

LaserJet 4

Network Notes
for the HP LaserJet 4
Printer

HP Computer Museum
www.hpmuseum.net

For research and education purposes only.

Network Notes for the HP LaserJet 4 Printer



HP Part No. C2001-90943
Printed in USA

First Edition - October 1992

NOTICE

Hewlett-Packard MAKES NO WARRANTY OF ANY KIND WITH REGARD TO THIS MATERIAL, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. Hewlett-Packard shall not be liable for errors contained herein or for incidental or consequential damages in connection with the furnishing, performance, or use of this material. This product is based in whole or in part on technology developed by Novell, Inc.

Hewlett-Packard assumes no responsibility for the use or reliability of its software on equipment that is not furnished by Hewlett-Packard.

NOVELL, INC., MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE CONTENTS OR USE OF THIS MANUAL, AND SPECIFICALLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

MICROSOFT CORP. MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE CONTENTS OR USE OF THIS MANUAL, AND SPECIFICALLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE. Further, Microsoft Corp. makes no representations or warranties with respect to any Microsoft Corp. Server software, and specifically disclaims any express or implied warranties of merchantability or fitness for any particular purpose. Further, Microsoft Corp. reserves the right to make changes to any and all parts of Microsoft Corp. Server software, at any time, without obligation to notify any person or entity of such changes.

3COM, INC., MAKES NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE CONTENTS OR USE OF THIS MANUAL, AND SPECIFICALLY DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

This document contains proprietary information that is protected by copyright. All rights are reserved. No part of this document may be photocopied or reproduced without prior written consent of Hewlett-Packard.

Printing History

This manual was created using text formatting software on an HP Vectra Personal Computer. The body text is printed in *Century Schoolbook* fonts, and chapter and section heads are printed in *Helvetica* fonts. The camera-ready copy was printed on an HP LaserJet printer using Resolution Enhancement technology (RET) and reproduced using standard offset printing.

First Edition – November 1992

Trademark Credits

*3Com 3+ Open*TM and *3Com*TM are registered trademarks of 3Com Corporation.

*Helvetica*TM is a trademark of Linotype AG and/or its subsidiaries in the U.S. and other countries.

*IBM*TM, *IBM LAN Server*TM, *Operating System/2*TM, and *OS/2*TM are registered trademarks of International Business Machines Corporation.

Microsoft[®] and *MS-DOS*[®] are a U.S. registered trademark of Microsoft Corp.

*PostScript*TM is a trademark of Adobe Systems Incorporated which may be registered in certain jurisdictions.

UNIX is a registered trademark of UNIX System Laboratories Inc. in the U.S.A and other countries.

Conventions

The following conventions are used throughout this guide:

- *Italic* type is used for emphasis, to show the result of a previous action, or is a variable supplied by the user.
- **Bold** type indicates an item to be selected from a selection list or menu.
- Upper case COMPUTER type indicates what you should type on the computer keyboard.
- Lower case computer type indicates names in command strings that the user must supply.
- DISPLAY type indicates printer display messages.
- **Key** indicates a computer keyboard key or a printer control panel key.
- The cursive letter *l* is used in examples to distinguish the letter lower case letter “l” from the number “1” (one).

Note



Notes contain important information set off from the text.

Caution



Caution messages indicate procedures which, if not observed, could result in damage to equipment or loss of data.

Warning



Warning messages indicate that when a specific procedure or practice is not followed correctly, personal injury could occur.

Introduction

The HP LaserJet 4 is a fast and versatile printer. This manual, written for system supervisors and administrators, describes how to set up an HP LaserJet 4 on your network for PCL printing or for PCL and PostScript printing through a process called system language switching.

Note



You can set up PostScript printing only if you have purchased the PostScript printer language option for your printer.

Enhancing Performance

This section provides configuration recommendations which could increase the network performance of your HP LaserJet 4 printer.

HP JetDirect

The use of an optional HP JetDirect card (formerly Network Printer Interface card) allows higher performance configurations.

NetWare 386-Based Products

With NetWare 386, an HP JetDirect card in Queue Server Mode provides optimum printing performance.

NetWare 286-Based Products

If you are using NetWare 286, follow these recommendations to ensure optimum performance:

- The addition of an HP JetDirect card in Queue Server Mode allows the highest performance configuration.
- The print server VAP (value added process) must be installed on dedicated file servers only. Non-dedicated file servers run competing DOS and NetWare processes which adversely impact printer performance.
- A PC operating as a dedicated print server provides better performance than a print server running as a VAP. If you use full-page raster graphics or frequently download soft fonts, a dedicated print server provides better performance. (Refer to your network operating system documentation for more information.)

IBM LAN Server and Microsoft LAN Manager

Although OS/2 supports virtual memory, better performance may be obtained by increasing server RAM, especially if the SWAPPER.DAT file is large. This is dependent on the number of network printers and the type of printer device driver. Optimum performance for the maximum printer configuration (six printers on a server) may require 16 Mbytes of RAM.

3Com 3+Open

Avoid the use of a concurrent server.

Soft Fonts and Typeface User Suggestions



To optimize performance of your printing environment when using different fonts and typefaces, consider the following options:

- Powering off the printer, changing the printer from 600 dpi mode to 300 dpi mode or vice versa, changing the PAGEPROTECT setting, or performing a system language switch deletes all downloaded scalable typefaces, soft fonts, and macros. You must download them again to use them. You can eliminate the need to download fonts and scalable typefaces by using font cartridges.
- Encourage the use of the HP LaserJet 4 printer's extensive internal scalable typeface selections; PCL fonts are available in PCL mode, and PostScript fonts are available in PostScript mode.
- To conserve printer memory, download only those soft fonts and scalable typefaces needed.
- If you require several fonts, consider purchasing additional memory from your dealer.
- Some software applications automatically download fonts at the beginning of each print job. It may be possible to configure those applications to download only soft fonts that are not already resident in the printer. Refer to your software application documentation for more information.

How To Use This Guide

This guide contains information from Hewlett-Packard, IBM Corp., Microsoft Corporation, Novell, Inc., and 3Com Corporation. It is designed to help you set up the HP LaserJet 4 printer with Novell NetWare, IBM LAN Server, Microsoft LAN Manager, or 3Com 3+ Open network. It provides guidelines for setting up the printer in HP-UX and BSD-Based environments. It should be used in conjunction with your *HP LaserJet 4 Printer User's Manual*, *JetDirect Administrator's Guide*, and network documentation.

This guide, in conjunction with your HP LaserJet 4 printer documentation and network, or operating system, documentation, describes setting up the HP LaserJet 4 on the following networks:

- Novell NetWare networks (Chapter 1).
- IBM LAN Server or Microsoft LAN Manager networks (Chapter 2).
- 3Com 3+ Open (1.1f) networks (Chapter 3).
- Sun, SCO-UNIX, and HP-UX environments (Chapter 4).
- BSD-Based spooler environments (Chapter 4).

Note



If you use a network other than the ones listed here, you can still set up your HP LaserJet 4 to print on it. Refer to your network operating system documentation for instructions on setting up a printer.

Before You Begin

If you are not familiar with Novell NetWare, IBM LAN Server, Microsoft LAN Manager, 3Com 3+Open LAN Manager, or UNIX, spend some time familiarizing yourself with how your network works before continuing with this guide.

This guide assumes that you:

- are connecting your printer to a server on a Novell NetWare, IBM LAN Server, Microsoft LAN Manager, 3Com 3+Open LAN Manager, or UNIX network with a Serial or Parallel cable.
- Are the network supervisor or administrator for your network.
- Have used NetWare, OS/2, or 3Com utilities.
- Have the proper software and device drivers (see software requirements in the relevant chapters which follow).



Contents

HP JetDirect	vii
NetWare 386-Based Products	vii
NetWare 286-Based Products	vii
IBM LAN Server and Microsoft LAN Manager	vii
3Com 3+ Open	viii
Soft Fonts and Typeface User Suggestions	viii
1. Novell NetWare Networks	
Overview	1-1
Setting Up PCL-Only Printing	1-3
To Configure the Printer	1-3
To Configure the Network	1-4
Setting Up PostScript-Only Printing	1-7
To Configure the Printer	1-7
To Configure the Network	1-8
System Language Switching	1-11
Switching to the Appropriate Language	1-12
To Configure the Printer	1-13
To Configure the Network for Controlled Language Switching	1-14
Configuring the Network for Automatic Language Switching	1-18
Using the CAPTURE Command	1-21
Using the NPRINT Command	1-24

2. IBM LAN Server and Microsoft LAN Manager Networks

Overview	2-1
Setting Up PCL-Only Printing	2-3
To Configure the Printer	2-3
To Verify the PCL Queue on OS/2 Versions 1.2.1 and 1.3	2-4
To Verify the PCL Printer Object on OS/2 Version 2.0	2-6
To Print From a Workstation	2-7
Setting Up PostScript-Only Printing	2-8
To Configure the Printer	2-8
To Verify the PostScript Queue on OS/2 Version 1.2.1 and 1.3	2-9
To Verify the PostScript Print Object on OS/2 Version 2.0	2-11
To Print From a Workstation	2-12
System Language Switching	2-13
Switching to the Appropriate Language	2-14
To Configure the Printer	2-15
Configuring the Server for OS/2 Versions 1.2.1 and 1.3	2-16
To Verify the Drivers	2-16
To Create a PostScript Queue	2-17
To Verify the PCL Queue	2-18
Configuring the Server for OS/2 Version 2.0	2-19
To Verify the Drivers	2-19
To Verify the PCL Printer Object	2-20
To Create a PostScript Printer Object	2-21
Using Separator Pages	2-21
To Print From a Workstation	2-22

3. 3Com 3+ Open Network	
Overview	3-1
Setting Up PCL-Only Printing;	3-2
To Configure the Printer	3-2
To Assign a Print Queue	3-3
To Print From a Workstation	3-4
Setting Up PostScript-Only Printing	3-5
To Configure the Printer	3-5
To Assign a Print Queue	3-6
To Print From a Workstation	3-7
Setting Up System Language Switching	3-8
To Configure the Printer	3-9
To Create Separator Pages	3-10
To Assign Print Queues	3-11
To Print From a Workstation	3-12
4. UNIX Environments	
Overview	4-1
PCL-Only Printing on HP-UX Systems	4-1
To Configure the Printer	4-2
To Add the Printer to the LP Spooler	4-3
PostScript-Only Printing on HP-UX Systems	4-4
To Configure the Printer	4-5
To Add the Printer to the LP Spooler	4-5
System Language Switching on HP-UX Systems	4-6
Switching to the Appropriate Language	4-6
To Configure the Printer for Language Switching	4-7
Modifying the Interface Script	4-8
To Add the Printer to the LP Spooler	4-10
PCL-Only or PostScript-Only Printing on BSD-Based Systems	4-11
.	4-11
Example One	4-11
Example Two	4-12
Example Three	4-12

Setting Up System Language Switching on BSD-Based Systems	4-13
To Configure the Printer for Language Switching	4-14
Creating an Executable File to Perform Language Switching	4-15

