```

For Transverse orientation (0):

```
*PageRegion MyCustomPage.Transverse: "324
216 0 statusdict begin setpage end"
```

4. In the section containing the “*ImageableArea” keywords, add a line for the custom paper size after the last “*ImageableArea” line using the following syntax:

```
*ImageableArea MyCustomPage: "0 0 216 324"
```

where “0 0 324 216” sets the bounding box of the

imageable area for the page size.

5. Locate the “*PaperDimension” keywords, add a line for the custom paper size after the last “*PaperDimension” line using the following syntax:

For Normal orientation (1):

```
*PaperDimension MyCustomPage: "216 324"
```

For Transverse orientation (0):

```
*PaperDimension MyCustomPage: "324 216"
```

6. Save the custom printer file in text-only format in the Printer Descriptions folder (Macintosh) or in the PPD4 subdirectory (Windows).

Creating a Minimum Custom Printer File Using a Text Editor

PostScript Printer Description (PPD) files, provided by the printer manufacturer, describe a printer’s standard configuration. To provide more detailed information to your applications about your printer (e.g., custom page sizes, linescreen and resolution combinations), supplement the PPD file by creating a custom printer file.

Information in the custom printer file preceding the “*Include” line overrides the same information in the PPD file. The actual file name of the custom printer file is optional. The line *Include: “PPD NAME HERE” specifies which PPD file the custom printer file will supplement.

To generate a basic custom printer file using a word processor or text editor:

1. Open a new file in a text editor that can save in text-only format (e.g., Microsoft Word, TeachText, MS-DOS Editor).

NOTE: Some text editors (e.g., Microsoft Write, Notepad) add invisible characters (e.g., end-of-file, line feed) to the file that prevent the PPD file from being parsed.

2. Type the following lines:

```
*PPD-Adobe: "4.0"
```

```
*Include: "PPD NAME HERE"
```

```
*/% End of Aldus PPD local customization file.
```

3. In the custom printer file, replace “PPD NAME HERE” after the “*Include:” line with the corresponding PPD file’s name, ensuring the straight quotes are not deleted around the PPD file’s name. For example:

```
*Include: "LaserWriter II NTX v51.8"
```

4. Add custom page sizes, printer resident fonts, and custom line screen information between the *PPD-Adobe: “4.0” and *Include: lines.

5. Save the file as text-only (ASCII) in the Printer Descriptions folder in the Extensions folder (Macintosh) or in the Aldus\Usenglsh\Ppd4 subdirectory (Windows).

Updating PPD Files to Reflect Available Virtual Memory Using a Text Editor

Custom printer files supplement PPD files, enabling you to customize printer information for a particular printer (e.g.,

resident fonts, paper sizes, virtual memory). The “*FreeVM” line in the selected PPD or custom printer file indicates the amount of virtual memory (VM) in bytes available at the printer. From available VM specified in the PPD file, applications that read PPD files determine how much VM is needed to rasterize the page, and allocate the remaining VM for downloadable fonts. When a document contains complex graphics or several fonts that must download, and the amount of available VM in the target printer is low, low printer memory symptoms (e.g., long print times, “VMerror” and “limitcheck” PostScript errors, font substitution) or excessive print spooling times occurs.

To modify a custom printer file to reflect available VM of a printer using a text editor:

1. Determine the amount of available VM the printer has. For instructions, see below.
2. Open the custom printer file in a text editor that can save in text-only format (e.g., Microsoft Word, TeachText, MS-DOS Editor).

NOTE: Some text editors (e.g., Microsoft Write, Notepad) add invisible characters (e.g., end-of-file, line feed) to the file that prevent applications and printer drivers from parsing the PPD file.

3. Find or add the “*FreeVM” line before the “*Include line.” For example:

```
*FreeVM: "x" (where "x" is the value of
    virtual memory in bytes)
```

4. Select the VM value between the quotes and then change the value to reflect the actual value of FreeVM in bytes.
5. Save the custom printer file in text-only format in the Printer Descriptions folder (Macintosh) or in the Aldus\Usenglish\Ppd4 subdirectory (Windows).

Options for Determining the Available Virtual Memory (VM) at the Printer:

- A. Use the Apple LaserWriter 8.x printer driver’s or the Adobe PSpriinter 8.x printer driver’s Printer Info feature.
- B. Download a PostScript routine that prints the value of virtual memory in bytes.
- C. Create a custom printer file using the Update PPD Addition or PPDShell.ps PostScript routine file.
 - A. To determine the available VM using the LaserWriter 8.x printer driver’s or the PSpriinter 8.x driver’s Printer Info feature:
 1. Open the Chooser and select the LaserWriter 8.x or PSpriinter 8.x printer driver.
 2. In the Chooser, select the printer, then click Setup.
 3. Click Printer Info. If Printer Info is dimmed, click More Choices and then Printer Info.
 4. Click Update Info, then scroll through the Printer Information list to locate the Total Memory Available and note the value.
 5. Multiply the Total Memory Available number by 1,048,576 to convert from megabytes to bytes. The value in bytes is the available virtual memory value used in the *FreeVM line in the custom printer file.

- B. To download a PostScript routine that prints the value of virtual memory in bytes:

Print the VM value by downloading a PostScript routine to query the printer:

1. Open a new file in a text editor that can save as text-only (e.g., Microsoft Word, TeachText, MS-DOS Editor).
2. Type the following text exactly as shown to print the amount of available VM:

```
%!PS
% Prints the FreeVM value
/Courier-Bold findfont 24 scalefont
setfont
vmstatus
100 500 moveto
(*FreeVM: ) show
16 string cvs show
pop pop
showpage
```

3. Save this file in text-only format with the name “vmstatus.ps.”
4. Using a PostScript downloading utility (e.g., Adobe Font Downloader version 5.04, Apple LaserWriter 8.0 Utility), download the vmstatus.ps file to the printer.
5. The printer prints the value of the printer’s available virtual memory in bytes. This is the available virtual memory value used in the *FreeVM line in the custom printer file.

OR: Create a log file (i.e., text file) with the available VM by downloading a PostScript utility to query the printer:

1. Open a new file in a text editor that can save as text-only (e.g., Microsoft Word, TeachText, MS-DOS Editor).
2. Type the following text exactly as shown to save the amount of available VM in a log file:

```
%!PS
% Returns FreeVM value in a log file
vmstatus
(*FreeVM: ) = =
pop popf
```

3. Save this file in text-only format with the name “vmstatus.ps.”
4. Using a PostScript downloading utility (e.g., Apple LaserWriter 8.0 Utility version 7.4.1 or later), download the vmstatus.ps file to the printer.
5. The printer prints the value of the printer’s available virtual memory in bytes. This is the available virtual memory value used in the *FreeVM line in the custom printer file.

NOTE: The FreeVM value in the log file may yield some special characters in the number (e.g., *FreeVM: L234454). Delete these special characters before copying the FreeVM value (e.g., *FreeVM: 234454).

- C. Both the Update PPD Addition and the PPDShell.ps PostScript routine file included with PageMaker 5.0x

create a custom printer file that includes the available virtual memory for the targeted printer. You can copy and paste the available virtual memory value in the generated custom printer file into other custom printer files.

Unexpected Results

MAC OS / WINDOWS / UNIX

PostScript Error Troubleshooting Guide

PostScript errors are caused by miscommunication between a printer and computer: either the PostScript code is not understood by the interpreter at the printer, or it exceeds one or more of the limits built into the PostScript language. Printing to a printer that is low on memory, for example, can give unpredictable results or generate a PostScript error.

There are two parts to a PostScript error: the error and the offending command.