A. Defining and Configuring a Print Device for Novell Netware

Overview	A-1
To Define a PCL Print Device	A-2
To Define Functions for the PCL Print Device	A-2
To Define the Re-Initialize Mode	A-4
To Define the SWITCH_TO_PCL Mode	A-4
To Save the Device Definitions	A-4
To Define a LaserJet PostScript Print Device	A-5
To Define Functions for the PostScript Print Device	A-5
To Define the Re-Initialize Mode	A-6
To Define the SWITCH_TO_PS Mode	A-7
To Save the Device Definitions	A-7
To Define an Automatic LaserJet PCL/PS Print Device	A-8
To Define Functions for the PCL/PS Print Device	A-8
To Define the Re-Initialize Mode	A-9
To Define the SWITCH_AUTOMATIC Mode	A-9
To Save the Device Definitions	A-10

B. Language Switching Options for Novell Netware

Overview	B-1
Configuring the Printer	B-2
Modifying the SHELL.CFG File	B-3
Defining Print Devices in PRINTDEF	B-4
Creating Print Job Configurations in PRINTCON	B-5

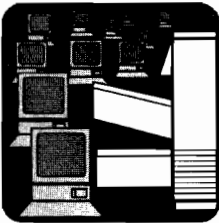
Examples of Language Switching Options . . .	B-6
Example One	B-7
Example Two	B-8
PostScript-Only Example	B-9
PCL-Only Example	B-9

Tables

1-1. PCL Printer Configuration Parameters . . .	1-5
1-2. PostScript Printer Configuration Parameters	1-9
1-3. PCL Printer Configuration Parameters . . .	1-15
1-4. PostScript Printer Configuration Parameters	1-16
1-5. PCL/PS Printer Configuration Parameters	1-19
1-6. CAPTURE Options	1-21
1-7. CAPTURE Options	1-23
1-8. PCL NPRINT Options	1-24
1-9. PostScript NPRINT Options	1-25
A-1. Name and Escape Sequences	A-3
A-2. Name and Escape Sequences	A-6
A-3. Name and Escape Sequences	A-8
A-4. Name and Escape Sequences	A-9
B-1. PERSONALITY Options	B-2
B-2. Language Switching Functions	B-4
B-3. Print Device Modes	B-4
B-4. Controlled Language Switching Example .	B-7
B-5. Automatic Language Switching Example .	B-8
B-6. PostScript-Only Configuration Example . .	B-9
B-7. PCL-Only Configuration Example	B-9

Novell NetWare Networks

Overview



This chapter describes printing with a Novell NetWare 286 network, version 2.12 or greater, and NetWare 386 network, version 3.1 or greater, on an HP LaserJet 4 printer. It explains:

- Setting up your printer for PCL-only printing. *This means your printer is used exclusively as a PCL printer.* (Go to “Setting Up PCL-Only Printing.”)
- Setting up your printer for PostScript-only printing. *This means your printer is used exclusively as a PostScript printer.* (Go to “Setting Up PostScript-Only Printing.”)
- Setting up your printer for system language switching between PCL and PostScript. *One job definition, and one CAPTURE or NPRINT command is used for PCL, while another job definition, and another CAPTURE or NPRINT command is used for PostScript.* (Go to “System Language Switching” and “Configuring the Network for Controlled Language Switching.”)
- Setting up your printer for automatic system language switching between PCL and PostScript. *This method uses a single job definition and one CAPTURE or NPRINT command for both PCL and PostScript.* (Go to “System Language Switching” and “Configuring the Network for Automatic Language Switching.”)

- Issuing CAPTURE or NPRINT commands according to the four printing configurations. (Go to “Using the CAPTURE Command,” or “Using the NPRINT Command.”)

Note



These procedures are written for system supervisors and network administrators. Some familiarity with using the Novell NetWare utilities PRINTDEF and PRINTCON is recommended.

Hewlett-Packard recommends using the HPLJ4.PDF as the print device during these procedures. Other print devices may be used, but you would not be able to utilize all of the printer features, such as language switching. You can also use Appendix A to create the print device.

To receive the HPLJ4.PDF print device use one of the following:

- HP’s Distribution Center. Call (303) 353-7650 from 7 AM to 6 PM (MT), Monday through Friday.
- HP FIRST. Call from your FAX machine’s telephone. You must have a touch tone group 3 FAX machine. Dial **(208) 344-4809** 24-hours a day.
- CompuServe’s HP forum.
- CompuServe’s Novell forum, NetWire.
- Novell’s Print Services Update disk.
- The JetDirect for Netware networks software disk.

Setting Up PCL-Only Printing

The printer can be configured to print only PCL jobs. The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- PCL jobs from multiple users.
- Banner pages, if desired.

To Configure the Printer

Verify that the default printer language is PCL. The AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Auto continue is set to ON so nonfatal network errors do not stop the printer from printing.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=PCL appears.
5. Press **Enter** to save your selection.
PERSONALITY=PCL * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= will appear.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and BB READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Configure the Network

Each user on your network can print to the printer using the print job configuration created with the following instructions. This section assumes that you have already set up the queue this printer services in PCONSOLE. (Refer to your network operating system documentation for more information on PCONSOLE.)

1. Log onto the network as supervisor at any user workstation.
2. Use PRINTDEF to import the print device **HPLJ4.PDF**.
 - a. Type PRINTDEF at the system prompt and press **Enter** to start PRINTDEF. *The “PrintDef Options” menu appears.*
 - b. Select **Print Devices**. *The “Print Device Options” menu appears.*
 - c. Choose **Import Print Device**. *The “Source Directory” screen appears.*
 - d. Enter the the source directory which contains the PDF files. For example SYS:PUBLIC. *The “Available .PDFs” screen appears.*
 - e. Select **HPLJ4.PDF** from the list. *The “Print Device Options” menu appears.*

Note



If you do not have the HPLJ4.PDF, refer to Appendix A, “Defining and Configuring a Print Device for Novell Netware,” to create a PCL device, or contact refer to the ordering information at the front of this chapter.

- f. To verify the HPLJ4.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4.
- g. Press **Esc** until the “Exit PrintDef” screen appears.
- h. Select **Yes**. *The “Exit Options” menu appears.*
- i. Select **Save Data Base, then Exit** to exit PRINTDEF.

3. Type PRINTCON at the system prompt and press **Enter** to start PRINTCON. The “Available Options” menu appears.
4. Select **Edit Print Job Configurations** and press **Enter**. “Print Job Configurations” appears.
5. Press **Insert**. The “Enter new name” box appears.
6. Enter a name for this print job configuration (for example, PCL_JOB) and press **Enter**. “Edit Print Job Configuration” appears.
7. Ensure that your Print Job Configuration is consistent with Table 1-1. If you need to change the value in a field, highlight that field using the cursor keys and type in the change.

Table 1-1.
PCL Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	Yes (or user’s option)
Suppress form feed	Yes
Enable timeout	No ¹
File server	File server serviced by printer
Print queue	Print queue serviced by printer
Device	HP LaserJet 4
Mode	SWITCH_TO_PCL

¹ If your application software cannot signal the printer that the job is finished, you must set “Enable timeout” to “Yes” and set a value for “Timeout count” (for example, 45 seconds).

Note



You must make the correct choice of File Server and Print Queue which service the printer you are currently configuring for your system.

8. Press **[Esc]**. The “Save Changes” box appears.
9. Select **YES** and press **[Enter]**. The “Print Job Configurations” menu appears.
10. Press **[Esc]**. “Available Options” appears.
11. Choose **Select Default Print Job Configuration** and press **[Enter]**.
12. Select the print job configuration you just created (for example, PCL_JOB) and press **[Enter]**. This selects the new print job configuration as the default print job configuration.
13. Press **[Esc]** repeatedly until the “Exit Printcon” box appears.
14. Select **YES** and press **[Enter]**. “Save Print Job Configurations” appears.
15. Select **YES** and press **[Enter]**. You exit PRINTCON and return to the system prompt.

Note



A newly defined print job configuration must be copied for those users printing to the printer. Use Novell’s “PRINTCON” to copy job configurations to other users’ workstations. Refer to Novell’s documentation for more information.

Setting Up PostScript-Only Printing

The printer can be configured to print only PostScript jobs, but it must have the PostScript language option correctly installed. The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- PostScript jobs from multiple users.

To Configure the Printer

Set the default printer language to PS (PostScript). The AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Auto continue is set to ON so nonfatal network errors do not stop the printer from printing.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=PS appears.
5. Press **Enter** to save your selection.
PERSONALITY=PS * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and BB READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Configure the Network

Each user on your network can use this print job configuration to print to the printer.

1. Log onto the network as supervisor at any user workstation.
2. Use PRINTDEF to import the PostScript print device **HPLJ4.PDF**.
 - a. Type PRINTDEF at the system prompt and press **Enter** to start PRINTDEF. *The “PrintDef Options” menu appears.*
 - b. Select **Print Devices**. *The “Print Device Options” menu appears.*
 - c. Choose **Import Print Devices**. *The “Source Directory” screen appears.*
 - d. Enter the the source directory which contains the PDF files. For example SYS:PUBLIC. *The “Available .PDFs” screen appears.*
 - e. Select **HPLJ4.PDF** from the list. *The “Print Device Options” menu appears.*

Note



If you do not have the HPLJ4.PDF, refer to Appendix A, “Defining and Configuring a Print Device for Novell Netware,” to create a PostScript device, or refer to the ordering information at the front of this chapter.

- f. To verify the HPLJ4.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4.
 - g. Press **Esc** until the “Exit PrintDef” screen appears.
 - h. Select **Yes**. *The “Exit Options” menu appears.*
 - i. Select **Save Data Base, then Exit** to exit PRINTDEF.
3. Type PRINTCON at the system prompt and press **Enter** to start PRINTCON. *The “Available Options” menu appears.*

4. Select **Edit Print Job Configurations** and press **Enter**. “Print Job Configurations” appears.
5. Press **Insert**. The “Enter New Name” box appears.
6. Enter a name for this PostScript print job configuration (for example, PS_JOB) and press **Enter**. “Edit Print Job Configuration” appears.
7. Ensure that your Print Job Configuration is consistent with Table 1-2. To change a field’s value, highlight that field using the cursor keys and type the change.

Table 1-2.
PostScript Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	No
Suppress form feed	Yes
Enable timeout	No ¹
File server	File server serviced by printer
Print queue	Print queue serviced by printer
Device	HP LaserJet 4
Mode	SWITCH_TO_PS

¹ If your application software cannot signal the printer that the job is finished, you must set “Enable timeout” to “Yes” and set a value for “Timeout count” (for example, 45 seconds).

Note



You must make the correct choice of File Server and Print Queue which service the printer you are currently configuring for your system.

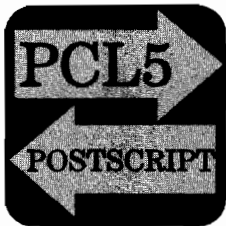
8. Press **Esc**. The “Save Changes” box appears.

9. Select **YES** and press **Enter**. The “Print Job Configuration” menu appears.
10. Press **Esc** repeatedly until the “Exit Printcon” box appears.
11. Select **YES** and press **Enter**. “Save Print Job Configurations” appears.
12. Select **YES** and press **Enter**. You exit PRINTCON and return to the system prompt.

Note

A newly defined print job configuration must be copied for those users printing to the printer. Use Novell’s “PRINTCON” to copy job configurations to other users’ workstations. Refer to Novell’s documentation for more information.