```
%%[Error: limitcheck; OffendingCommand:
image ]%%
```

The error (e.g., `limitcheck`) provides information as to what type of PostScript error occurred. The offending command (e.g., `image`) notes what was being processed at the time the error occurred, and may at times appear to be merely a string of nonsense characters. While it can be helpful to know the meaning of the error or offending command, many PostScript error issues can be resolved without this information.

PostScript errors don't display or print automatically—you need to set up your computer to do so. If the display or printing of PostScript errors is disabled on your computer when a PostScript error occurs, your printer may appear to process data but then stop without printing anything. To view PostScript errors on the Macintosh, disable the Background Printing option in the Chooser. To print PostScript errors in Windows, set up your printer driver to do so.

To print PostScript errors in Windows 95:

1. Choose Start > Settings > Printers.
2. Right-click on your target printer, then select Properties from the pop-up menu.
3. In your printer's Properties dialog box, click the PostScript tab.
4. Select the Print PostScript Error Information option, then click OK.

To print PostScript errors in Windows 3.1x:

1. In Program Manager, open the Control Panel in the Main group.
2. Double-click on the Printers icon.
3. Select your target printer from the list of installed printers.
4. Click Setup, then click Options, then click Advanced.
6. In the Advanced Options dialog box, select the Print PostScript Error Information option.

7. Click OK to close the remaining dialog boxes.

Some applications, such as Adobe PageMaker, have the ability to download their own error handlers. Refer to your product user manual to verify whether your application has this functionality. (In Adobe PageMaker, select the Include PostScript Error Handler option in the Print Options dialog box to download PageMaker's error handler.) Error handler utilities can also be used with all applications.

The information that follows is divided into four sections: common causes of PostScript errors, techniques for isolating the cause of an error, common PostScript errors with their likely causes, and common Offending Commands with their likely causes. While you may be able to interpret an error message and quickly pinpoint the source of a problem, you will most likely need to use troubleshooting techniques as well.

COMMON CAUSES OF POSTSCRIPT ERRORS

- Element on the page (text, or imported graphics such as EPS, PICT, or WMF)
- Data corruption
- Damaged font
- Complexity (exceeds printers available memory)
- Communication error (devices on other ports, loose wires, system level issues, problems with printer hardware)
- Damaged printer driver
- Printing to a PostScript emulator (printer using a non-Adobe licensed version of PostScript)

ISOLATING POSTSCRIPT ERRORS

To isolate a PostScript error, first determine when it occurs. Do you receive the error:

- When printing from just this application on this computer, or from all applications on this computer?
 - If all applications generate the same error or exhibit problematic behavior, you need to isolate which piece of your system is not working properly. These PostScript errors are typically communication errors, so potential causes include damaged fonts, damaged system files, a damaged printer driver, network spooling issues, or problems with your printer hardware. Make sure that your printer is turned on and check all cable connections. Contact your printer manufacturer or system software support for assistance in isolating the problem.
- When printing a particular file created in this application, or when printing any file created in the same application?

Since PostScript errors can be related to file complexity, individual elements on a page, or even a SCSI port connection (e.g., for a scanner or external hard drive), you will want to know just how widespread the problem is. If every file created in this application generates a PostScript error when printed, you may need to reinstall the application. It's possible that your printer is using a PostScript emulator (e.g., Pacific Page cartridge, Phoenix PostScript Interpreter) that handles

PostScript generated by older or simpler applications, or by older printer drivers that cannot process data from updated or more demanding software and drivers. If you know that your printer is a PostScript emulator, or it's simply an older printer, try printing to a device that uses a current version of Adobe licensed PostScript (e.g., Apple LaserWriter II NTX, HP LaserJet 4 PostScript printer). If you're not certain whether you have a PostScript emulator or your printer is capable of supporting newer versions of PostScript, contact your printer manufacturer.

It is also possible that you are using a particular font or graphic in all of the files receiving a PostScript error. As a test, try creating a new file, drawing a simple box or line on the page and printing it. If your test file prints, you'll want to determine which element (text or graphic) common to your files is causing the error. You may need to update or reinstall one or more of your fonts. If a specific graphic or all graphics from a particular application seem to generate the error, you may need to ensure the graphic isn't damaged or too complex, use a different graphic format, or inquire about updates to either application. Contact technical support for your product if you need this kind of information.

- When printing all pages or just one?

If you can isolate the problem to one or several files, you may also find that the problem occurs only when printing specific pages. To troubleshoot problems occurring when printing multiple pages, look for common elements. Perhaps you are using the same element (graphic or text) on more than one page. Items like a company logo or corporate font are suspect if they appear on problematic pages.

Whether the error is specific to one page in a single file, or whether it occurs on several pages of different files, use the following techniques to isolate the problem. Open a copy of your file and try printing half of the elements on the page. If you still receive an error, try printing the other half of the page. Try deleting elements from the page until you are able to print. No output, even when all elements have been removed, indicates the file itself is probably damaged. To ensure the file is not damaged, copy and paste all of the elements from this file into a new one, save it with a different name, and print. If you are able to print by reducing the information on your page, you most likely have an element on the page that contains some bad information, or your file is simply too complex for your printer's capabilities.

In the process of deleting elements from the page, you may already have identified which item is causing the error. If not, try printing text and drawn elements but no imported graphics. Some applications, such as Adobe PageMaker, give you the option to proof print a file (i.e., print all elements on a page except imported graphics). Check your application's user manual to see if this option is available. An imported graphic can cause

a PostScript error if it contains damaged or poorly written information, or if it is extremely complex (e.g., contains custom fills, complex type effects, nested objects, or many points on a path). It's possible to create a graphic or file of such complexity that even a high-end printing device cannot process the data required to output it. Also, graphic formats are updated periodically, so an EPS file created from an application purchased four years ago isn't based on the same standard as an EPS file created in a newer application.

Once you've identified which graphic seems to generate the error, try re-importing it into your file. If this does not work, try re-exporting it from the source application in the same or a different format, and then re-importing it. Check whether the graphic prints from your application if it is the only element in a new file. It may be complex enough that combining it with other elements on a page is too much for your printer. A graphic that won't print as the only element in a new file is damaged. A graphic that prints, but not in combination with other elements, is generating errors related to printer memory.

You may also find that the error can be isolated to a particular piece of text on the page, or to any text assigned a specific font. Try retyping the text you've identified as the source of problems. If you suspect a font rather than specific text, assign a different font for all occurrences of the suspicious font. Your original font may be damaged, or may not meet industry standards for font specifications.

- When printing complex files, or files containing complex elements?

If this is the case, you need to consider simplifying your file. Some applications, such as Adobe PageMaker, are not designed to create complex elements, but do allow you to import such elements from other sources. Applications like Adobe Illustrator or Adobe Photoshop enable you to create complex files without importing any data. To simplify a file in an application like PageMaker, you may need to use fewer imported items or fewer fonts that must be downloaded to your printer. If your application can generate complex elements, you may need to use fewer points on a path, reduce the number of items that have been copied or cloned multiple times, or simplify customized fills or gradients. Errors related to complex text effects (e.g., text that has been skewed, rotated, or kerned) may be eliminated by converting the text information to outlines or paths. EPS files can often be identified as the source of a PostScript error because they may contain complex information. The information included in this publication is by no means an exhaustive reference for understanding and troubleshooting PostScript issues. You will be able to handle many of your own PostScript printing problems by using these techniques, and in the case of exceptionally difficult issues, you will be much better prepared to provide a technician with information needed to resolve your issue quickly.

Complexity Errors

error	description	likely cause	solution
dictfull	Related to a PostScript dictionary being mismanaged, too full, or damaged.	-Imported graphic -Damaged font -Data corruption	Isolate problem element.
fatal system error at [number string]	Indicates the printer is completely out of memory, while the number following the error is a memory location in the printer.	-The printer memory requirements of the file are too high for the current memory state of the printer.	Simplify your publication, restart your printer.
limitcheck	A PostScript implementation limit has been exceeded.	-Printer memory requirements of file, or a limit as defined in PostScript has been reached.	Check offending command
VMerror	Out of printer memory. The offending command is where processing stopped stopped when memory ran out. An attempt was made to create a new composite object (string, array, or dictionary) that would exhaust Virtual Memory resources.	Printer memory requirements of file.	Simplify page, or modify PPD file if applicable.

Communication Errors

error	description	likely cause	solution
ioerror	Bad data transmission, cannot read or write data.	-Communication error -Binary image data (TIFF, EPS, or DCS graphics) -Disk errors	Try printing from a different application, reinstall printer driver, omit graphic data.
timeout	A time limit has been exceeded (e.g., communication limit between the computer and printer).	-Damaged Printer Driver -Large imported graphics -Complex fill patterns -Complex type effects -Network problems -Nested grouped elements	Isolate element, increase timeout settings.

postscript code errors

error	description	likely cause	solution
invalidrestore	Improper attempt to restore.	-Imported graphic -Data corruption	Isolate element.
stackoverflow, stackunderflow	There are either too many objects (values or commands) on one of the PostScript stacks (overflow) or an object is missing (underflow).	-An offending element -Imported graphic -Memory problem -Data corruption	Isolate element, simplify page.
typecheck	An object or value does not match PostScript expectations Typecheck does not necessarily imply problems with text.	-Communication error -An offending element -Imported graphic -Data corruption	Isolate element, copy and paste data to new file.
undefined	A keyword, value, or object is encountered that cannot be defined.	-A printer prep file or PostScript dictionary is missing -Imported graphic -Damaged font -Data corruption -Communication error -Missing PostScript header information	Isolate element, try printing from a different application, copy and paste data to a new file, if converted from a previous version, try printing again from that version.

Offending Commands Related to Complexity

Command	Likely Cause
charpath	Complex text or text effects.
clip, eoclip	Gruated or radial fills, complex or compound paths, text effects, masks.
curveto	Complex curve paths.
fill, eofill	Complex or compound paths.
lineto, moveto	Paths composed of many points (may include converted PICT graphics).
makefont	Text effects (includes scaled, skewed, rotated, or reflected text).
stroke	Complex paths, paths with complex fills and outline strokes, or converted PICT graphic. note: A complex path can be described as one that contains many points; a path may be too complex for the current flatness settings of an element in your illustration application. Refer to your user manual for more information about flatness settings.

Offending Commands Related to Printer Memory

Command	Likely Cause
def	Printer memory, printer fonts, or imported graphics.
dict	Printer memory, printer fonts (see errors related to system components).
framedevice	Printer memory, printing from an older application, using an outdated printer driver (PostScript level 1 only).
index	Printer memory, imported graphics.

Offending Commands Related to One or More Elements on a Page

Command	Likely Cause
ashow, widthshow	Offset text (e.g., kerned text, super or subscripted text, custom letter or word spacing)
awidthshow	or damaged font.
colorimage	Color bitmap images.
currentpoint	Imported graphic, elements created in application.
def	Imported graphic (may also be related to printer fonts or printer memory).
exch	Imported graphic (may also be related to a damaged font).
get	Imported graphic.
image	Bitmap or paint-type images.
imagemask	1-bit or paint-type bitmap image, bitmap fonts.
index	Imported graphic (may also be related to low printer memory).
itransform	Very small element.
kshow	Kerned text, including pair kerning.
nostringval	An offending element, perhaps an imported graphic (may also be related to a damaged font).
packedarray	Imported graphics (may also be related to data corruption, or printing to a PostScript emulator).
put	Custom fills (may also be related to a damaged font).
setdash	Custom PostScript line, imported graphic with custom lines.
setgray	Tints, imported EPS files, fonts created with old versions of Fontographer.
setlinecap	Custom PostScript line, imported graphic with custom line.
setlinejoin	Custom PostScript line, imported graphic with custom line.
show	Text (includes text in an imported EPS graphic).
stringwidth	Text (includes text in an imported EPS graphic).
character string	Imported image file (damaged, very high resolution, poorly written), data corruption.

Offending Commands Related to Damaged System Components

def	Printer fonts (also imported graphics, printer memory).
dict	Printer fonts (also printer memory).
exch	Damaged font (also imported graphics).
flxproc	Damaged font.
nostringval	Damaged font (also specific element on the page).
put	Damaged font (also related to custom fills in graphic elements).
setpageparams	Page or paper size selected in application exceeds the imageable area defined in the PPD for this printer. PPD may have been incorrectly edited.

Printer Inaccuracy General Information

When PostScript code contains accurate numbers, inaccurate output from a PostScript printing device is due to the printing device itself. It is up to the printer to control paper feed and paper stretch for accurate output. When paper or film stretches, or other printer adjustments are needed, output will vary from specified.

A test file containing PostScript code describing one easily measured element (e.g., 4-by-4" square), can be downloaded to check printer accuracy and eliminate software as a cause of inaccuracy.

The following PostScript file creates a 4-by-4" box, which you can download directly a printer several times. If the result is slightly, but consistently off, the printer, not the software, is the source of the inaccuracy. Because of paper stretch, this inaccuracy is usually in length, rather than width.

If you print the same PostScript box to another printer, the result will be consistent on that printer, but may be different from the output on another printer.

To create a PostScript file describing a 4-by-4" square:

1. In a word processing program that can save in text-only (e.g., Microsoft Word, TeachText) type the following code:

```
% 4 inch black box with no stroke
144 288 moveto
0 288 rlineto
288 0 rlineto
0 -288 rlineto
closepath
fill
showpage
```

2. Save as text-only with the name "4 inch box.ps."
3. Download the 4 inch box.ps file to the printer using a downloading utility (e.g., Adobe's Font Downloader, Apple's LaserWriter Font Utility).

Error Opening or Separating a DCS File with a Name Beginning in a Space

ISSUE

An error occurs when you open or print a DCS file whose name begins with a space character.

SYMPTOMS

When opening a DCS file, Adobe Photoshop 2.5.1 returns the error, "Could not open a DCS color plate because File not found."

When separating a linked DCS file, PageMaker 5.0x returns the error, "Some DCS files could not be found. Check main DCS link and re-link if necessary. Make sure DCS files are kept in same folder as the main file. 7816:5827."

When separating a linked DCS file, QuarkXPress 3.3 returns the error, "Couldn't find the DCS plate '[file name.C]' for '[file name]'. OK to print missing plates in low resolution?"

SOLUTIONS

Remove the space character from the beginning of each of the DCS separation files. For example, change "filename.C" to "filename.C."

or: Open and print the DCS file from Photoshop 3.0.

ADDITIONAL INFORMATION

Desktop Color Separation (DCS) files consist of five files: a main composite file and four process separation files (e.g., "filename.C," "filename.M," "filename.Y," and "filename.K"). When a DCS file is opened or separated, information in the main file is used to link to each of the separation files. Some applications (e.g., Photoshop 2.5.1, Page-Maker 5.0x, QuarkXPress) cannot link to DCS separation files when any of their filenames begin with the space character. For example, when you open a DCS main file that links to separation files whose names begin with a space (e.g., "filename.C") in Photoshop 2.5.1, Photoshop returns the message, "Could not open a DCS color plate file because File not found."

PostScript Error "Undefined; OffendingCommand:featurecleanup" When Printing

ISSUE

When you print a document using the LaserWriter 8.1.1 printer driver, the PostScript error, "Undefined; OffendingCommand:featurecleanup" appears.

SYMPTOMS

In the LaserWriter 8.1.1 printer driver, the printer is set up with a PPD (PostScript Printer Description) file that contains the "*JobPatchFile:" or "*PatchFile:" keyword.

The PPD file selected in the application's print dialog box (except PageMaker 5.0x's) contains the "*JobPatchFile:" or "*PatchFile:" keyword.

You are printing from PageMaker 5.0x with Background Printing enabled.

You are printing a PageMaker 5.0x publication containing a PICT, CGM, WMF, DXF, or OLE PICT graphic.

SOLUTIONS

If you're printing from PageMaker 5.0x, turn off Background Printing in the Chooser.

or: Make sure an imported graphic is not causing the error by printing the file or page without any imported graphics (e.g., select the Proof option). After isolating an offending graphic, resave the graphic and replace.

or: If you're printing from an application other than PageMaker 5.0x, do one or more of the following:

- A. In the Chooser, select the LaserWriter 8.1.1 printer driver, select your printer and click Setup, click the Select PPD option, then change the printer's associated PPD file to one that doesn't contain the *JobPatchFile or *PatchFile keyword.

- B. In the printing application, select a PPD file that doesn't contain the *JobPatchFile or *PatchFile keyword.
OR: Print using the LaserWriter 8.0 or earlier printer driver.

ADDITIONAL INFORMATION

When you print using a PPD file that contains a *JobPatchFile or *PatchFile keyword, the "featurecleanup" command is needed to handle the *JobPatchFile or *PatchFile keyword. The LaserWriter 8.1.1 driver uses the "featurecleanup" command before it is defined in PostScript, resulting in the PostScript error "undefined; OffendingCommand: featurecleanup."

PPD files modified to prevent TIFF images from printing too dark or light from PageMaker 5.0, the Apple LaserWriter PPD file included with PageMaker 5.0, and other PPD files (e.g., AccelaWriter 8000 [PM50] and AccelaWriter 4000 [PM50]) contain the a *JobPatchFile or *PatchFile keyword.

If you choose File > Print in PageMaker without pressing the Option key, PageMaker generates the PostScript code for the publication itself, with the exception of PostScript fonts and PICT graphics. PageMaker 5.0x uses the LaserWriter 8.x printer driver to convert PICT files (including converted CGM, WME, DXF or OLE PICT graphics) to EPS graphics. PageMaker uses the LaserWriter printer driver to generate the PostScript code for the entire publication you hold down the Option key while choosing File > Print.

If you print from PageMaker 5.0x with Background Printing enabled, the PPD file associated with the printer specified in the LaserWriter 8.1.1 printer driver is read, causing the "undefined; OffendingCommand: featurecleanup" PostScript error when the associated PPD file contains either the *JobPatchFile or *PatchFile keyword.

Low Line Screens Not Printing as Specified

ISSUE

When you print a document to a PostScript device, it prints at a higher line screen frequency than the low value you specified.

SOLUTIONS

Disable screening or calibration software at the imagesetter's RIP (raster image processor).

OR: Print to another device capable of printing the desired line screen value.

ADDITIONAL INFORMATION

The lowest line screen (lpi) value that a printer can image varies from printer to printer. Screening or calibration software (e.g., Agfa Balanced Screens, HQS screens) may prevent some custom screen frequencies from printing, because it optimizes screen and angle rulings for the imagesetter.

You can determine the lowest line screen value possible for your printer by downloading a PostScript file to it that draws a tinted box set to 1 line per inch (lpi). To create the file:

1. Create a new file in a text editor that can save in text-only format (e.g., TeachText, Notepad) 2. Type the following text exactly as shown:


```
gsave
1  % This number is the screen frequency
45 % This number is the screen angle
{180 mul cos exch 180 mul cos add 2 div} %
  This is the spot function
setscreen
% 4 inch box, 20% fill, 1 pt. black stroke
144 288 moveto
0 288 rlineto
288 0 rlineto
0 -288 rlineto
closepath
gsave
.8 setgray
fill
grestore
stroke
grestore
showpage
```
2. Name the file "20box.ps" and save it in text-only format.
3. Disable all calibration and screening software at the imagesetter.
4. Download the PostScript file to the printer.
5. Measure the line screen value in the 4-inch box. This is the lowest lpi value your printer can produce.

General Information

MAC OS / WINDOWS / UNIX

PostScript Printer Memory General Information

PostScript printer memory (RAM) is divided into sections, which are used in the following order:

1. Frame buffer (builds the page with pixels).
2. Prep files (dictionaries used by the printer to define PostScript).
3. Fonts manually downloaded using a downloader utility.
4. PostScript information describing each print job.
5. Fonts downloaded to RAM during printing.

The majority of PostScript printer memory is dedicated to the frame buffer to build the page. The higher the resolution and the larger the page, the more memory the frame buffer requires. For example, when you print a letter-size page to a standard Apple LaserWriter NTX printer at 300 dpi, there is 150K to 300K of available memory for prep files, fonts downloaded to memory, and the PostScript file

you're trying to print. Although imagesetters come with more memory than laser printers, they require more to create more pixels to print high resolution.

Troubleshooting PostScript Errors

PostScript errors are caused by PostScript code that is not understood by the printer's PostScript interpreter, or PostScript code that exceeds one or more of the limits built into the PostScript page description language. PostScript error messages include a PostScript error type, which is one of a relatively limited number of different types, and an offending command, which can be any combination of ASCII characters. PostScript errors usually look like:

```
%%[Error: <type>; OffendingCommand: <offending command> ]%%
```

For example, the PostScript error `%%[Error: dictfull; OffendingCommand: def]%%` contains the PostScript error type "dictfull" and the offending command "def." The error type indicates what kind of problem the PostScript interpreter had; the offending command is the last command it tried to process, and is sometimes, but not always, the command that caused the problem.

Some PostScript errors will point you right to the cause of the problem, and some will get you looking in the right direction. If your printer appears to process data but then stops without printing anything, it may have encountered a PostScript error. If you don't get the PostScript error readout, you can coax one from your printer in any of these ways:

In Windows 95:

1. Choose Start > Settings > Printers.
2. Right-click on your target printer, then select Properties from the pop-up menu.
3. In your printer's Properties dialog box, click the PostScript tab.
4. Select the Print PostScript Error Information option, then click OK.

In Windows 3.1x:

1. In Program Manager, open the Control Panel in the Main group.
2. Double-click on the Printers icon.
3. Select your target printer from the list of installed printers.
5. Click Setup, then click Options, then click Advanced.
6. In the Advanced Options dialog box, select the Print PostScript Error Information option.
7. Click OK to close the remaining dialog boxes.

On the Macintosh:

- Select either Summarize on Screen or Print Detailed Report in the PostScript Error pop-up menu in the Apple LaserWriter 8.x or Adobe PSpriinter 8.x Print Options dialog box.
- Disable print spoolers, including Background Printing. To disable Background Printing, in the Chooser, select your printer driver and then select Off for the Background Printing option.

In Windows or on the Macintosh:

Use an error handler utility designed to work with multiple applications or use an error handler supplied by your application, if available. For example, Adobe PageMaker offers the Include PostScript Error Handler option in the Print Options dialog box.

UNDERSTANDING POSTSCRIPT ERRORS

To begin troubleshooting your printing problem, use the PostScript Error Types and the PostScript Offending Command sections below. The PostScript Error Types section lists common error types under a general cause, and the PostScript Offending Command section lists common offending commands under what most likely caused the error.

For example, to use these sections after you receive the PostScript error, `%%[Error: limitcheck; OffendingCommand: image]%%`, locate the "limitcheck" type and "image" offending command in the sections. The PostScript Error Types section lists "limitcheck" under "Exceeds printer's memory or PostScript language limit." The PostScript Offending Command section lists the "image" offending command under "bitmap data." By putting these two together, you have a probable cause—a bitmap image exceeds the printer's available memory (or other PostScript language limit). In such a case you'd probably need to simplify the bitmap graphic by resampling or rescanning it at a lower resolution, or by printing to a printer that has more available memory.

Some PostScript errors won't help you pinpoint a likely cause. For example, if you receive the PostScript error, `%%[Error: undefined; OffendingCommand: (random characters)]%%`, the PostScript Error Types section lists "undefined" under "Errors that indicate unintelligible PostScript code" and the PostScript Offending Command section lists "[random characters]" under "any element or file." In this case, you'll need to continue troubleshooting to isolate the cause of the problem.

POSTSCRIPT ERROR TYPES

Errors that indicate something exceeds the printer's memory or a PostScript-language limit:

```
dictfull
fatal system error at [various]
limitcheck
VMerror
```

Errors that indicate communication problems:

```
interrupt
ioerror (May also be caused by a disk
  problem, such as a bad sector, on the
  printer's hard disk.)
timeout
```

Errors that indicate unintelligible

```
PostScript code:
dictstackoverflow
dictstackunderflow
execstackoverflow
handleerror
invalidaccess
```

invalidexit
 invalidfileaccess
 invalidfont
 invalidrestore
 nocurrentpoint
 rangecheck
 stackoverflow
 stackunderflow
 syntaxerror
 typecheck
 undefined
 undefinedfilename
 undefinedresult
 unmatchedmark
 unregistered

POSTSCRIPT OFFENDING COMMANDS

Offending commands associated with specific text or font element:

ashow
 awidthshow
 charpath
 definefont
 findfont
 imagemask
 kshow
 makefont
 selectfont
 show
 stringwidth
 widthshow

Offending commands associated with specific masks (clipping paths):

clip
 eoclip

Offending commands associated with fills and lines, often in imported object-oriented, or vector, graphics (EPS files or PICT graphics, for instance):

arc
 arcto
 currentpoint
 curveto
 eofill
 fill
 lineto
 moveto
 rcurveto
 rlineto
 setdash
 setlinecap
 setlinejoin
 stroke

Offending commands associated with bitmap data:

colorimage
 image
 imagemask (Associated with 1-bit image
 bitmap graphics and bitmap fonts.)

Offending commands associated with any element or file:

array
 def
 dict
 exch
 get
 index
 itransform
 nostringval
 packedarray
 put
 restore
 save
 setgray
 setpageparams
 setscreen
 [random characters]

TROUBLESHOOTING PRINTING PROBLEMS

While many PostScript error quickly pinpoint the source of a problem, you'll need to troubleshoot your printing problem if you don't receive a PostScript error message, or if the PostScript error doesn't limit the number of likely causes. To troubleshoot your printing problem, isolate when the problem occurs to determine if it is a system-level, application-specific, file-specific, or element-specific problem. After narrowing down when the problem occurs, eliminate likely causes until you solve the problem.

ISOLATING SYSTEM-LEVEL PRINTING PROBLEMS

Do you receive the error when you print from multiple applications? If the same problem occurs when you print from multiple applications, the cause is most likely a problem at the system level. System-level problems are commonly caused by damaged fonts, damaged system files, damaged printer drivers, insufficient hard disk space, network problems, or hardware problems.

Check for loose cables or faulty connections by securing loose cables by unplugging and replugging them. If there are any other devices that your print job needs to travel through (like a switch box), check their connections, too. Problems caused by severed connections have unambiguous symptoms: your printer won't receive data, so it won't do anything—none of its readouts will blink, and it certainly won't print anything. But when you have a loose connection, the symptoms of your problems might be more ambiguous: small jobs might print, but larger jobs won't, and on a Macintosh, the printer in your Chooser might appear and disappear intermittently.

Make sure you are using an up-to-date PostScript printer driver, or use the version of the PostScript printer driver required by your application. You also need plenty of free hard-disk space to print, especially when you print large documents. And for fast and efficient printing, make sure your free hard-disk space is unfragmented, especially on the disk your system uses to create temporary files, which is usually the disk that contains your operating system.

If your printer is an older PostScript printer or one that uses a PostScript emulator (e.g., Pacific Page cartridge, Phoenix PostScript Interpreter), it may not understand the newer PostScript code generated by your application or printer driver. To rule out this cause, try printing your file to a device that uses a more current or up-to-date version of Adobe licensed PostScript.

ISOLATING APPLICATION-SPECIFIC PROBLEMS

Do you receive the error when you print any file from a single application? You can easily determine if you only receive the error in a single application by creating a new test file that contains only a simple element, such as a rectangle or line. If this test file prints, continue troubleshooting for file-specific causes. If you receive a PostScript error when you print any file from the same application, rule out damaged application software as the cause by reinstalling the application, including its support files and preferences file.

ISOLATING FILE-SPECIFIC PROBLEMS

Do you receive the error when you print a specific file, or specific files, from a single application? If the error occurs when you print a specific file, the file may be damaged, or it may contain a damaged element or an element that doesn't print because of another reason. Begin troubleshooting by checking your file's print settings against those of a file that does print.

To rule out file damage as the cause, copy the file's elements into a new file, save your file using the Save As command, delete elements you don't need to print, or run any built-in diagnostic routines your application offers. In PageMaker, for instance, you can repair certain file problems by using its Diagnostic Recompose feature: deselect all elements in the file, then choose Type > Elements while you hold down the Ctrl and Shift keys (Windows) or the Option and Shift keys (Macintosh). If, after you rule out file-specific causes, you still receive the error when you print the file, troubleshoot file-specific problems.

ISOLATING ELEMENT-SPECIFIC PROBLEMS

Do you receive the error when you print only a specific page or elements on a page? After you've ruled out a damaged file as the cause, the cause of your printing problem is most likely a damaged or incorrectly written element or font, or by an element or combination of elements on a page that requires more printer memory than is available. If you receive the error when you print a range of pages, look for common elements. If you can print all elements individually or in small groups, but not all at the same time,

the combination of elements you are printing requires more printer memory than your printer has available.

To isolate the element, or elements, causing your problem, make a copy of your file and print groups of pages, and then one page at a time, until you've narrowed down the problem to a specific page or range of pages. After narrowing down which page or page range is causing the problem, isolate the element causing the problem by removing an element from the page and then printing. Continue until you can print the file without receiving the error. (You can also remove elements in groups to narrow down the problem faster. For example, remove half of the elements in your file and then print your file. If the error doesn't reoccur, print the other half of the elements.) Some applications, such as PageMaker, offer an option that enables you to print some elements but not others. For example, when you print from PageMaker by selecting the Proof Print option, PageMaker prints the text but not the graphics. Using this option, you can quickly determine if your problem is caused by an imported graphic or other element in your PageMaker publication.

If the element causing your problem is text or an element you've created in the application, recreate the element. For text elements, also try using a different font (e.g., reformat the text using a different kind of font or a printer-resident font). If your file prints when you use a different font, reinstall the original font to eliminate damaged font files as the cause.

If the element causing the problem is an imported graphic, first try reimporting the graphic. If the printing problem still occurs, open the graphic in the application in which it was created, resave it, ensure it prints from this application, then reimport the graphic. If you still can't print the imported graphic, try resaving it in a different format, exporting it from a different application, or simplifying it so that it requires less printer memory.

An imported graphic can cause a PostScript error if it contains damaged or incorrectly written information, or if it too complex for your printer (i.e., it requires more memory than your printer has available). To begin simplifying a file, use fewer imported graphics, use fewer fonts that must be downloaded to your printer, use fewer text effects (e.g., skewed or rotated text, type effects), delete elements you don't need, create paths using fewer points, or resample or rescan bitmap images at a lower resolution. Graphic formats such as EPS are updated periodically, so older applications may use an older standard that newer software or hardware may not understand.

Adobe PSPrinter®

Feature Techniques, 566; Unexpected Results, 567; Application Errors, 570; System Errors, 571; Printing Problems, 572; Installation Issues, 573

Feature Techniques

WINDOWS

Adding Printers Using AdobePS 4.1 Setup Utility

The AdobePS 4.1 PostScript Printer Driver supports Windows 95, but does not support Windows 3.1x, Windows for Workgroups, or Windows NT.

To install printers with AdobePS 4.1:

1. Launch the AdobePS 4 Setup Utility by choosing Start > Programs > AdobePS4.
2. In the AdobePS 4 PostScript Printer Driver Setup dialog box, click Next.
3. When your printer is connected directly to your computer, select Local Printer, then click Next in the Printer Type dialog box.
or: When your printer is connected through a network, select Network Printer, then click Next in the Printer Type dialog box. In the Network Path dialog box, type the network path or queue name, or click Browse to locate the printer, then click Next.
4. In the Install PostScript Printer from PPD dialog box, install PPD files by doing one or more of the following:
 - A. Locate the folder on your hard disk that contains PPD files (e.g., C:\PM6\RSRC\USEENGLISH\PPD4), then select one or more PPD files by double-clicking the printer's name, or clicking the printer's name then clicking Next.
 - B. To install PPD files included on the AdobePS 4.1 CD-ROM:
 1. In the Drives list, select the drive indicator for your CD-ROM drive.
 2. In the Directories list, open the PPDs folder located in the Drvrdisk folder in the Adobeps folder on the CD-ROM.
 3. Open the folder with the name of your printer's manufacturer (e.g., Agfa, Hewlett-Packard, IBM).
 4. Select the printer you want to install by double-clicking the printer's name, or clicking the printer's name then clicking Next.
 5. When installing a local printer, select a port from the list of available ports in the Local Port Selec-

tion dialog box, then click Next.

6. In the Add Printer dialog box, accept the default name for the printer, or type in the preferred name, select Yes if you want this printer to be the default printer for your Windows applications, select Yes if you want to print a test page, then click Next.
7. In the Properties dialog box, adjust the Properties for your printer as desired, then click OK to return to the AdobePS 4 PostScript Printer Driver Setup.
8. In the Setup dialog box, either click Exit to quit AdobePS 4 PostScript Printer Driver Setup or click Add Another then repeat steps 3-8 to add another printer.

MAC OS

Setting up Spooling Location for PSPrinter 8.x

When you spool print jobs using the Adobe PostScript printer driver 8.x (PSPrinter), you can use PSPrinter's default spooling location, or you can change the default spooling location so that PSPrinter spools files to another local hard disk or Macintosh on the network.

USING THE DEFAULT SPOOLING LOCATION