System Language Switching



The HP LaserJet 4 printer can be configured to switch between the PCL and PostScript printer languages. (Printer system language switching is also discussed in Chapter 2 of the *HP LaserJet 4 Printer User's Manual*.)

With system language switching, network users can print either a PCL or PostScript job. The HP LaserJet 4 printer automatically switches to the appropriate language with the proper configuration.

The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- Alternate PCL and PostScript jobs from multiple users.
- Banner pages with PCL jobs, if desired. (The implementation described in this section does not allow banner pages to be used with PostScript jobs. Refer to Appendix B for more information on printing options.)

Note



You can set up your HP LaserJet 4 printer for PostScript printing only if it has the PostScript language option correctly installed.



Switching to the Appropriate Language

To set up automatic system language switching on your network, you must complete the following steps:

- Configure the printer for system language switching.
- Configure the network, using Novell's PRINTDEF and PRINTCON utilities to define and configure a PCL/PostScript print job configuration.
- Print using Novell's CAPTURE or NPRINT command with the appropriate job configurations.

To set up controlled system language switching on your network, you must complete the following steps:

- Configure the printer for system language switching.
- Configure the network, using Novell's PRINTDEF and PRINTCON utilities to define and configure PCL and PostScript print job configurations.
- Specify PCL or PostScript printing using Novell's CAPTURE or NPRINT command.

Caution



All downloaded fonts, forms, and macros are deleted from printer memory when you switch languages. Since system language switching changes the way your printer operates in a multi-user environment, it should be implemented and controlled by the network printer administrator.

To Configure the Printer

Set the default printer language to AUTO for either automatic or controlled language switching. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Auto continue is set to ON so nonfatal network errors do not stop the printer from printing.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=AUTO appears.
5. Press **Enter** to save your selection.
PERSONALITY=AUTO * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Configure the Network for Controlled Language Switching

Each user on your network can use these print job configurations to print to the printer.

1. Log onto the network as supervisor at any user workstation.
2. Use PRINTDEF to import the PCL/PostScript print device **HPLJ4.PDF**.
 - a. Type PRINTDEF at the system prompt and press **Enter** to start PRINTDEF. *The “PrintDef Options” menu appears.*
 - b. Select **Print Devices**. *The “Print Device Options” menu appears.*
 - c. Choose **Import Print Devices**. *The “Source Directory” screen appears.*
 - d. Enter the the source directory which contains the PDF files. For example SYS:PUBLIC. *The “Available .PDFs” screen appears.*
 - e. Select **HPLJ4.PDF** from the list. *The “Print Device Options” menu appears.*

Note



If you do not have the HPLJ4.PDF, refer to Appendix A, “Defining and Configuring a Print Device for Novell Netware,” to create the PCL and PostScript devices, or refer to the ordering information at the front of this chapter.

- f. To verify the HPLJ4.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4.
 - g. Press **Esc** until the “Exit PrintDef” screen appears.
 - h. Select **Yes**. *The “Exit Options” menu appears.*
 - i. Select **Save Data Base**, then **Exit** to exit PRINTDEF.
3. Type PRINTCON at the system prompt and press **Enter** to start PRINTCON. *The “Available Options” menu appears.*

4. Select **Edit Print Job Configurations** and press **Enter**. “*Print Job Configurations*” appears.
5. -Press **Insert**. The “*Enter new name*” box appears.
6. Enter a name for this PCL print job configuration (for example, PCL_JOB) and press **Enter**. “*Edit Print Job Configuration*” appears.
7. *Ensure that your Print Job Configuration is consistent with Table 1-3.* If you need to change the value in a field, highlight that field using the cursor keys and type the change.

Table 1-3.
PCL Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	Yes (or user’s option)
Suppress form feed	Yes
Enable timeout	No ¹
File server	File server to be serviced by printer
Print queue	Print queue to be serviced by printer
Device	HP LaserJet 4
Mode	SWITCH_TO_PCL

¹ If your application software cannot signal the printer that the job is finished, you must set “Enable timeout” to “Yes” and set a value for “Timeout count” (for example, 45 seconds).

Note



You must select the correct File Server and Print Queue which service the printer you are currently configuring for your system.

8. Press **Esc**. The “Save Changes” box appears.
9. Select **YES** and press **Enter**. The “Print Job Configuration” menu appears.
10. Press **Insert**. The “Enter New Name” box appears.
11. Enter a name for this PostScript print job configuration (for example, PS_JOB) and press **Enter**. “Edit Print Job Configuration” appears.
12. Ensure that your Print Job Configuration is consistent with Table 1-4. To change a field’s value, highlight that field using the cursor keys and type the change.

Table 1-4.
PostScript Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	No
Suppress form feed	Yes
Enable timeout	No ¹
File server	File server serviced by printer
Print queue	Print queue serviced by printer
Device	HP LaserJet 4
Mode	SWITCH_TO_PS

¹ If your application software cannot signal the printer that the job is finished, you must set “Enable timeout” to “Yes” and set a value for “Timeout count” (for example, 45 seconds).

Note



You must make the correct choice of File Server and Print Queue which service the printer you are currently configuring for your system.

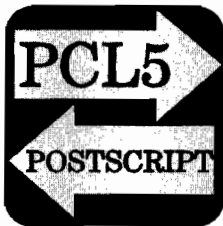
13. Press **Esc**. *The “Save Changes” box appears.*
14. Select **YES** and press **Enter**. *The “Print Job Configuration” menu appears.*
15. Press **Esc** repeatedly until the “Exit Printcon” box appears.
16. Select **YES** and press **Enter**. *“Save Print Job Configurations” appears.*
17. Select **YES** and press **Enter**. *You will exit PRINTCON and return to the system prompt.*

Note



A newly defined print job configuration must be copied for those users printing to the printer. Use Novell’s “PRINTCON” to copy job configurations to other users’ workstations. Refer to Novell’s documentation for more information.

Configuring the Network for Automatic Language Switching



Each user on your network can use this print job configuration to print to the printer. One queue is used for PCL printing and for PostScript printing. This section assumes that you have already set up the queue this printer services in PCONSOLE. (Refer to your network operating system documentation for more information on PCONSOLE.)

1. Log onto the network as supervisor at any user workstation.
2. Use PRINTDEF to import the PCL/PostScript print device **HPLJ4.PDF**.
 - a. Type PRINTDEF at the system prompt and press **Enter** to start PRINTDEF. *The “PrintDef Options” menu appears.*
 - b. Select **Print Devices**. *The “Print Device Options” menu appears.*
 - c. Choose **Import Print Devices**. *The “Source Directory” screen appears.*
 - d. Enter the the source directory which contains the PDF files. For example SYS:PUBLIC. *The “Available .PDFs” screen appears.*
 - e. Select **HPLJ4.PDF** from the list. *The “Print Device Options” menu appears.*

Note



If you do not have the HPLJ4.PDF, refer to Appendix A, “Defining and Configuring a Print Device for Novell Netware,” to create a PCL/PostScript device, or refer to the ordering information at the front of this chapter.

- f. To verify the HPLJ4.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4.
- g. Press **Esc** until the “Exit PrintDef” screen appears.
- h. Select **Yes**. *The “Exit Options” menu appears.*
- i. Select **Save Data Base, then Exit** to exit PRINTDEF.

3. Type PRINTCON at the system prompt and press **Enter** to start PRINTCON. The “Available Options” menu appears.
4. Select **Edit Print Job Configurations** and press **Enter**. “Print Job Configurations” appears.
5. Press **Insert**. The “Enter new name” box appears.
6. Enter a name for this PCL/PostScript print job configuration (for example, PCL_PS_JOB) and press **Enter**. “Edit Print Job Configuration” appears.
7. Ensure that your Print Job Configuration is consistent with Table 1-5. If you need to change the value in a field, highlight that field using the cursor keys and type the change.

Table 1-5.
PCL/PS Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	Yes (or user’s option)
Suppress form feed	Yes
Enable timeout	No ¹
File server	File server to be serviced by printer
Print queue	Print queue to be serviced by printer
Device	HP LaserJet 4
Mode	SWITCH_AUTOMATIC

¹ If your application software cannot signal the printer that the job is finished, you must set “Enable timeout” to “Yes” and set a value for “Timeout count” (for example, 45 seconds).

Note

You must select the correct File Server and Print Queue which service the printer you are currently configuring for your system.

8. Press **Esc**. *The “Save Changes” box appears.*
 9. Select **YES** and press **Enter**. *The “Print Job Configuration” menu appears.*
 10. Press **Esc** repeatedly until the “Exit Printcon” box appears.
 11. Select **YES** and press **Enter**. *“Save Print Job Configurations” appears.*
 12. Select **YES** and press **Enter**. *You will exit PRINTCON and return to the system prompt.*
-

Note

A newly defined print job configuration must be copied for those users printing to the printer. Use Novell’s “PRINTCON” to copy job configurations to other users’ workstations. Refer to Novell’s documentation for more information.

Using the CAPTURE Command

Network users who want to print to the printer issue a CAPTURE command. This allows them to use their software application to send a job to the printer.

To print PCL-only or PostScript-only jobs, issue the following CAPTURE command:

```
CAPTURE JOB=job_name capture_options
```

- *Job_name* is the name of the PCL or PostScript job configuration created with the procedures in the previous section (for example, PCL_JOB or PS_JOB).
- *CAPTURE_options* are items which can be selected from the CAPTURE Options in Table 1-6.

Table 1-6. CAPTURE Options

	Recommended	Use With Caution	Not Recommended
SHow	Job=jobconfiguration	TImeout=n	Tabs=n
NOTIfy	NAME=name	CReate=path	FormFeed
NoNOTIfy	NoBanner	Server=fileserv	
Autoendcap	Banner=bannename	Queue=queuename	
Form=form	NoFormFeed	NoAutoendcap	
Copies=n	Keep	Local=n	
NoTabs			

Note



The options in the “Not Recommended” column override default values set in the job configuration.

The options listed under “Use With Caution” can adversely effect your printing, but can enhance your capture capabilities. If the printer is generating partial prints or is not printing, verify your options.

For explanations and additional information about CAPTURE Options, refer to your Novell documentation.

Network users must establish two logical printers that would print to the printer when using controlled language switching. The following CAPTURE commands allow users to print PCL jobs to their LPT1 port and PostScript jobs to their LPT2 port. This allows them to use their software application to send a PCL or PostScript job to the printer.

You can encourage users to include these capture commands in their login script. You can also place the capture commands in a system login script.

For example:

```
CAPTURE L=1 JOB=pcl_job_name capture_options
```

```
CAPTURE L=2 JOB=ps_job_name capture_options
```

- *Pcl_job_name* is the name of the PCL job configuration created following the procedures in the previous section (for example, PCL_JOB).
- *Ps_job_name* is the name of the PostScript job configuration created with the procedures in the previous section (for example, PS_JOB).
- *CAPTURE_options* are items which can be selected from the CAPTURE Options, Table 1-7.)

Note



For automatic language switching, you only need to issue *one* CAPTURE command for *both* PCL and PostScript jobs.

For example:

```
CAPTURE L=1 JOB=pcl_ps_job_name capture_options
```

Use the CAPTURE options listed in Table 1-7.