By default, PSPrinter 8.x spools print jobs to the startup hard disk, using its available hard disk space to store information. When Background Printing is Off, PSPrinter spools files to the temporary folder it creates, which it names Printing Temp Folder (PSPrinter 8.1 and later) or PSPrinter Temp Folder (PSPrinter 8.0) and locates in the Extensions folder in the System Folder. When you print with Background Printing enabled, Apple's PrintMonitor spools files to the Print-Monitor Documents folder in the System Folder. After Print-Monitor spools the file to the Printing Temp Folder, PSPrinter Temp Folder, or PrintMonitor documents folder, PSPrinter converts it to PostScript code, compresses it for faster transmission to the printer, then sends it to the printer.

If there is not enough disk space for the spooled file on the hard disk, PSPrinter returns a Disk Full error. To prevent a Disk Full error, remove files on the startup disk (i.e., volume containing the active system software) to ensure there

is sufficient available disk space, or spool to another volume (local or remote hard disk) that has more available space.

SPOOLING TO ANOTHER LOCAL HARD DISK

You can set up PSPrnter to spool to another local hard disk (e.g., external hard disk) when you print in Foreground printing mode (i.e., Background Printing is turned Off in the Chooser).

To set up PSPrnter to spool to another local hard disk:

1. On the disk you want to spool to, create a new folder and name it "Printing Temp Folder" (PSPrnter 8.1 and later) or "PSPrnter Temp Folder" (PSPrnter 8.0).
2. Create an alias of the newly created folder by selecting it and then choosing File > Make Alias.
3. Move the alias into the Extensions folder in the System Folder.
4. Select the alias and rename it "Printing Temp Folder" (PSPrnter 8.1 and later) or "PSPrnter Temp Folder" (PSPrnter 8.0).
5. In the Chooser, select PSPrnter, select Off for Background Printing, and then close the Chooser.

SPOOLING TO ANOTHER MACINTOSH ON THE NETWORK

Before setting up PSPrnter to spool documents to another Macintosh on the network:

- Install System 7.x on both Macintosh computers.
- Install the same version of PSPrnter 8.x (e.g., PSPrnter 8.3) on both Macintosh computers.
- Enable Background Printing in the Chooser on both Macintosh computers. When Background printing is enabled, any error generated by PrintMonitor appears only on the local Macintosh.
- Install the same fonts on both Macintosh computers.
- Disable virus protection utilities (e.g., Symantec AntiVirus, Norton Utilities) on both Macintosh computers.

To set up PSPrnter to spool to a Macintosh on the network:

1. On the remote Macintosh (i.e., the Macintosh that you are spooling to), open the Chooser.
2. In the Chooser, select PSPrnter, select a destination printer, select On for Background Printing, then close the Chooser.
3. Open the Sharing Setup control panel, click Start in the File Sharing section, then close the control panel.
4. In the Finder, select the System Folder, then choose File > Sharing.
5. In the Sharing dialog box, select the option labeled "Share this item and its contents." For the Everyone options, select See Folders, See Files, and Make Changes. Select the option labeled "Can't be moved, renamed or deleted" and then close the Sharing dialog box.
6. In the System Folder, select the PrintMonitor Documents folder and then choose File > Make Alias. The Finder creates a file named "PrintMonitor Documents alias" in the System Folder.
7. On the local Macintosh (i.e., the Macintosh that you are printing from), open the Chooser and then select PSPrnter and a destination printer. Print jobs will not

print to the printer you selected in this step, but PSPrnter requires that you select one.

8. Select On for Background Printing and then select AppleShare.
9. In the Select a File Server window, select the remote Macintosh and then click OK.
10. Log into the remote Macintosh as Guest, select the remote volume's System Folder, click OK, then close the Chooser. The System Folder icon will appear on the local Macintosh desktop.
11. Copy the file named "PrintMonitor Documents alias" from the remote hard disk's System Folder to the local hard disk's System Folder.
12. In the System Folder on the local Macintosh, delete the PrintMonitor Documents folder, then rename the PrintMonitor Documents alias file to "PrintMonitor Documents".
13. On the remote Macintosh, delete the PrintMonitor Documents alias file.

Unexpected Results

WINDOWS

Fonts Tab Dimmed in AdobePS 3.0.1 Setup

ISSUE

After selecting Setup in the AdobePS PostScript Printer Driver 3.0.1 printer driver running in Windows 3.1x, the Fonts tab is dimmed, preventing you from downloading fonts and PostScript files to the printer by clicking the Font Downloader button in the Fonts tab. Other tabs (e.g., Features, PostScript) are available.

SOLUTIONS

Enable TrueType fonts in the Fonts Control Panel:

1. Double-click the Control Panel icon in the Main Group in Program Manager.
2. Double-click the Fonts icon.
3. Click TrueType.
4. Select Enable TrueType Fonts, click OK, then close the Fonts Control Panel.

or: Launch the Font Downloader (WINDOWN.EXE) by choosing the Run command in Program Manager:

1. In Program Manager, choose File > Run.
2. In the Run dialog box, type "C:\WINDOWS\SYSTEM-WINDOWN.EXE" in the Command Line text box, then click OK.

ADDITIONAL INFORMATION

Because the AdobePS PostScript Printer Driver 3.0.1's Fonts tab contains the TrueType font substitution options, the Fonts tab is dimmed when TrueType fonts are not enabled in the Fonts Control Panel. When TrueType fonts in the

Fonts Control Panel are enabled, the AdobePS PostScript Printer Driver 3.0.1's Fonts tab is available.

Clicking Font Downloader in the Fonts tab or typing "C:\WINDOWS\SYSTEM\WINDOW.N.EXE in the Program Manager's Run dialog box launches WINDOW.N.EXE, which enables you to download fonts and PostScript files to a printer.

Virtual Memory Information Omitted on Installed Printer's Test Page

ISSUE

After choosing to print a test page for an installed printer using the AdobePS 4.1 printer driver, the test page lists no virtual memory information. Other test page information (e.g., printer name, driver name) prints as expected.

SOLUTION

Reinstall the printer, then print a test page from the AdobePS 4 Setup Utility, instead of from the printer's Properties sheet:

1. Launch the AdobePS 4 Setup Utility by choosing Start > Programs > AdobePS4 or by double-clicking Setup.exe in the Drvrdisk folder in the AdobePS folder on the PageMaker 6.01 Updater CD-ROM.
2. Follow the on-screen instructions to install the printer, accepting the default name for the printer or type in the preferred name, selecting Yes if you want this printer to be the default printer for your Windows applications, and selecting Yes to print a test page in the Add Printer dialog box.

ADDITIONAL INFORMATION

When you print a test page in Windows 95 by selecting Print Test Page in the General pane of your installed printer's Properties window, the Windows 95 Printer Test Page, which does not include the printer's virtual memory information, prints. When you print a test page by selecting Yes to print a test page in the Add Printer dialog box in the AdobePS 4 Setup Utility, the AdobePS 4 PostScript Printer Driver Printer Test Page, which includes the printer's virtual memory information, prints.

The AdobePS 4.1 Readme.doc incorrectly states that "You can get printer memory information by printing a test page from the General properties dialog box."

When you reinstall a printer, the installer creates a copy of the installed printer's icon, named "[Printer Name] (Copy 1)," in the Printers Control Panel. After printing a test page to your printer, you can delete the copy of the installed printer by selecting the copy of the installed printer's icon, then pressing the Delete key.

Font Menus in Windows 95 List Fonts Removed from ATM

ISSUE

After you remove fonts in Adobe Type Manager (ATM) 3.0x in Windows 95, application font menus continue to list the removed fonts. The AdobePS 4.1 printer driver is installed and set as the default printer.

SOLUTIONS

Upgrade to ATM 4.0.

OR: With no other applications running, add or remove fonts in Ares FontMinder 3.0.5.

OR: Temporarily remove any font in ATM, rename the Psfonts folder, then launch Wordpad:

1. Remove a font (e.g., Anna) from the ATM Control Panel, then exit ATM.
2. Rename the Psfonts folder (e.g., Psfontss).
3. Choose Start > Programs > Accessories > WordPad.
4. Quit WordPad.
5. Rename the Psfonts directory to its original name (i.e., Psfonts).
6. Readd the font you removed in step 1.
7. Restart Windows 95.

OR: Update the font list using the AdobePS 4.1 Update Soft Fonts option:

1. Make sure the fonts have been removed in the ATM Control Panel.
2. Rename the Psfonts folder (e.g., Psfontss).
3. Choose Start > Settings > Printers to open the Printers Control Panel.
4. Right-click on any printer that uses the AdobePS 4.1 printer driver, then choose Properties from the pop-up menu.
5. In the Fonts pane of the Properties dialog box, click the Update Soft Fonts button.
6. Click OK to close the Printers Control Panel.
7. Choose Start > Programs > Accessories > WordPad.
8. Quit WordPad.
9. Rename the Psfonts directory to its original name (i.e., Psfonts).
10. Restart Windows 95.

OR: Edit the Windows 95 Registry to remove PostScript font references:

1. Choose Start > Run, then type "regedit" in the Open textbox and click OK.
2. Make a backup copy of the Registry by choosing Registry > Export Registry File.
3. In the Export Registry File dialog box, choose a location and name for the backup file, then click Save.
4. Open the Hkey_Local_Machine \Software\Microsoft\Windows\CurrentVersion\PostscriptFonts key (i.e., directory).
5. Select all the Postscript font values (i.e., files) and press the Delete key to remove them. Do not remove the Default value or SerialNumber value.
6. Exit the Registry Editor, which saves your changes to the Registry, then restart Windows 95.

ADDITIONAL INFORMATION

When the AdobePS 4.1 printer driver is set as the default printer and you add fonts in ATM 3.0x, references to the fonts are added to the Atm.ini file, the Windows 95 Registry, and Windows 95 MFD files. When you remove fonts in ATM 3.0x, the font references are updated only in the Atm.ini file, causing the removed fonts to continue to display in font menus.

ATM 4.0 removes font references from the Registry, causing fonts to display in font menus as expected.

FontMinder 3.0.5 removes the PostScriptFonts key from the Registry when you add or remove a font. When the incorrect font references are removed with the PostScriptFonts key, font menus display fonts as expected. FontMinder must be the only application running when you add or remove a font.

When you remove a font or use the AdobePS 4.1 Update Soft Fonts option, then change the name of the Psfonts folder and launch WordPad, the font references should be updated so only the installed ATM fonts display in font menus. If the font references do not update, you must remove the font values from the Registry manually.

Removing or editing MFD files does not cause font menus to display correctly.

LaserJet 4MPlus Uses Upper Paper Cassette Instead of Lower with AdobePS 2.1.1

ISSUE

When you print to an HP LaserJet 4MPlus using the AdobePS 2.1.1 printer driver with the Upper Cassette option selected in the printer's Paper options, the printer uses paper from the Lower Cassette.

SOLUTIONS

Print using AdobePS 2.1.2 or later.

OR: Print using another printer driver (e.g., Microsoft PostScript 3.58 printer driver).