Table 1-7. CAPTURE Options

Recommended		Use With Caution	Not Recommended
SHow	NoTabs	TImeout= n	Tabs= n
NOtIfy	NoBanner	CReate= path	Formfeed
NoNOtIfy	NoFormFeed	Server= fileserver	NAME= name
Autoendcap	Keep	Queue= queuename	Banner= bannername
Form= form	NoAutoendcap		
Copies= n	Local= n		

Note



All options listed override default values set in the job configuration.

The options listed under “Use With Caution” can adversely effect on your printing, but can enhance your capture capabilities. If the printer is generating partial printouts or is not printing, check your options.

For explanations and additional information about CAPTURE Options, refer to your Novell documentation.



Using the NPRINT Command

The NPRINT command allows the user to specify print options, and directly print a job from the command line. To print a file using the NPRINT command, issue the following command:

```
NPRINT file_name JOB=job_name nprint_options
```

- *File_name* is the file to be printed.
- *Job_name* is the name of the job configuration created with the procedures in previous sections (for example, PCL_JOB or PS_JOB).
- *Nprint_options* are items which can be selected from either the PCL NPRINT Options, Table 1-8, or the PostScript NPRINT Options, Table 1-9.

Table 1-8. PCL NPRINT Options

Recommended	Use With Caution	Not Recommended
NOTIfy	Server=fileserv	Tabs= n
NoNOTIfy	Queue= queuename	FormFeed
Form=form	Delete	
Copies= n	PrintServer= printserver	
NoTabs		
NoBanner		
NAME= name		
Banner= bannername		
NoFormFeed		

Table 1-9. PostScript NPRINT Options

Recommended	Use With Caution	Not Recommended
NOTify	Server=fileserver	Tabs=n
NoNOTify	Queue=queueName	Formfeed
Form=form	Delete	NAME=name
Copies=n	Printserver=printserver	Banner=bannerName
NoTabs		
NoBanner		
NoFormFeed		

Note



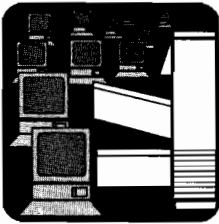
The options “Not Recommended” override default values set by the job definition.

The options listed under “Use With Caution” can adversely effect upon your printing, but can also enhance your capture capabilities. If the printer is generating partial outputs or no outputs, verify these options if used.

For explanations and additional information about NPRINT Options, refer to your Novell documentation.

IBM LAN Server and Microsoft LAN Manager Networks

Overview



This chapter describes printing on an IBM LAN Server version 1.3 network, or on a Microsoft LAN Manager version 2.0c network with an HP LaserJet 4 printer. This chapter explains setting up:

1. PCL-only printing. *This means your printer is used exclusively as a PCL printer.* (Go to the section titled "PCL-Only Printing.")
2. PostScript-only printing. *This means your printer is used exclusively as a PostScript printer.* (Go to the section titled "PostScript-Only Printing.")
3. System language switching between PCL and PostScript. (Go to the section titled "System Language Switching.")

Note



These procedures are written for network administrators. Familiarity with the use of IBM LAN Server or Microsoft LAN Manager utilities, OS/2, and PRINT MANAGER is recommended.

Hewlett-Packard recommends the LASERJET.HP OS/2 Presentation Manager driver (1.3.333 or greater) as the default driver during these procedures. Other drivers can be used, but you cannot utilize all of the printer features, such as language switching. To order the driver contact one of the following:

- HP's Distribution Center. Call (303) 353-7650 from 7 AM to 6 PM (MT), Monday through Friday.
- HP FIRST. Call from your FAX machine's telephone. You must have a touch tone group 3 FAX machine. Dial **(208) 344-4809** 24-hours a day.
- CompuServe's HP Forum.

Setting Up PCL-Only Printing

The HP LaserJet 4 printer can be configured to print only PCL jobs. The following sections provide instructions for producing:

- PCL jobs from multiple users.
- Banner pages, if desired.
- Automatic continuation when errors are encountered.

To Configure the Printer

Verify that the default printer language is PCL. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from printing.

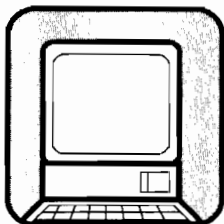
1. Press **(On Line)**, if necessary, to take the printer offline.
2. Press **(Menu)** repeatedly until JOB MENU appears.
3. Press **(Item)** repeatedly until PERSONALITY= appears.
4. Press **(+/-)** until PERSONALITY=PCL appears.
5. Press **(Enter)** to save your selection.
PERSONALITY=PCL * *should be displayed.*
6. Press **(Item)** repeatedly until JOB MENU appears.
7. Press **(Menu)** repeatedly until CONFIG MENU appears.
8. Press **(Item)**. AUTO CONT= appears.
9. Press **(+/-)** until AUTO CONT=ON appears.
10. Press **(Enter)** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **(On Line)** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Verify the PCL Queue on OS/2 Versions 1.2.1 and 1.3



Each user on your network must use the server queue created to print to the HP LaserJet 4 printer.

1. Log onto the network as administrator at the system server.
2. Enter the PRINT MANAGER utility by clicking on the Print Manager icon.
The "Print Manager" screen appears.
3. Choose the **Setup** menu.
4. Select the **Printer** item.
The "Printers" screen appears.
5. Select the appropriate printer name.

Note



If no printer is listed, see your OS/2 documentation for information on adding printers.

6. Choose the **Change** button at the bottom of the screen.
The "Change Printer" screen appears.
7. Verify that the default PCL printer driver is **LASERJET.HP**.

Note



If the LASERJET.HP driver does not appear, refer to your operating system documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the driver.)

8. Verify that the device is LPTx or COMx for a parallel or serial connected printer.
9. Choose the **Change** button at the bottom of the screen.
10. Select **OK** to exit the "Printer" screen.
11. Choose the **Setup** menu.
12. Select the **Queues** item.
The "Queues" screen appears.

13. Select the PCL queue name which was configured for the HP LaserJet 4 printer.

Note



If no queue is defined, see your OS/2 documentation for information on adding queues.

14. Choose the **Change** button at the bottom of the screen.
The “Change Queue” screen appears.
15. Make sure the proper printer name is selected.
16. Verify that the LASERJET.HP device driver is selected.
17. Choose the **Change** button at the bottom of the screen.
18. Select **OK** to exit the “Queues” screen.
19. Minimize PRINT MANAGER.
20. Continue with the section “To Print From a Workstation.”

Note



OS/2 users configured to use this print queue also must have the LASERJET.HP driver installed.

To Verify the PCL Printer Object on OS/2 Version 2.0

Each user on your network must use the server queue created to print to the HP LaserJet 4 printer.

1. Log onto the network as administrator at the system server.
2. Display the Printer Object's pop-up menu by placing the mouse pointer on the object and clicking button 2.

Note



If there is no Printer Object, refer to the OS/2 online documentation for information on creating a Printer Object.

3. Select the **Open** arrow button.
4. Select the **Settings** item.
The "HP LaserJet Settings" notebook appears.
5. Verify that the **Physical Name** is correct.
This field may also be referred to as **Queue Name**.
This field cannot be changed unless a new object is created with the correct name.
6. Select the **Printer Driver** tab.
The "Print Driver" page is displayed.
7. Verify that the default PCL printer driver is the *LASERJET.HP* driver for your printer model.

Note



If the LASERJET.HP driver does not appear, refer to the OS/2 online documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the driver.)

8. Select the **Output** tab on the "Printer Settings" notebook.
9. Verify that the device is LPTx or COMx for a parallel or serial connected printer.

10. Close the "Printer Settings" notebook.

Note



OS/2 users configured to use this print queue also must have the LASERJET.HP driver installed.

To Print From a Workstation

1. Issue the following NET SHARE command from the server to share the PCL queue:

```
NET SHARE queuename /PR
```

2. Users who want to establish this printer as their LPT1 printer must type from their workstations:

```
NET USE LPT1 \\servername\sharename
```

- *Servername* is the name given to the server when the network software was installed.
- *Sharename* is the name given to the shared PCL print queue.

The full screen interface may be used to share or use the queue.

Redirect the print job from the software application to the printer port defined in the NET USE command above. Refer to your software application documentation for more information.

Note



You can make the sharenames permanent so they are still valid when you reboot the server, and define access privileges to the shared resources. Refer to the network operating system documentation for more information.

Setting Up PostScript-Only Printing

To Configure the Printer

The printer can be configured to print only PostScript jobs, but it must have the PostScript language option correctly installed. The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- PostScript jobs from multiple users.

Set the default printer language to PS (PostScript). Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Auto continue is set to ON so nonfatal network errors do not stop the printer from printing.

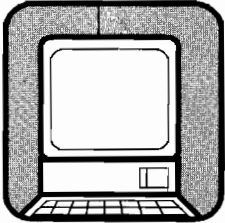
1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=PS appears.
5. Press **Enter** to save your selection.
PERSONALITY=PS * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Verify the PostScript Queue on OS/2 Version 1.2.1 and 1.3



Each user on your network must use the queue created to print to the HP LaserJet 4 printer.

1. Log onto the network as administrator at the system server.
2. Enter the PRINT MANAGER utility by clicking on the Print Manager icon.
The "Print Manager" screen appears.
3. Choose the **Setup** menu.
4. Select the **Printer** item.
The "Printers" screen appears.
5. Select the appropriate printer name.



Note



If no printer is listed, see your OS/2 documentation for information on adding printers.

6. Choose the **Change** button at the bottom of the screen.
The "Change Printer" screen appears.
7. Verify that the default PostScript printer driver is **PSCRIPT.HP**.

Note



If the PSCRIPT.HP driver does not appear, refer to your operating system documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the driver.)

8. Verify that the device is LPTx or COMx for a parallel or serial connected printer.
9. Choose the **Change** button at the bottom of the screen.
10. Select **OK** to exit the "Printer" screen.
11. Choose the **Setup** menu.
12. Select the **Queues** item.
The "Queues" screen appears.

13. Select the PostScript queue name which was configured for the printer.

Note



If no queue is defined, see your OS/2 documentation for information on adding queues.

14. Choose the **Change** button at the bottom of the screen.
The “Change Queue” screen appears.
15. Make sure the proper printer name is selected.
16. Verify that the LASERJET.HP device driver is selected.
17. Choose the **Change** button at the bottom of the screen.
18. Select **OK** to exit the “Queues” screen.
19. Minimize PRINT MANAGER.
20. Continue with the section, “To Print From a Workstation.”

Note



OS/2 users configured to use this print queue also must have the PSCRIPT.DRV driver installed.

To Verify the PostScript Print Object on OS/2 Version 2.0

Each user on your network must use the server queue created to print to the HP LaserJet 4 printer.

1. Log onto the network as administrator at the system server.
2. Display the Printer Object's pop-up menu by placing the mouse pointer on the object and clicking button 2.

Note



If there is no Printer Object, refer to the OS/2 online documentation for information on creating a Printer Object.

3. Select the **Open** arrow button.
4. Select the **Settings** item.
The "HP LaserJet Settings" notebook appears.
5. Verify that the **Physical Name** is correct.
This field may also be referred to as **Queue Name**.
This field cannot be changed unless a new object is created with the correct name.
6. Select the **Print Driver** tab.
The "Print Driver" page is displayed.
7. Verify that the default PostScript printer driver is the *PSCRIPT.HP* driver for your printer model.

Note



If the PSCRIPT.HP driver does not appear, refer to the OS/2 online documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the driver.)

8. Select the **Output** tab on the "Printer Settings" notebook.
9. Verify that the device is LPTx or COMx for a parallel or serial connected printer.

10. Close the "Printer Settings" notebook.

Note



OS/2 users configured to use this print queue also must have the PSCRIPT.HP driver installed.

To Print From a Workstation

1. Issue the following NET SHARE command from the server to share the PostScript queue:

```
NET SHARE queuename /PR
```

2. Users who want to establish this printer as their LPT1 printer must type from their workstations:

```
NET USE LPT1 \\servername\sharename
```

- *Servername* is the name given to the server when the network software was installed.
- *Sharename* is the name given to the shared PostScript print queue.

The full screen interface may be used to share or use the queue.

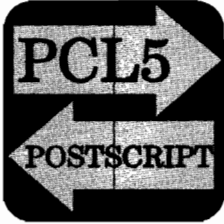
Redirect the print job from the software application to the printer port defined in the NET USE command above. Refer to your software application documentation for more information.

Note



You can make the sharenames permanent so they are still valid when you reboot the server. Refer to the network operating system documentation for more information.

System Language Switching



Note



The HP LaserJet 4 printer can be configured to switch between the PCL and PostScript printing languages. (Printer system language switching is also discussed in Chapter 2 of the *HP LaserJet 4 Printer User's Manual*.)

With system language switching, users on your network can print either a PCL or PostScript job, and the print server sends these print jobs to the same printer.

Follow these instructions to produce:

- Alternate PCL and PostScript jobs from multiple users.
- Automatic continuation when errors are encountered.

You can set up your HP LaserJet 4 printer for PostScript printing only if it has the PostScript language option correctly installed, and you have the PSCRIPT.HP driver.

Switching to the Appropriate Language

To set up system language switching on your network, you must complete the following procedures:

- Configure the printer for system language switching.
- Configure the server running OS/2 version 1.2.1 and 1.3, using OS/2 PRINT MANAGER utility to define and configure separate PCL and PostScript print queues.
- Configure separate Printer Objects for PCL and PostScript on the server running OS/2 version 2.0. Both of these objects will use the same port.
- Setting up printing for PCL or PostScript jobs from the workstation using the NET USE command.

Caution



All downloaded fonts, forms, and macros are deleted from printer memory when you switch languages. Since system language switching changes the way your printer operates in a multi-user environment, it should be implemented and controlled by the network printer administrator.

To Configure the Printer

Set the default printer language to AUTO. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from printing.

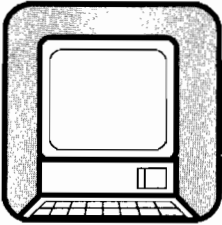
1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=AUTO appears.
5. Press **Enter** to save your selection.
PERSONALITY=AUTO * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

Configuring the Server for OS/2 Versions 1.2.1 and 1.3



Each user on your network must use the server queue created in the following procedures to send jobs to the printer. Specifying the sharename in the NET USE command enables use of the correct print driver for the print job.

To Verify the Drivers

1. Log onto the network as the administrator at the system server.
2. Enter the PRINT MANAGER utility.
The "Print Manager" screen appears.
3. Click on the **Setup** menu.
4. Select the **Printers** item
The "Printers" screen appears.
5. Select the printer name that was created during the printer installation.
6. Choose the **Change** item.
The "Change Printer" screen appears.
7. Two drivers, LASERJET.HP and PSCRIPT.HP, should appear in the list of printer drivers.

Note



If the LASERJET.HP driver or the PSCRIPT.HP PostScript driver does not appear, refer to your operating system documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the drivers.)

8. Select both LASERJET.HP and PSCRIPT.HP PostScript drivers.
9. Choose **Change** (if necessary).
10. Choose **OK** to leave the "Printers" screen.
11. Continue with the next section, "To Create a PostScript Queue."

To Create a PostScript Queue

1. Select the **Queues** item on the **Setup** menu.
The “Queues” screen appears.
2. Click the **Add** button at the bottom of the screen.
The “Add Queue” screen appears.
3. Enter the new queue name in the **Name** field.
4. Enter a comment in the **Description** field if you wish.
It may be helpful to comment on the primary users or function of this queue.
5. Select the PostScript default printer driver.
(Hewlett-Packard recommends *PSCRIPT.HP*.)
6. Choose the **Add** button at the bottom of the screen.
7. At the OS/2 command prompt, type:
`NET SHARE queueName /PR`
8. Continue to verify the PCL queue.



To Verify the PCL Queue

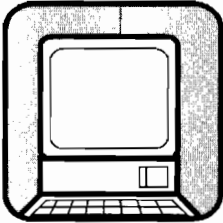
1. Select the **Queues** item on the **Setup** menu.
The “Queues” screen appears.
2. Select the PCL queue name which was configured for the printer.
3. Choose the **Change** button at the bottom of the screen.
The “Change Queue” screen appears.
4. Verify that the PCL default printer driver is *LASERJET.HP*.
5. Select the **Change** button at the bottom of the screen.
6. Choose **OK** at the bottom of the screen to exit the “Queues” screen.
7. Minimize PRINT MANAGER.
8. Continue with the section, “To Print From a Workstation.”

Note



OS/2 users configured to use these print queues also must have the LASERJET.HP and PSCRIPT.HP drivers installed.

Configuring the Server for OS/2 Version 2.0



Each user on your network must use the server queue created in the following procedures to send jobs to the printer. Specifying the sharename in the NET USE command enables the use of the correct print driver for the print job.

To Verify the Drivers

1. Log onto the network as the administrator at the system server.
2. Click the mouse button 2 on the PCL Printer Object.
3. Click on the **Open** arrow button.
4. Select the **Settings** item.
5. Select the **Printer Driver** notebook tab.
A list of drivers appears with LASERJET.HP and PSCRIPT.HP highlighted.
6. If LASERJET.HP and PSCRIPT.HP are not selected, select the drivers to be used.
7. Set the appropriate driver as the default for this Printer Object.

Note



If the LASERJET.HP driver or the PSCRIPT.HP PostScript driver does not appear, refer to your operating system documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the drivers.)

To Verify the PCL Printer Object

1. Log onto the network as administrator at the system server.
2. Display the Printer Object's pop-up menu by placing the mouse pointer on the object and clicking button 2.

Note



If there is no Printer Object, refer to the OS/2 online documentation for information on creating a Printer Object.

3. Select the **Open** arrow button.
4. Select the **Settings** item.
The "HP LaserJet Settings" notebook appears.
5. Verify that the **Physical Name** is correct.
This field may also be referred to as **Queue Name**.
This field cannot be changed unless a new object is created with the correct name.
6. Select the **Printer Driver** tab.
The "Print Driver" page is displayed.
7. Verify that the default PCL printer driver is *LASERJET.HP*.

Note



If the LASERJET.HP driver does not appear, refer to the OS/2 online documentation for information on driver installation. (Refer to "Overview" on page 2-1 for information on ordering the driver.)

8. Select the **Output** tab on the "Printer Settings" notebook.
9. Verify that the device is LPTx or COMx for a parallel or serial connected printer.
10. Close the "Printer Settings" notebook.
11. Continue to create the PostScript Printer Object.

To Create a PostScript Printer Object

1. Click on the Printer Object with the mouse button 2 to bring up the pop-up menu.
2. Select **Copy**.
3. Enter the new queue name.
4. Select the appropriate target folder (or desktop).
5. Click on **Copy**.
6. Select the PostScript default printer driver.
(Hewlett-Packard recommends *PSCRIPT.HP*.)
7. Continue to modify the new Printer Object as necessary.
8. Close the "Printer Settings" notebook.

Using Separator Pages

You can use separator pages between jobs. Separator pages are enabled in Print Manager. Refer to your OS/2 documentation for more information on separator pages.

To Print From a Workstation

1. Issue the following NET SHARE commands from the server to share the PCL and the PostScript queues:

```
NET SHARE queuename /PR
```

Repeat this NET SHARE command for each queue, if necessary.

2. Users must type from their workstations:

```
NET USE devicename \\servername\PCL_sharename
```

```
NET USE devicename \\servername\PS_sharename
```

- *Devicename* can be either LPT1, LPT2, or LPT3 for DOS, or up to LPT9 for OS/2, must not be in use, and must be different if you are using separate sharenames. It must not be the same as the local printer.
- *Servername* is the name given to the server when the network software was installed.
- *PCL_sharename* is the name given to the shared PCL print queue.
- *PS_sharename* is the name given to the shared PostScript print queue.

The full screen interface may be used to share or use the queue.

This allows users to use their software application to send either a PostScript job or a PCL job to the printer. Refer also to your application documentation for more information.

Note



DOS applications that do not support the printer's language switching feature can work properly if the job is sent to the appropriate PCL or PostScript queue or Printer Object.

3Com 3+Open Network

Overview

This chapter describes setting up the printer on a 3Com 3+Open network version 1.1f. It discusses:

- Setting up PCL-Only printing.
- Setting up system language switching between PCL and PostScript.

Note



To use the 3Com 3+Open print spooler as outlined in this document, *the Presentation Manager spooler must be disabled*. To disable the Presentation Manager spooler on the server, DO NOT select spooler from **Spooler Options** under **Setup** in the Presentation Manager Control Panel window. Then reboot the server.

Setting Up PCL-Only Printing;

The HP LaserJet 4 printer can be configured to print only PCL jobs. The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- PCL jobs from multiple users.

To Configure the Printer

Verify that the default printer language is PCL. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from printing.

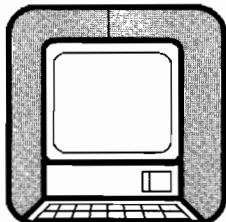
1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=PCL appears.
5. Press **Enter** to save your selection.
PERSONALITY=PCL * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Assign a Print Queue



To assign a print queue for the printer, use NET ADMIN, or complete the following steps. Enter the information exactly as shown from a screen on the OS/2 server.

1. Log onto the server as the network administrator.
2. Type:

```
NET SHARE sharename /PRINT
```

and press **Enter**.

- *Sharename* is the name given to the shared print queue.

If the print queue does not exist, a message appears asking if you want to create a new queue. Select **YES**.

3. Type:

```
NET PRINT sharename /PARMS:EJECT=AUTO /ROUTE:printer_port
```

and press **Enter**.

- *Printer_port* is the name of the printer port (LPT1, LPT2, etc.) to which the HP LaserJet printer is connected.

- *Sharename* is the name given to the shared print queue.

4. To make the shared queue permanent (meaning it still is shared after the server has been rebooted), type:

```
NET SAVE SRVSHARE.PRO /Y
```

and press **Enter**.

This completes the instructions for assigning and sharing a print queue for your printer.



To Print From a Workstation

Issue the following NET USE command from the individual user's workstation (users must have the correct permissions):

```
NET USE LPT1 \\server-name\sharename
```

- *Server-name* is the name of the server to which the HP LaserJet printer is connected.
- *Sharename* is the name given to the shared print queue.