OR: Print to another printer (e.g., HP LaserJet 4M).

ADDITIONAL INFORMATION

The AdobePS 2.1.1 printer driver causes the HP LaserJet 4MPlus to use paper from the Lower Cassette when the Upper Cassette option is selected in the Paper pane of the printer's properties dialog box. Using AdobePS 2.1.2 or later, another printer driver, or another printer enables you to print from the Upper Cassette as expected.

PostScript Print Options Missing in FreeHand When Using AdobePS 4.1

ISSUE

When you print using the Adobe PostScript printer driver 4.1 (AdobePS), some options (e.g., Separations, Composite) are missing in the Macromedia FreeHand 5.0 Print dialog box.

SOLUTIONS

Print using the Microsoft Windows PostScript printer driver.

OR: Use Macromedia FreeHand 5.0b or later.

ADDITIONAL INFORMATION

Macromedia FreeHand 5.0 displays all options in the Print dialog box when you print using the Microsoft PostScript printer driver. Macromedia FreeHand 5.0b displays all options in the Print dialog box when you print using either the AdobePS 4.1 or the Microsoft printer driver.

M A C O S

Characters Appear Clipped in PDFs from PageMaker and QuarkXPress

ISSUE

Text characters formatted with a TrueType font appear clipped or do not display in a Portable Document Format (PDF) file. The PDF file was distilled from a PostScript file created by an application that generates its own PostScript code (e.g., Adobe PageMaker, QuarkXpress) using the Adobe PSprinter 8.2.1 or earlier printer driver.

SOLUTIONS

Print the PostScript file to disk using the PSprinter 8.3 or later printer driver.

OR: Print the PostScript file to disk using the Apple LaserWriter 8.0 or later printer driver.

OR: Use PostScript fonts instead of TrueType fonts.

OR: Print the PostScript file to disk using an application that does not generate its own PostScript code (e.g., Microsoft Word, WordPerfect, ClarisWorks).

ADDITIONAL INFORMATION

The Adobe PSprinter 8.2.1 or earlier printer driver returns a random value for TrueType font bounding boxes when converting TrueType fonts to PostScript. When you print a PostScript file to disk from an application that generates its own PostScript code, the driver provides the application with incorrect font bounding box values. Because Acrobat Distiller requires font bounding box information when distilling PostScript files, it cannot generate PDF characters correctly, causing them to appear clipped or not to display.

Other printer drivers (e.g., PSprinter 8.3 or later, LaserWriter 8.0 or later) return accurate values for TrueType font bounding boxes, enabling the converted characters to be distilled correctly by Distiller. Printing from an application that does not generate its own PostScript code enables PSprinter 8.2.1 or earlier to generate the PostScript code itself, preventing it from returning random values for TrueType font bounding boxes.

Application Errors

WINDOWS

Error “PS_ENUM.DLL version is incompatible with AdobePS” When Printing or Opening Application

ISSUE

After launching an application (e.g., Adobe PageMaker, WordPad), choosing File > Print, or selecting a printer, the error “PS_ENUM.DLL version is incompatible with AdobePS version. Exit Windows and re-install the printer.” appears. Both Adobe Illustrator 4.x and the AdobePS PostScript Printer Driver 3.0.1 are installed.

SOLUTION

Remove then reinstall the AdobePS PostScript Printer Driver 3.0.1.

ADDITIONAL INFORMATION

Because the AdobePS PostScript Printer Driver 3.0.1 requires both the PS_ENUM.DLL file (modified 5/5/95) and RUN_ENUM.EXE file (modified 5/5/95) to print, the AdobePS PostScript Printer Driver 3.0.1 returns the error “PS_ENUM.DLL version is incompatible with AdobePS version. Exit Windows and re-install the printer.” after you launch an application, choose the Print command, or select a printer when a different version of the PS_ENUM.DLL file or RUN_ENUM.EXE file is installed.

The AdobePS PostScript Printer Driver 3.0.1 installs both the PS_ENUM.DLL file (modified 5/5/95) and RUN_ENUM.EXE file (modified 5/5/95), overwriting existing PS_ENUM.DLL and RUN_ENUM.EXE files.

When installing Illustrator 4.x after installing the AdobePS PostScript Printer Driver 3.0.1, clicking Yes in Illustrator’s message that asks whether you want to overwrite the existing C:\WINDOWS\SYSTEM\PS_ENUM.DLL or C:\WINDOWS\SYSTEM\RUN_ENUM.EXE file instructs Illustrator to replace the existing PS_ENUM.DLL or RUN_ENUM.EXE file with the PS_ENUM.DLL or RUN_ENUM.EXE file included with Illustrator 4.x.

Alert “...may not be compatible with watermark or page layout” Printing with AdobePS 3.0.1

ISSUE

When printing a document using the AdobePS 3.0.1 printer driver’s watermark or page layout (n-up) feature, the following alert appears: “This application may or may not be compatible with the watermark [or page layout (N-up)] feature you selected in Printer Setup. You may cancel the job or try to print it.”

SOLUTION

Print the document from an application that supports AdobePS 3.0.1’s watermark or page layout feature (e.g., Microsoft Word).

ADDITIONAL INFORMATION

When you print a document from an application that does not support the watermark or page layout feature, the AdobePS 3.0.1 printer driver displays the alert “This application may or may not be compatible with the watermark [or page layout (N-up)] feature you selected in Printer Setup. You may cancel the job or try to print it.”

Error “Not enough memory available for this task” Changing Settings in AdobePS

ISSUE

When you change settings (e.g., paper orientation) in the AdobePS PostScript printer driver 3.0.1 and earlier Setup dialog box, the driver returns the error “Not enough memory available for this task. Quit one or more applications to increase available memory, and then try again.” The driver is connected to a printer port whose reference in the [Ports] section of the Win.ini file does not have a colon following it (e.g., LPT1.DOS)

SOLUTION

Add a colon to the printer port reference in the [Ports] section of the Win.ini file (e.g., LPT1.DOS:);

1. Open the Win.ini file in a text-editor that can save in text-only format (e.g., Windows Write, Notepad).
2. In the [Ports] section, add a colon to the appropriate printer port reference.
3. Save the Win.ini file in text-only format.

ADDITIONAL INFORMATION

When AdobePS is unable to locate a colon following a printer port reference in the [Ports] section of the Win.ini file, it returns the error “Not enough memory available for this task. Quit one or more applications to increase available memory, and then try again.” Adding a colon enables you to set up the driver without error.

MAC OS

Error “Printer could not be opened” When Using Downloader 5.0.1 or Earlier

ISSUE

The error “Printer could not be opened.” appears when downloading a font using Adobe Downloader 5.0.1 or earlier in System 7.x.

SOLUTIONS

Use Downloader 5.0.4 or later.

OR: When using Downloader 5.0.1, move the printer driver (e.g., Apple LaserWriter, Adobe PSPrinter) from the Extensions folder in the System Folder into the System Folder, then download the fonts. After downloading the fonts, move the printer driver back into the Extensions folder.

ADDITIONAL INFORMATION

Downloader 5.0.1 and earlier return the error “Printer could not be opened.” while downloading a font when the printer driver is installed in the Extensions folder.

Downloader 5.0.1 and earlier searches for printer drivers in the System Folder when downloading fonts, and cannot locate printer drivers installed in the Extensions folder. Downloader 5.0.1 and earlier are designed to run in System 6.x. In System 6.x, printer drivers are installed in the System Folder. In System 7.0 and later, printer drivers are installed in the Extensions folder in the System Folder.

Downloader 5.0.4 is designed to run in System 7.0 and later, and can locate printer drivers installed in the Extensions folder.

PostScript Error Downloading PostScript Level 1 File to PostScript Level 1 Printer

ISSUE

When you download a PostScript file saved as Level 1 Compatible to a PostScript Level 1 printer, a PostScript error occurs (e.g., “syntaxerror; OffendingCommand: nostringval”). The printer driver you used to print the PostScript file to disk is set up with a PostScript Printer Description (PPD) file for a PostScript Level 2 printer (e.g., Apple LaserWriter Pro 810, Apple LaserWriter Pro 810f).

SOLUTIONS

Download the file to a PostScript Level 2 printer.

OR: Set up the printer driver with a different PostScript Level 2 PPD file (e.g., HP LaserJet 4M) in the Chooser.

OR: Set up the printer driver with a Level 1 PPD file or generic PPD file (i.e., click Use Generic) in the Chooser.

ADDITIONAL INFORMATION

When you print a PostScript file to disk using a printer driver set up with a PostScript Level 2 PPD file, you can select the Level 1 Compatible option or the Level 2 Only option in the Format dialog box, which appears after you click Save in the Print dialog box. When you select the Level 1 Compatible option, some PostScript Level 2 PPD files (e.g., Apple LaserWriter Pro 810, Apple LaserWriter Pro 810f) cause the printer driver to generate PostScript Level 2 code, instead of PostScript Level 1 code as expected. Because a PostScript Level 1 printer cannot interpret the Level 2 code, a PostScript error occurs when you download the file to a PostScript Level 1 printer.

Using a different PostScript Level 2 PPD file (e.g., HP LaserJet 4M), a Level 1 PPD file, or a generic PPD file enables the printer driver to write the PostScript file with Level 1 code only, but may limit your printing options (e.g., paper size, feed options).

To determine the PostScript Level of a PPD file:

1. Open the PPD file in a text editor (e.g., SimpleText, Microsoft Word).
2. Locate the “*Language Level:” line, which indicates the PostScript level of the PPD file. For example:
*LanguageLevel: “1”

System Errors

M A C O S

System Error (e.g., Freeze) After Clicking Setup for Birmy PowerRip in PSPrinter

ISSUE

After you click Setup in the Chooser to set up a Birmy PowerRIP 3.1f35 or earlier raster image processor using the Adobe PostScript printer driver 8.3 (PSPrinter), a system error (e.g., freeze) occurs.

SOLUTIONS

Use the Birmy PowerRIP 3.1f36 or later raster image processor.

OR: Use another printer driver (e.g., PSPrinter 8.2.x or earlier, Apple LaserWriter 8.x).

ADDITIONAL INFORMATION

Because PSPrinter 8.3 is incompatible with the Birmy PowerRIP 3.1f35 and earlier

raster image processor, the system returns an error (e.g., freezes) after you click Setup in the Chooser to set up the PowerRIP raster image processor using PSPrinter 8.3. Using the Birmy PowerRIP 3.1f36 or later raster image processor or another printer driver enables you to set up the PowerRIP printer in the printer driver without causing the system to return an error.

The PowerRIP for the Macintosh and Windows is a software raster image processor that uses Adobe PostScript Level 2. When the PowerRIP application is running, the Chooser lists the PowerRIP as an available printer after you select a PostScript printer driver.

Printing Problems

WINDOWS

TrueType Font Character Strokes Print with White Spaces with AdobePS 4.1

ISSUE

When you print text formatted with a TrueType font using the Adobe PostScript Printer Driver (AdobePS) 4.1 PostScript printer driver, characters print with gaps (i.e., white spaces) at the intersection of one or more character strokes. For example, the number 8 prints with a white spot or line at the point where the upper and lower circles of the character should meet. Text formatted with a PostScript font prints as expected.

SOLUTION

Format the text with a PostScript font.

ADDITIONAL INFORMATION

When PostScript character strokes overlap, they create a knock-out effect, causing a white space to appear where they overlap. Because of this knockout effect, PostScript fonts do not contain overlapping character strokes and print as expected. However, TrueType fonts contain overlapping character strokes. The AdobePS 4.1 PostScript printer driver converts TrueType font information to PostScript information, causing the TrueType font's overlapping character strokes to knockout when printed.

MAC OS

Bold Text Prints as Random Characters Using PSPrinter 8.0 or LaserWriter 8.0

ISSUE

Text formatted with a PostScript font and a bold type style prints as random characters using the Adobe PSPrinter 8.0 or Apple LaserWriter 8.0 printer driver. Text formatted in the same font but without the bold style prints as expected.

SOLUTIONS

Install the PostScript outline (printer) font for the bold type style (e.g., TrajaBol).

OR: Do not apply the bold type style to the text.

OR: Print the text using the PSPrinter 8.1.1 or later or LaserWriter 8.1.1 or later printer driver.

ADDITIONAL INFORMATION

When you apply a bold type style to text formatted with a PostScript font, but the outline font for the bold type style (e.g., TrajaBol) is not installed, the font should print in the

roman typeface (e.g., Trajan Regular). The PSPrinter 8.0 and LaserWriter 8.0 printer drivers, however, print random characters instead of the roman typeface.

The PSPrinter 8.1.1 or later and LaserWriter 8.1.1 or later printer drivers print the font in the roman style when the outline font for the bold style is not installed.

Cannot Print to LaserWriter Select 310 Using PSPrinter or LaserWriter Printer Driver

ISSUE

When you select the PSPrinter, LaserWriter 8.x, or LaserWriter printer driver in the Chooser, the LaserWriter Select 310 does not display in the Select a PostScript Printer list.

SOLUTION

Select the LW Select 310 printer driver in the Chooser.

ADDITIONAL INFORMATION

The LaserWriter Select 310 uses a serial port and requires a modified LaserWriter 7.x printer driver for serial communication. All other PostScript printers use an AppleTalk port, and can be targeted in the Chooser using the PSPrinter, LaserWriter 8.x, or LaserWriter printer driver, which are AppleTalk printer drivers.

Because the Apple LaserWriter Select 310 uses a modified version of the LaserWriter 7.x printer driver, applications that require the PSPrinter 8.x or LaserWriter 8.x printer driver (e.g., PageMaker 5.0x or later) may not print as expected to the LW Select 310.

Text Formatted in Font with Long Name Doesn't Print

ISSUE

When printing using the Adobe PSPrinter 8.0x and Apple LaserWriter 8.0 printer driver, text prints as a blank area or no output is received. The text is formatted with a font whose name contains 32 or more characters (e.g., Helvetica Condensed Black Oblique, Futura Condensed Extra Bold Oblique, ITC Garamond Condensed Ultra Italic).

SOLUTIONS

Print using the Adobe PSPrinter 8.1 or later printer driver.

OR: Print using the Apple LaserWriter 8.1 or later printer driver.

ADDITIONAL INFORMATION

The PSPrinter 8.1 or later printer driver, and the LaserWriter 8.1 or later printer driver, support printing fonts whose names contain 32 or more characters. The PSPrinter 8.0x and the LaserWriter 8.0 printer drivers limit the length of font names they can print, which causes missing text or no output when printing fonts whose names contain 32 or more characters (e.g., Helvetica Condensed Black Oblique,

Futura Condensed Extra Bold Oblique, ITC Garamond Condensed Ultra Italic).

Installation Issues

WINDOWS

No Printer Icon Appears in Printers Folder After Installing PSPrinter 3.0.1 in Windows 95

ISSUE

After you install the AdobePS 3.0.1 PostScript printer driver in Windows 95, an icon for the selected printer does not appear in the Printers folder.

SOLUTIONS

Restart Windows 95.

OR: Install AdobePS 4.1 or later, or the Microsoft PostScript printer driver 4.0 or later.

ADDITIONAL INFORMATION

Because the AdobePS 3.0.1 printer driver is not Windows 95 logo-compliant, it does not update the Windows 95 Registry during installation so that an icon for the selected printer appears in the Printers folder. Instead, it adds entries to the WIN.INI file. Windows 95 reads the WIN.INI file when it restarts and incorporates the entries into the Registry, creating an icon for the installed printer in the Printers folder.

When you install a Windows 95 logo-compliant printer driver (e.g., AdobePS 4.1 or later), it updates the Windows 95 Registry, causing an icon for the selected printer to appear in the Printers folder.

The AdobePS PostScript 3.01 printer driver is a 16-bit application specifically designed for 16-bit versions of Microsoft Windows (e.g., Windows 3.1, Windows for Workgroups). AdobePS 3.0.1 is compatible with Microsoft Windows 95, a 32-bit operating system, but is not Windows 95 logo-compliant. Windows 95 logo-compliant programs meet the required Windows 95 Logo criteria, which include support of system level features (e.g., long filenames, 32-bit addressing, new user interface shell) and additional functionality (e.g., OLE 2.0).

Error "Attempt to install an older version" When Installing AdobePS 4.1

ISSUE

When you install a printer using the Adobe PostScript printer driver (AdobePS) 4.1 setup utility from a CD-ROM, the setup utility returns the error, "Error: Attempt to install an older version. Setup has detected that you are trying to install one or more files that are older than what you

already have installed on your system. This operation is not permitted."

SYMPTOM

AdobePS 4.1.1 is installed.

SOLUTION

Rename the Adobeps4.drv file in the Windows\System directory, then reinstall AdobePS.

OR: Install a printer using the AdobePS 4.1.1 setup utility.

ADDITIONAL INFORMATION

After you install AdobePS 4.x, you can run the AdobePS setup utility from your hard drive (if you installed it there) or from a CD-ROM. When you run the setup utility from the hard drive, it automatically uses the installed version of AdobePS (i.e., the installed version of the Adobeps.drv file) to install a printer. When you install AdobePS 4.1.1 and then install a printer using the AdobePS 4.1 setup utility from a CD-ROM, the setup utility returns the error, "Error: Attempt to install an older version," because it cannot replace AdobePS 4.1.1's newer Adobeps.drv file with AdobePS 4.1's older Adobeps.drv file. Renaming the previously installed Adobeps4.drv file (i.e., the one installed for AdobePS 4.1.1) enables the setup utility to install AdobePS 4.1.

AdobePS 4.1 is included on the Adobe Type Manager (ATM) Deluxe 4.0 CD-ROM, while AdobePS 4.1.1 is included on the PageMaker 6.5 CD-ROM. The Adobeps4.drv file used by AdobePS 4.1.1 has a date of 05/24/96, while the Adobeps4.drv file used by AdobePS 4.1 has a date of 03/01/96. You can check the printer driver version in Windows 95 in an installed printer's Properties dialog box by clicking the Paper tab and then clicking About in the Properties dialog box.

Error "Invalid printer name" When Installing Printer for AdobePS 4.x

ISSUE

When you install a printer with Adobe PostScript printer driver (AdobePS) 4.x, the AdobePS Setup Utility returns the error, "Invalid printer name [name]." The printer is connected via a Novell Netware 4.x network using Netware Directory Services (NDS).

SOLUTIONS

Install the printer driver as a local printer using the AdobePS Setup Utility, then set up the printer as a network printer:

1. Using the AdobePS 4 Setup Utility, install the printer as a local printer. For instructions, see document 370411.
2. Choose Start > Settings > Printers.
3. In the Printers Control Panel, right-click the newly installed printer, then select Properties from the pop-up menu.
4. In the Properties dialog box, click the Details tab, then click Add Port.

5. In the Add Port dialog box, click Browse. Navigate to the network printer, select it, then click OK. Click OK again to return to the Properties dialog box.
 6. Click OK to close the Properties dialog box.
- or: Configure the path to a network printer so its pathname does not contain a period. Consult your network administrator or the Netware documentation for assistance.
- or: Disable NDS. Contact your network administrator or the Netware documentation for assistance.

ADDITIONAL INFORMATION

By default, NDS creates pathnames with periods (e.g., \\Press-1.P3-Vari2.courier) for networked printers. Because AdobePS does not support pathnames with periods, the AdobePS Setup Utility will return an error when you add a network printer whose pathname contains a period. Disabling NDS, creating pathnames without periods, or setting up the printer as a local printer before setting it up as a network printer enables you to add a printer without error.

Installing the AdobePS 2.1.2 Driver from the Type On Call 4.0 CD-ROM

To install the Adobe PostScript printer driver 2.1.2 (AdobePS) included on the Adobe Type On Call 4.0 CD-ROM in Windows 3.1x:

1. Open the Printers Control Panel, then click Add.
2. Select the Install Unlisted or Updated Printer option from the List of Printers, then click Install.
3. In the Install dialog box, type "X:\Free\PC\Adobedrv\Install," where X is your CD-ROM drive, then click OK. The Add Unlisted or Updated Printer dialog box appears.
or: Click Browse, select your CD-ROM drive from the Drives pop-up menu, select the Free\PC\Adobedrv\Install directory from the Directories list, then click OK. Click OK again in the Install dialog box. The Add Unlisted or Updated Printer dialog box appears.
4. In the Add Unlisted or Updated Printer dialog box, select the printer you want to install, click OK, then click OK again.
5. Close the Printers Control Panel.

Password Requested When Installing AdobePS 4.1 with Copstalk Installed

ISSUE

When you use the AdobePS 4 Setup Utility to install the Adobe PostScript printer driver 4.1 (AdobePS) for a network printer connected via a Copstalk 1.2 network, a dialog box appears requesting a user name and password, and the installation fails.

SOLUTIONS

Upgrade to Copstalk 2.0 or later.

or: Install the printer driver as a local printer using the AdobePS 4 Setup Utility, then set up the printer as a network printer:

1. Using the AdobePS 4 Setup Utility, install the printer as a local printer. Select No when prompted to print a test page.
2. Choose Start > Settings > Printers.
3. In the Printers Control Panel, right-click the newly installed printer, then select Properties from the pop-up menu.
4. In the Properties dialog box, click the Details tab, then click Add Port.
5. In the Add Port dialog box, click Browse. Navigate to the network printer, select it, then click OK. Click OK again to return to the Properties dialog box.
6. Click OK to close the Properties dialog box.

ADDITIONAL INFORMATION

Because Copstalk 1.2 is not Windows 95 logo-compliant, it does not support all Windows 95 network features. The AdobePS 4 Setup Utility, which uses Windows 95 network features to add a network printer, is unable to install a printer on a Copstalk 1.2 network. You can use AdobePS with a network printer on a Copstalk 1.2 network by first installing the printer as a local printer, then setting up the printer driver for the Copstalk 1.2 network.

Copstalk 2.0 or later is Windows 95 logo-compliant and is compatible with the AdobePS 4 Setup Utility.

MAC OS