Setting Up PostScript-Only Printing

To Configure the Printer

The HP LaserJet 4 printer can be configured to print only PostScript jobs. The following sections provide instructions for producing:

- Automatic continuation when errors are encountered.
- PostScript jobs from multiple users.

Verify that the default printer language is PCL. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from printing.

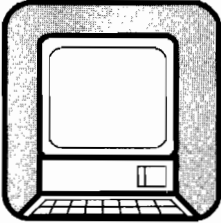
1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=POSTSCRIPT appears.
5. Press **Enter** to save your selection.
PERSONALITY=POSTSCRIPT * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Assign a Print Queue



To assign a print queue for the printer, use NET ADMIN, or complete the following steps. Enter the information exactly as shown from a screen on the OS/2 server.

1. Log onto the server as the network administrator.
2. Type:

```
NET SHARE sharename /PRINT
```

and press **Enter**.

- *Sharename* is the name given to the shared print queue.

If the print queue does not exist, a message appears asking if you want to create a new queue. Select **YES**.

3. Type:

```
NET PRINT sharename /PARMS:EJECT=AUTO /ROUTE:printer_port
```

and press **Enter**.

- *Printer_port* is the name of the printer port (LPT1, LPT2, etc.) to which the HP LaserJet printer is connected.

- *Sharename* is the name given to the shared print queue.

4. To make the shared queue permanent (meaning it still is shared after the server has been rebooted), type:

```
NET SAVE SRVSHARE.PRO /Y
```

and press **Enter**.

This completes the instructions for assigning and sharing a print queue for your printer.

To Print From a Workstation

Issue the following NET USE command from the individual user's workstation (users must have the correct permissions):

```
NET USE LPT1 \\server-name\sharename
```

- *Server-name* is the name of the server to which the HP LaserJet printer is connected.
- *Sharename* is the name given to the shared print queue.

Setting Up System Language Switching

The HP LaserJet 4 printer can switch between the PCL and PostScript languages. (You can set up your printer for PostScript printing only if it has the PostScript language option installed.) This section describes how to configure your server software to enable system language switching on your printer.

Note



In order to use the 3Com 3+Open print spooler as outlined in this document, *the Presentation Manager spooler must be disabled*. To disable the Presentation Manager spooler on the server, DO NOT select spooler from **Spooler Options** under the **Setup** menu in the Presentation Manager Control Panel window. Then reboot the server.

Setting up system language switching consists of the following procedures:

- Configuring the printer for system language switching.
- Creating separator pages.
- Creating the system language switching print queues.
- Setting up the correct queues for users.

Caution



All downloaded fonts, forms, and macros are deleted from printer memory whenever you switch languages. Since system language switching changes the way your printer operates in a multi-user environment, it should be implemented and controlled by the network administrator.

To Configure the Printer

Set the default printer language to AUTO. Using the AUTO CONT= menu item enables the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from printing.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=AUTO appears.
5. Press **Enter** to save your selection.
PERSONALITY=AUTO * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Create Separator Pages

Separator pages must be created to tell the printer which language is used. The separator page file contains system language switching commands.

1. Create a separator page file directory, C:\SEP, or a directory of your choice. (This example assumes the file directory is C:\SEP.)

Note



You *must* enter the information exactly as shown, and the switch commands *must* be the first two lines in the file.

2. Use a text editor or your word processor to create the ASCII text file C:\SEP\PCL.SEP. The file must contain the following statements:

```
\
  \H1B\L%-12345X@PJL ENTER LANGUAGE=PCL
  \H1B\L&ℓ1T\0
```

3. Create the ASCII text file C:\SEP\PS.SEP. The file must contain the following information:

```
\
  \H1B\L%-12345X@PJL ENTER LANGUAGE=POSTSCRIPT\0
```

Note



These separator pages use the backslash character (\) as the escape character instead of (@), the 3+Open default escape character. If you add additional information to the separator pages, use the backslash character (\) as the escape character.

To Assign Print Queues

To enable system language switching, you must assign print queues on the server. Use NET ADMIN to assign print queues on the server, or enter the information exactly as shown below on an OS/2 server screen:

```
NET SHARE queue1name /PRINT
NET PRINT queue1name /SEP:C:\SEP\PCL.SEP
      /PARMS:EJECT=AUTO /ROUTE:destination
```

```
NET SHARE queue2name /PRINT
NET PRINT queue2name /SEP:C:\SEP\PS.SEP
      /PARMS:EJECT=NO /ROUTE:destination
```

- *Destination* is the name of the printer port (LPT1, LPT2, etc.) to which the HP LaserJet 4 printer is attached (for serial or Centronics), or the seven-character printer name followed by a \$ chosen when NPCONFIG was run.

Note



If the print queue does not exist, a message appears asking if you want to create a new queue. Select **YES**.

To make the shared queue permanent (meaning it still is shared after the server has been rebooted), type:

```
NET SAVE SRVSHARE.PRO /Y
```

and press .



To Print From a Workstation

Issue the following NET USE commands from the individual user's workstation (users must have the correct permissions). The following example assumes LPT1 for PCL printing and LPT2 for PostScript printing.

```
NET USE LPT1 \\server_name\queue_name
```

- *Server_name* is the name of the server you are currently configuring.

To enable printing for PostScript jobs, users must issue this command:

```
NET USE LPT2 \\server_name\queue_name
```

- *Server_name* is the name of the server you are currently configuring.

Note

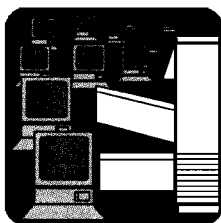


You can make system language switching easier for the users on your network by putting the two above commands in each user's startup file (STARTUP.COM for OS/2 users and AUTOEXEC.BAT for DOS users). These commands also can be saved in the user's NETLOGON.PRO file.

Once the network is set up, network users must verify that applications printing PCL print jobs redirect output to LPT1, and applications printing PostScript print jobs redirect output to LPT2.

UNIX Environments

Overview



This chapter describes setting up the printer in HP-UX and BSD-Based environments. It explains the following procedures in both UNIX environments:

- Setting up PCL-Only printing.
- Setting up PostScript-Only printing.
- Setting up system language switching between PCL and PostScript.

PCL-Only Printing on HP-UX Systems

To set up your HP-UX server for PCL-only printing, complete the following procedures:

- Configure the printer control panel.
- Add the printer to the LP Spooler as described in the *HP-UX System Administration Tasks Manual*.

To Configure the Printer

Set PERSONALITY= to PCL for PCL printing. Using the AUTO CONT= menu item allows you to enable the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from continuing to print jobs.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=PCL appears.
5. Press **Enter** to save your selection.
PERSONALITY=PCL * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*

Note



For a serial connection, set HANDSHK=ROBUST.

11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Add the Printer to the LP Spooler

Follow the directions in the *HP-UX System Administration Tasks Manual* to add the printer to the LP Spooler.

You need to specify `/usr/spool/lp/model/laserjet` as the interface script for the printer.

PostScript-Only Printing on HP-UX Systems

HP-UX release 8.0 provides an interface script which can be used with the HP LaserJet 4 printer when it is configured as a PostScript printer. To set up your HP-UX server for PostScript-only printing, complete the following procedures:

- Configure the printer control panel.
- Add the printer to the LP Spooler as described in the *HP-UX System Administration Tasks Manual*.

Note



You can set up your HP LaserJet 4 printer for PostScript printing only if it has the PostScript language option correctly installed.

To Configure the Printer

You will set PERSONALITY= to PS for PostScript printing. Using the AUTO CONT= menu item allows you to enable the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from continuing to print jobs.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=POSTSCRIPT appears.
5. Press **Enter** to save your selection.
PERSONALITY=POSTSCRIPT * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*
11. Press **On Line** to return the printer online. *The printer returns online and @@ READY appears on the display.*

Note



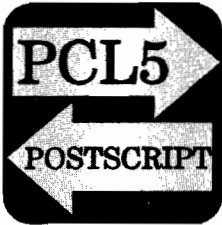
If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

To Add the Printer to the LP Spooler

Follow the directions in the *HP-UX System Administration Tasks Manual* to add the printer to the LP Spooler.

Specify /usr/spool/lp/model/postscript as the interface script for the printer.

System Language Switching on HP-UX Systems



Note



Switching to the Appropriate Language

The HP LaserJet 4 printer can be configured to switch between the PCL and PostScript printer languages. (Printer system language switching is also discussed in Chapter 2 of the *HP LaserJet 4 Printer User's Manual*.)

With system language switching, users on your network can print either a PCL or PostScript job, and the spooler will send these print jobs to the same HP LaserJet 4 printer.

The following instructions allow you to produce:

- Alternate PCL and PostScript jobs from multiple users.
- Automatic continuation when errors are encountered.

You can set up your HP LaserJet 4 printer for PostScript printing only if it has the PostScript language option correctly installed.

To set up system language switching on your HP-UX network, you must complete the following procedures:

- Configure the printer for system language switching.
- Modify the `/usr/spool/lp/model/laserjet` interface script to support a new `lp -opostscript` option.
- Add the printer to the lp spooler.

To Configure the Printer for Language Switching

Set PERSONALITY= to AUTO for language switching. Using the AUTO CONT= menu item allows you to enable the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from continuing to print jobs.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=AUTO appears.
5. Press **Enter** to save your selection.
PERSONALITY=AUTO * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON * *should be displayed.*
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.



Modifying the Interface Script

Follow these steps for modifying the interface script to support language switching:

1. Copy the script to a new file, such as `/usr/spool/lp/model/lj4`.
2. Define a new option variable (`format`) and initialize it to a null string (`format=""`).
3. Modify the for loop which determines which `lp -o` options have been invoked. *For example:*

```
for i in $5
do
  case "$i" in
    -10 | 10) #font pitch set to 10.00 cpi
      pitch="10";;
    etc.
```

becomes

```
for i in $5
do
  case "$i" in
    -postscript | postscript) #PostScript file
      format="PS"
      outputmode="raw";;
    -10 | 10)
      pitch="10";;
    etc.
```

4. Modify the case statement based on the variable `outputmode` to determine how to print the file.

For example:

```
case "$outputmode" in
  raw) case "$format" in
        PS) echo "\033%-12345X@PJL enter language=postsript";;
        *) ;;
        esac
        cat "$file" 2>/tmp/sh$$
        cat /tmp/sh$$
        rm /tmp/sh$$;;
  cooked) echo "\r\c"
        lprpp $italics $length $nroff < "$file" 2>&1;;
  esac
```

5. Reset the printer to PCL mode.

Note



The following section of code must be inserted outside of the loop which prints the files prior to the printing of the banner page, if reverse has been specified.

For example:

```
case "$format" in
  PS) echo "\033%-12345X@PJL enter language=pcl";;
  *) ;;
  esac

echo "\033E\c"
echo "\033)0B\c"
echo "\033&k2G\c"
```

To Add the Printer to the LP Spooler

To add the printer to the LP Spooler, follow these procedures:

1. Follow the directions in the *HP-UX System Administration Tasks Manual* for adding the printer to the LP Spooler.
2. Specify the script modified in the previous section as the interface script for the printer.
3. Use the command: `lp -opostscript filename` to print a PostScript file.

PCL-Only or PostScript-Only Printing on BSD-Based Systems

The BSD spooler requires each printer to have an entry in `/etc/printcapfile`, which specifies the printer's capabilities. Examples of HP LaserJet 4 printcap entries are listed below and can be used as guidelines.

Note



The `:if` and `:of` filters specified must be determined by the system administrator, based on what output type is supported by their system, and whether they have the HP LaserJet 4 printer configured for PCL or PostScript.

Example One

```
#HP LaserJet 4 printer connected to a serial port
on a DECstation
lp0|lp|0|local printer:\
:lp=/dev/ttyd2:\
:sd=/usr/spool/lpd:\
:dn=/usr/lib/lpd:\
:rw:\
:br#9600:\
:fc#0177777:\
:fs#03:\
:xc#0177777:\
:xs#040040:\
:if=/usr/lib/lpdfilters/ln03rof:\
:of=/usr/lib/lpdfilters/ln03rof:\
:pw#80:\
:pl#66:\
:mc#20:\
:lf=/usr/adm/lpd-errs:
```

Example Two

#HP LaserJet 4 printer connected to a serial port
on a Sun workstation

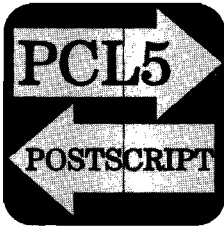
```
LJ|p1:\
:lp=/dev/ttya:\
:br#19200:\
:fc#0177777:\
:fs#03:\
:xc#0177777:\
:xs#040040:\
:ms=-parity,onlcr:\
:sh:\
:ff=<esc>E<esc>&k3G<esc>&a10L<esc>&k10H:\
:sd=/var/spool/printers/serial:\
:lf=/var/adm/lpd-errors:
```

Example Three

#HP LaserJet 4 printer connected to a parallel
port on a SBUS printer card

```
hplj4:\
:lp=/dev/bpp0:\
:sh:\
:ff=<esc>E<esc>&k3G<esc>&a10L<esc>&k10H:\
:sd=/var/spool/printers/hplj4:\
:lf=/var/spool/printers/hplj4/log:
```

Setting Up System Language Switching on BSD-Based Systems



The HP LaserJet 4 printer can be configured to switch between the PCL and PostScript printing languages. (Printer system language switching is also explained in the “System Language Switching (PCL/PostScript)” section of Chapter 4 in the *HP LaserJet 4 Printer User’s Manual*.)

Setting up system language switching consists of the following procedures:

- Creating an executable file to perform the language switching.
- Adding a printcap entry for the printer using the file created in the previous steps as the input filter.

With system language switching, users on your network can print either a PCL or PostScript job, and the spooler will send these print jobs to the same HP LaserJet 4 printer. The following instructions allow you to produce:

- Alternate PCL and PostScript jobs from multiple users.
- Automatic continuation when errors are encountered.

Note



You can set up your HP LaserJet 4 printer for PostScript printing only if it has the PostScript language option correctly installed.



To Configure the Printer for Language Switching

Set PERSONALITY= to AUTO for language switching. Using the AUTO CONT= menu item allows you to enable the printer to stop and show all errors, or continue if nonfatal errors occur. Autocontinue is set to ON so nonfatal network errors do not stop the printer from continuing to print jobs.

1. Press **On Line**, if necessary, to take the printer offline.
2. Press **Menu** repeatedly until JOB MENU appears.
3. Press **Item** repeatedly until PERSONALITY= appears.
4. Press **+/-** until PERSONALITY=AUTO appears.
5. Press **Enter** to save your selection.
PERSONALITY=AUTO * *should be displayed.*
6. Press **Item** repeatedly until JOB MENU appears.
7. Press **Menu** repeatedly until CONFIG MENU appears.
8. Press **Item**. AUTO CONT= appears.
9. Press **+/-** until AUTO CONT=ON appears.
10. Press **Enter** to save your selection. AUTO CONT=ON *
should be displayed.
11. Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

Note



If you suspect a problem with the printer, but no message appears on the display, set auto continue to OFF. This allows error messages to be displayed.

Creating an Executable File to Perform Language Switching

Setting up system language switching consists of creating an executable file to perform the switching. Create an executable file which contains the following lines:

```
#!/bin/sh
echo "<esc>%-12345X@PJL enter language=postscript"
cat -
echo "<esc>%-12345X@PJL enter language=pcl"
echo "<esc>E<esc>&k3G<esc>&a10L<esc>&k10H"
```

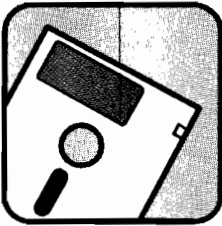
Note



Specify this executable file as the file in the *:if* command in the *printcap* entry.

Defining and Configuring a Print Device for Novell Netware

Overview



To define and configure a new print device for system language switching, complete the following steps:

- Define the new print device(s).
- Define the functions for the print device(s).
- Define the Re-initialize mode for each device.
- Define the SWITCH_TO_PCL mode.
- Define the SWITCH_TO_PS mode.
- Define the SWITCH_AUTOMATIC mode.
- Save the device definitions.

Use the following steps to complete these tasks. Note that you must be logged on as a supervisor.

To Define a PCL Print Device

1. Type PRINTDEF at the system prompt and press **Enter**.
The "Printdef Options" menu appears.
2. Select **Print devices** and press **Enter**. *The "Print Device Options" screen appears.*
3. Select **Edit print devices** and press **Enter**. *The "Defined Print Devices" screen appears.*
4. Press the **Insert** key. *The "New Device Name" screen appears.*
5. Type HP LaserJet 4 and press **Enter**.

The "Defined Print Devices" screen reappears, and HP LaserJet 4 is highlighted.

To Define Functions for the PCL Print Device

1. Select **HP LaserJet 4** and press **Enter**. *The "Edit Device Options" menu appears.*
2. Select **Device functions** and press **Enter**. *The "HP LaserJet 4 Functions" list appears.*
3. Press **Insert** to define a new function. *The "Function Definition" form appears.*
4. Enter the names and escape sequences one at a time in the order shown in Table A-1. Use the **Enter** key to move between the name and escape sequence. Press **Esc** when you have finished entering one name/escape sequence combination.
5. *The "Save Changes" menu appears.*
6. Select **Yes** and press **Enter** to save the newly defined function. *The "HP LaserJet 4 Functions" list reappears.*

7. Repeat steps 3 through 6 until all of the functions in Table A-1 are entered.

Table A-1. Name and Escape Sequences

Name	Escape Sequence
PJL-Enter PCL	@PJL<SP>enter<SP>language<SP>=<SP>PCL<LF>
Universal Exit Language	<ESC>%-12345X

Note



You must enter the escape sequence exactly as shown. PCL printer commands are case-sensitive. Do not split escape sequences into multiple lines. Although some have been shown in multiple lines because of space limitations, each escape sequence *must be entered on one line only*.

Enter any other printer commands you want to define at this time. Refer to HP's *PCL 5 Printer Language Technical Reference Manual* for more information on printer commands.



To Define the Re-Initialize Mode

1. Press **[Esc]** to return to the “Edit Device Options” menu.
2. Select **Device modes** and press **[Enter]**. *The “HP LaserJet 4 Modes” list appears.*
3. Select the **Re-initialize** mode and press **[Enter]**. *The “Re-initialize Functions” list appears.*
4. Press **[Insert]**. *The “Additional HP LaserJet 4 Functions” list appears.*
5. Select the **Universal Exit Language** item (<ESC>%-12345X) and press **[Enter]**.
6. Press **[Esc]**. *The “HP LaserJet 4 Modes” list appears.*

To Define the SWITCH_TO_PCL Mode

1. Press **[Insert]**. *The “New Mode Name” screen appears.*
2. Type SWITCH_TO_PCL and press **[Enter]**. *The “SWITCH_TO_PCL Functions” list appears.*
3. Press **[Insert]**. *The “Additional HP LaserJet 4 Functions” list appears.*
4. Select the **Universal Exit Language** function. Press **[Enter]**.
5. Select the **PJL-Enter PCL** function. Press **[Enter]**.
6. Press **[Esc]** to return to the “HP LaserJet 4 Modes” list.
7. If creating Printer Definition files for a switched mode printer, go to “To Define a LaserJet PS Print Device.”

To Save the Device Definitions

1. Press **[Esc]** repeatedly until you return to the “Exit Printdef” menu.
2. Select **Yes** and press **[Enter]**. *The “Exit Options” menu appears.*
3. Select **Save Data Base**, then **EXIT** and press **[Enter]**.
The information is saved in the system database.

To Define a LaserJet PostScript Print Device

1. Press the **Escape** key twice to return to the “Defined Print Devices” menu.
2. Press the **Insert** key. *The “New Device Name” screen appears.*
3. Type HP LaserJet 4 and press **Enter**. *The “Defined Print Devices” screen reappears, and HP LaserJet 4 is highlighted.*

To Define Functions for the PostScript Print Device

To define functions for the PostScript print device, follow these steps:

1. Select **HP LaserJet 4** and press **Enter**. *The “Edit Device Options” menu appears.*
2. Select **Device functions** and press **Enter**. *The “HP LaserJet 4 Functions” list appears.*
3. Press **Insert** to define a new function. *The “Function Definition” form appears.*
4. Enter the following name and escape sequences one at a time, for the type of print device defined in step 1, in the order shown in Table A-2. Use the **Enter** key to move between the name and escape sequence. Press **Esc** when you have finished entering one name/escape sequence combination.
5. *The “Save Changes” menu appears.*
6. Select **Yes** and press **Enter** to save the newly defined function. *The “HP LaserJet 4 Functions” list reappears.*
7. Repeat steps 3 through 6 until all of the functions in Table A-2 are entered.

Table A-2. Name and Escape Sequences

Name	Escape Sequence
PJL-Enter PS	@PJL<SP>enter<SP>language<SP>=<SP>POSTSCRIPT<LF>
Universal Exit Language	<ESC>%-12345X

Note



You must enter the escape sequence exactly as shown. PCL printer commands are case-sensitive. Do not split escape sequences into multiple lines. Although some have been shown in multiple lines because of space limitations, each escape sequence *must be entered on one line only*.

Enter any other printer commands you want to define at this time. Refer to HP's *PCL 5 Printer Language Technical Reference Manual* for more information on printer commands.

To Define the Re-Initialize Mode

1. Press **Esc** to return to the "Edit Device Options" menu.
2. Select **Device modes** and press **Enter**. The "HP LaserJet 4 Modes" list appears.
3. Select the **Re-initialize** mode and press **Enter**. The "Re-initialize Functions" list appears.
4. Press **Insert**. The "Additional HP LaserJet 4 Functions" list appears.
5. Select the **Universal Exit Language** item (<ESC>%-12345X) and press **Enter**.
6. Press **Esc**. The "HP LaserJet 4 Modes" list appears.

To Define the SWITCH_TO_PS Mode

1. Press **Insert**. The “New Mode Name” screen appears.
2. Type SWITCH_TO_PS and press **Enter**. The “SWITCH_TO_PS Functions” list appears.
3. Press **Insert**. The “Additional HP LaserJet 4 Functions” list appears.
4. Select the **Universal Exit Language** function. Press **Enter**.
5. Select the **Switch to PS** function. Press **Enter**.
6. Press **Esc** to return to the “HP LaserJet 4 Modes” list.