Adobe Printer Driver 8.x for Macintosh: Installation and Troubleshooting

This technical note covers how to install the Adobe Printer Driver for Macintosh (represented by the PSPrinter 8.x icon) and how to perform its troubleshooting procedures. The contents of this technical note are:

PSPRINTER 8.X VERSUS APPLE LASERWRITER 8.X

PSPrinter 8.x and LaserWriter 8.x are the same program. Apple Computer, Inc. and Adobe Systems, Incorporated wrote the program jointly, but use different distribution channels for it. Therefore, the only differences are in the representative icon and in the PPDs (PostScript Printer Description files) that are distributed with the product. Apple ships only Apple PPDs with LaserWriter 8.x and Adobe ships PPDs from all manufacturers that have granted Adobe permission to do so.

Aldus Corporation, Frame Technologies, and other software manufacturers have also decided to distribute the driver with their products. All companies distributing the product have agreed to support their own distribution. For example, if your copy of LaserWriter 8.x comes with PageMaker 5.0, then Aldus Corporation provides support. If you purchased PSPrinter directly from Adobe, then Adobe pro-

vides support. Support for specific features enabled by PPDs are provided by the printer manufacturers.

INSTALLATION INSTRUCTIONS

How to install Adobe Printer Driver:

1. Quit all running applications, then insert Disk 1 into the floppy disk drive. The Disk 1 window opens.
2. Double-click the Adobe PSPrinter Installer program icon. The installer dialog box appears.
3. Click Install and the installation process begins. *The installer program copies the Adobe Printer Driver and the Printer Descriptions folder (for PPD files) into the System Folder as follows:*
 - For a Macintosh running System 7.x software, the installer places these files in the Extensions folder inside the System Folder.
 - For a Macintosh running System 6.x software, the installer places these files in the System Folder, along with new versions of the Background, PrintMonitor, LaserWriter, and Laser-Prep utilities.

TROUBLESHOOTING

This section describes some problems you may face during and after installation, and how to solve them.

SPOOLING FILES TO A HARD DRIVE

One of the features of PSPrinter 8.x is speed. In order to print faster, PSPrinter 8.x spools the print job to the startup hard drive. This spooling process then allows the driver to convert the file to PostScript code, compress it for speed of transmission, and then send it to the printer. If there is not enough disk space to spool the file to the hard drive, then the job may fail, resulting in a Disk Full error. If a print job has failed because you do not have enough storage on your startup hard drive, clear space on the drive by removing files, then try your print job again. You may also wish to return to version 7.x of the LaserWriter driver.

FOREGROUND SPOOLING

To Another Local Hard Drive This section provides workarounds for inadequate space on your startup drive to allow PSPrinter to create spool files. If you cannot remove files to create additional space on your startup drive, try one of these workarounds or use LaserWriter version 7.1.2.

If you have an additional hard drive attached to your Macintosh, and are using System 7 or greater, you can force PSPrinter to spool the printer file to that drive. However, this works only in Foreground Printing mode.

You select Foreground or Background printing mode in the Chooser when you select the printer. Apple's PrintMonitor program controls Background Printing, which requires that spooled files be placed in the PrintMonitor Documents folder of the active System Folder. Therefore, with Background Printing on, you must spool to your startup disk's System Folder or to a System Folder on a remote Macintosh (see the next section). The PostScript printer driver controls spooling during Foreground Printing.

To control how your computer spools its print jobs:

1. Select the disk that you wish to use for spooling and create a new folder. PSPrinter 8.0 users must name this folder "PSPrinter Temp Folder," and LaserWriter 8.0 users must name it "LaserWriter Temp Folder." If you have version 8.1 or later of the driver, then name the folder "Printing Temp Folder."
2. Select the folder you just created and choose Make Alias from the File menu.
3. Copy the alias into your Extensions folder (located in your System Folder), and delete the string "alias" from the file name.
4. Start the Chooser, select the Adobe PostScript printer driver and click Background Printing Off.
5. Print as usual. The document prints in the foreground after spooling to the disk on which you created the new spooling folder.

BACKGROUND SPOOLING

To Another Macintosh on the Network If you have another Macintosh computer on the same network as your computer, you can use it for spooling documents. For this to work, both computers must have the same version of PSPrinter 8.x (or LaserWriter 8.x, or HPLaserJet 8.x), and you must be running System 7.0 or higher in order to share files between the two computer. In the following instructions, the Macintosh from which you are printing is the "local" computer and the Macintosh that you are using for spooling purposes is the "remote" computer.

1. On the remote computer, choose the Chooser from the Apple menu. Select the Adobe PostScript printer driver, then choose a destination printer. Background Printing should be on.
2. On the remote computer, double-click the startup disk and select the System Folder. Choose Sharing from the File menu. Turn on Sharing for the System Folder and all enclosed folders, and select "Everyone" for the "See all folders," "See files," and "Make changes" options.
3. On the remote computer, open the System Folder. Select the PrintMonitor Documents folder, then choose Make Alias from the File menu.
4. On the local computer, choose Chooser from the Apple menu. Select the Adobe PostScript printer driver, choose a destination printer, then turn on Background Printing. Close the Chooser.
5. On the local computer, open the Chooser again and select the AppleShare icon. Log onto the remote computer's System Folder as "guest." Copy the file, "PrintMonitor Documents alias" from the remote computer's System Folder into the local computer's System Folder.
6. Delete the local computer's folder called "Print Monitor Documents" and change the name of the file "PrintMonitor Documents alias" to "PrintMonitor Documents." (If you select the PrintMonitor Documents folder, then choose Get Info from the File menu, you will see that the original file of this alias resides in the remote computer's System Folder.)

7. On the remote computer, delete the file "PrintMonitor Documents alias." You no longer need this file.
8. Now you may print your files as usual from the local computer. Observe the spool dialog on the local computer. Immediately after you print from the local computer, a temporary spool file is created on the remote computer in the "PrintMonitor Documents" folder. The system on the remote computer will find the spooled documents and print them.

Important notes on this procedure:

- Any error messages you receive from PrintMonitor show up only on the remote computer.
- Some virus protection software flags this process as suspicious activity. You may get a message that you are attempting to bypass the Resource Manager. This is expected behavior for this workaround.
- The remote computer must have all fonts that the print jobs require because the local computer does not send fonts to it. If the required fonts are not available on the remote computer, font substitution may occur, and Courier will be substituted.

LARGER PRINT AREA DIMMED

Most PPDs, but not all, have two printable area dimensions included within the file. Those PPDs which do not have two dimensions included dim the Larger Print Area option, in which case the largest print area is the default. Choosing the Generic PPD will make the larger print area option available, although it is not necessary to have this option because the PPD automatically selects the largest print area.

ERRORS WHILE PRINTING CERTAIN FONTS

PSPrinter 8.0 does print the following fonts:

- Helvetica Condensed Black Oblique
- Futura Condensed Extra Bold Oblique
- ITC Garamond Condensed Ultra Italic

The problems associated with printing these fonts have been fixed in PSpriinter 8.1.1. You should upgrade to the 8.1.1 driver if you wish to print using these fonts.

PSPrinter 8.0 does not print any font that has been stylized through the Style menu if the specific outline font is not available. For example, if you choose Bold from the Style menu for text in the Futura type face, and the Futura Bold outline font is not installed, then the job will not print. PSpriinter 8.1.1. produces a bold version of the regular typeface even if you have not installed the bold version of that typeface on the system.

TYPE ALIGN PRINTING PROBLEMS

Type Align files print as Courier when printed with PSpriinter 8.x from within TypeAlign or when exported as PICT files or as Cut-and-Paste via the Clipboard. Files exported as EPS print but will not have a preview.

If you are experiencing problems printing from the Adobe Type Align program with printer driver 8.0, 8.1, or 8.1.1, try using Apple printer driver version 7.x. The 8.x series of the printer driver is incompatible with Adobe Type Align.

PROBLEMS WITH PPDs & OBTAINING PPDs

Problems concerning specific features in PPDs are handled by the original manufacturer. One example of a PPD issue would be the Larger Print Area being dimmed, as discussed earlier in this technical note.

Updated PPDs and PPDs not distributed with PSpriinter 8.x should be obtained from the printer manufacturer.

Error "Please insert the disk PSpriinter" When Installing PSpriinter 8.3.1

ISSUE

When you install the Adobe PostScript printer driver (PSPrinter) 8.3.1, the Installer returns the error "Please insert the disk PSpriinter" followed by the error "An error occurred while installing on the active startup disk [disk name]. Installation was not able to be completed, but your original software has been restored." Renaming the disk does not enable the Installer to recognize it.

SYMPTOM

You downloaded PSpriinter from the Adobe World Wide Web site or the Adobe BBS and then copied it to a disk.

SOLUTION

Name the disk "PSPrinter" and make sure it contains only the following files and folder:

Name	Size	Kind
Chooser	54K	desk accessory
Installer	152K	application program

Printer Descriptions folder:

PSPrinter	708K	Chooser extension
PSPrinter Instal	168K	Installer document
PSPrinter ReadMe	13K	Simple text document

Additional Information When you download the Psp831-.sit file and decompress it, it creates the following files and folder:

- 8.3.1 User Guide.pdf
- PSpriinter folder
- ReadMe First

If you copy PSpriinter onto a disk to install it, you must copy the contents of the PSpriinter folder only, then name the disk "PSPrinter." If the disk is not named "PSPrinter" or contains unexpected contents (e.g., the PSpriinter folder instead of only the contents of that folder), the PSpriinter Installer returns the error "Please insert the disk PSpriinter." *The ReadMe First file includes the following installation instructions:*

"PSPrinter is systems software and, as such, cannot be installed to the same disk on which it resides. Copy the contents of the PSpriinter folder onto a diskette. When creating the diskette, please ensure that the name on the disk appears exactly as it does on the decompressed folder, paying special attention to capitalization."