To Save the Device Definitions

1. Press **Esc** repeatedly until you return to the “Exit Printdef” menu.
2. Select **Yes** and press **Enter**. The “Exit Options” menu appears.
3. Select **Save Data Base**, then **EXIT** and press **Enter**. The new device information is saved in the system database.

Refer to Chapter 1 to complete the configuration process.

To Define an Automatic LaserJet PCL/PS Print Device

1. Press the **Escape** key twice to return to the “Defined Print Devices” menu.
2. Press the **Insert** key. *The “New Device Name” screen appears.*
3. Type HP LaserJet 4 and press **Enter**.
The “Defined Print Devices” screen reappears, and HP LaserJet 4 is highlighted.

To Define Functions for the PCL/PS Print Device

To define functions for the PCL/PS print device, follow these steps:

1. Select **HP LaserJet 4** and press **Enter**. *The “Edit Device Options” menu appears.*
2. Select **Device functions** and press **Enter**. *The “HP LaserJet 4 Functions” list appears.*
3. Press **Insert** to define a new function. *The “Function Definition” form appears.*
4. Enter the following name and escape sequence. Use the **Enter** key to move between the name and escape sequence. Press **Esc** when you have finished entering the name/escape sequence combination.

Table A-3. Name and Escape Sequences

Name	Escape Sequence
Universal Exit Language	<ESC>%-12345X

5. *The “Save Changes” menu appears.*
6. Select **Yes** and press **Enter** to save the newly defined function. *The “HP LaserJet 4 Functions” list reappears.*

To Define the Re-Initialize Mode

1. Press **Esc** to return to the “Edit Device Options” menu.
2. Select **Device modes** and press **Enter**. *The “HP LaserJet 4 Modes” list appears.*
3. Select the **Re-initialize** mode and press **Enter**. *The “Re-initialize Functions” list appears.*
4. Press **Insert**. *The “Additional HP LaserJet 4 Functions” list appears.*
5. Select the **Universal Exit Language** item (<ESC>%-12345X) and press **Enter**.
6. Press **Esc**. *The “HP LaserJet 4 Modes” list appears.*

To Define the SWITCH_AUTOMATIC Mode

1. Press **Insert**. *The “New Mode Name” screen appears.*
2. Type SWITCH_AUTOMATIC and press **Enter**. *The “SWITCH_AUTOMATIC Functions” list appears.*
3. Press **Insert**. *The “Additional HP LaserJet 4 Functions” list appears.*
4. Select the **Universal Exit Language** function. Press **Enter**.
5. Press **Esc** to return to the “HP LaserJet 4 Modes” list.

Table A-4. Name and Escape Sequences

Name	Escape Sequence
Universal Exit Language	<ESC>%-12345X

Configuring the Printer

Three printer settings can vary depending on the configuration you define. For language switching, Hewlett-Packard recommends that system language (PERSONALITY=) always be set to AUTO as the default language.

The following table lists the printer control panel options.

Table B-1. PERSONALITY Options

Menu Item	Options	Recommendation
PERSONALITY	PCL, POSTSCRIPT, or AUTO	AUTO

Modifying the SHELL.CFG File

When using job offset, if you are receiving incomplete execution of the re-initialize functions, such as characters printed at the end of your job, or PostScript errors at the beginning of the next job, you must add a line to each user's "SHELL.CFG" file to use the CAPTURE commands. The "SHELL.CFG" file is required for adding function commands totalling more than 16 characters long to the Re-initialize mode, such as PCL job offset or switching to PCL.

The "SHELL.CFG" file is located in the directory from which you issue network start-up commands (for example, IPX and NET3, NET4, or NET5). If the "SHELL.CFG" file does not exist, create one containing the following line:

```
PRINT TAIL=50
```

After adding the above line:

1. Reboot the workstation.
2. Reattach the workstation to the network.

Note



PRINT TAIL 50 should appear on one of the command lines when you issue a NET3, NET4, or NET5 command.

3. Issue the CAPTURE command.

Defining Print Devices in PRINTDEF

In PRINTDEF, you define the print devices for network printing. The functions listed below can be used to define the modes which make up the print device.

Table B-2. Language Switching Functions

Functions	Escape Sequences
Universal Exit Language	<ESC>%-12345X
PJL-Enter PCL	@PJL<SP>enter<SP>language<SP>=<SP>PCL<LF>
PJL-Enter PS	@PJL<SP>enter<SP>language<SP>=<SP>POSTSCRIPT<LF>

To define Modes, use the functions listed in Table B-2. The following table lists the different modes that can be used and the functions each can contain. The functions marked by an asterisk (*) indicate the optional functions that you can include in each mode.

Note



If possible, import the HP print device files with the predefined functions. Rename the devices, then create the new modes necessary for banner pages.

Table B-3. Print Device Modes

Modes	Functions
SWITCH_TO_PCL	Universal Exit Language PJL-Enter PCL
SWITCH_TO_PS	Universal Exit Language PJL-Enter PS
SWITCH_AUTOMATIC	Universal Exit Language
(Re-initialize)	Universal Exit Language PJL-Enter PCL*

Creating Print Job Configurations in PRINTCON

In PRINTCON you create the print job configuration that controls the way jobs are printed. You can select whether banner pages are printed in PCL or PostScript, which Print Device is used, and various other parts of the print job configuration.

Examples of Language Switching Options

The previously listed areas, the printer control panel, PRINTDEF, and PRINTCON, combine to create the language switching configuration. The following four tables list the various selections you can make for the language switching configuration that best meets your needs. (Optional means the user can select YES or NO.)

Example One This configuration:

- enables PCL jobs to print using one job configuration, and PostScript jobs to print using another job configuration.
- allows optional PCL banner pages.
- allows optional text banner pages before PostScript jobs.

Table B-4.
Controlled Language Switching Example

Source	Actions
Control Panel	Set PERSONALITY=AUTO
PRINTDEF	Import HPLJ4.PDF
PRINTCON (for PCL jobs)	Set: Device= HP LaserJet 4 Mode= SWITCH_TO_PCL Banner= Optional
PRINTCON (for PostScript jobs)	Set: Device= HP LaserJet 4 Mode= SWITCH_TO_PS Banner= Optional

Example Two

This configuration:

- enables PCL and PostScript jobs to print using one job configuration.
- allows optional PCL banner pages.
- allows optional text banner pages before PostScript jobs.

Table B-5.
Automatic Language Switching Example

Source	Actions
Control Panel	Set PERSONALITY=AUTO
PRINTDEF	Import HPLJ4 .PDF
PRINTCON (for all jobs)	Set: Device= HP LaserJet 4 Mode= SWITCH_AUTOMATIC Banner= Optional

PostScript-Only Example

This configuration does not allow PostScript banner pages.

Table B-6.
PostScript-Only Configuration Example

Source	Actions
Control Panel	Set PERSONALITY=PS
PRINTDEF	Import HPLJ4.PDF
PRINTCON	Set: Device= HP LaserJet 4 Mode= SWITCH_TO_PS Banner= NO

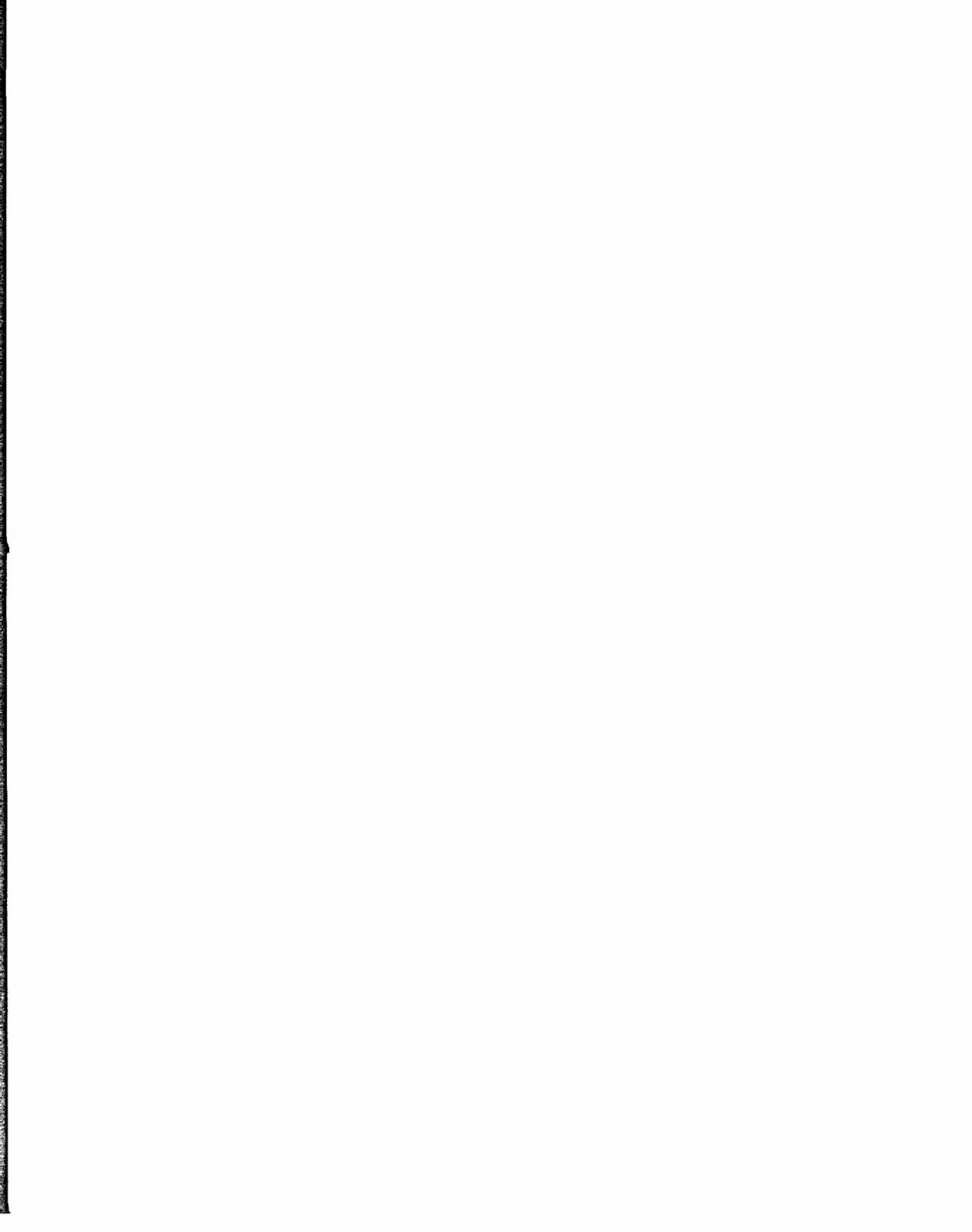
PCL-Only Example

This configuration does allow PCL banner pages.

Table B-7. PCL-Only Configuration Example

Source	Action
Control Panel	Set PERSONALITY=PCL
PRINTDEF	Import HP LaserJet 4
PRINTCON	Set: Device= HP LaserJet 4 Mode= SWITCH_TO_PCL Banner= YES







Copyright© 1992
Hewlett-Packard Company
Printed in USA 11/92

**Manual Part No.
C2001-90943**



C2001-90943



Printed on recycled paper