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## HP LaserJet 4Si Printer

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## Conventions

This guide uses the following conventions:

*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).

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**Note** Notes contain important information set off from the text.

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

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

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## Introduction

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

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**Note**

You can set up PostScript printing only if your printer is equipped with the PostScript language.

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## Enhancing Performance

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

### **HP LaserJet 4Si**

Installing additional memory is recommended if your printer has the PostScript accessory kit. Refer to chapter five of the *HP LaserJet 4Si Printer User's Reference Manual* for specific information about adding memory for PostScript.

### **HP JetDirect Network Interfaces**

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. HP JetDirect cards must be used with dedicated file servers only.
- 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 for OS/2 1.3, twelve printers on a server for OS/2 2.0) may require 16 Mbytes of RAM.

## **Soft Fonts and Typeface User Suggestions**

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

- Setting RESOURCE SAVING to ON or using font cartridges saves downloaded scalable typefaces, soft fonts, and macros when changing the printer from 600 dpi mode to 300 dpi mode or vice versa, changing the PAGEPROTECT setting, or performing a system language switch (refer to chapter 1 of the *HP LaserJet 4Si Operator's Guide* for more information about resource saving).
- Encourage the use of the HP LaserJet 4Si printer's extensive internal scalable typeface selections; PCL and TrueType 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. Set RESOURCE SAVING to ON only if you plan to save downloaded scalable typefaces, soft fonts, and macros. Be careful not to allocate more memory than is required to save the downloaded information. Refer to chapter 1 of the *HP LaserJet 4Si Printer Operator's Guide* for more information about resource saving.
- 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.

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## How To Use This Guide

This guide contains information from Hewlett-Packard, IBM Corporation, Microsoft Corporation, and Novell, Inc. It is designed to help you set up the HP LaserJet 4Si printer with Novell NetWare, IBM LAN Server, or Microsoft LAN Manager. 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 4Si Printer User's Reference Manual*, *HP JetDirect Administrator's Guide*, and network documentation.

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

- Novell NetWare networks (chapter 1).
- IBM LAN Server or Microsoft LAN Manager networks (chapter 2).
- SCO-UNIX and HP-UX environments (chapter 3).
- Sun and BSD-Based spooler environments (chapter 3).

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**Note**

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

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## Before You Begin

If you are not familiar with Novell NetWare, IBM LAN Server, Microsoft 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 directly to a Novell NetWare, IBM LAN Server, Microsoft LAN Manager, or Unix network using an HP JetDirect card and Ethernet or Token Ring cabling, or are connecting your printer to a server on a Novell NetWare, IBM LAN Server, Microsoft LAN Manager, or UNIX network with a Serial or Parallel cable.
- Are the network supervisor or administrator for your network.
- Have used Novell NetWare, IBM OS/2, or Unix.
- Have the proper software and device drivers (see software requirements in the relevant chapters which follow).





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# Contents

Conventions	ii
Introduction	iii
Enhancing Performance	iv
HP LaserJet 4Si	iv
HP JetDirect Network Interfaces	iv
NetWare 386-Based Products	iv
NetWare 286-Based Products	iv
IBM LAN Server and Microsoft LAN Manager	v
Soft Fonts and Typeface User Suggestions	v
How To Use This Guide	vi
Before You Begin	vii

## 1 Novell NetWare Networks

Overview	1-2
Setting Up PCL-Only Printing	1-4
To Configure the Network	1-4
Setting Up PostScript-Only Printing	1-7
To Configure the Printer	1-7
To Configure the Network	1-7
System Language Switching	1-10
Setting up Automatic Language Switching	1-11
To Configure the Printer for Automatic Language Switching	1-12
To Configure the Network for Automatic Language Switching	1-12
Setting Up Controlled Language Switching	1-15
To Configure the Printer for Controlled Language Switching	1-15
To Configure the Network for Controlled Language Switching	1-16
Using the CAPTURE Command	1-20
Using the NPRINT Command	1-23

## 2 IBM LAN Server and Microsoft LAN Manager Networks

Overview	2-2
Setting Up PCL-Only Printing	2-4
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
  - Configuring the Server for OS/2 Version 2.0 2-19
  - Using Separator Pages 2-21
  - To Print From a Workstation 2-22

### **3 UNIX Environments**

- Overview 3-2
- PCL-Only Printing on HP-UX Systems 3-2
  - To Add the Printer to the LP Spooler 3-2
  - To Configure the Printer 3-3
- PostScript-Only Printing on HP-UX Systems 3-4
  - To Add the Printer to the LP Spooler 3-4
  - To Configure the Printer 3-4
- Language Switching on HP-UX Systems 3-5
  - Switching to the Appropriate Language 3-5
  - To Add the Printer to the LP Spooler 3-6
  - To Configure the Printer for Language Switching 3-6
- PCL-Only or PostScript-Only Printing on BSD-Based Systems 3-8
- Setting Up Language Switching on BSD-Based Systems 3-10
  - To Configure the Printer for Language Switching 3-11
  - Creating Executable Files to Perform Language Switching 3-11

### **A Defining a Print Device for Novell Netware**

- Overview A-2
- To Define a PCL Print Device A-3
  - To Define Functions for the PCL Print Device A-3
  - To Define the Re-Initialize Mode A-4
  - To Define the SWITCH\_TO\_PCL Mode A-5
  - To Save the Device Definitions A-5
- To Define a LaserJet PostScript Print Device A-6
  - To Define Functions for the PostScript Print Device A-6
  - To Define the Re-Initialize Mode A-7
  - To Define the SWITCH\_TO\_PS Mode A-8
  - To Save the Device Definitions A-8
- To Define an Automatic LaserJet PCL/PS Print Device A-9
  - To Define Functions for the PCL/PS Print Device A-9

To Define the Re-Initialize Mode -10  
To Define the SWITCH\_AUTOMATIC Mode -11  
To Save the Device Definitions -12

## **B Language Switching Options for Novell Netware**



Overview B-2  
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-6  
    Example Two B-7  
    PostScript-Only Example B-7  
    PCL-Only Example B-8



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**Novell NetWare  
Networks**



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## Overview

This chapter describes printing with a Novell NetWare 286 network, version 2.15c or greater, and a Novell NetWare 386 network, version 3.1 or greater, on an HP LaserJet 4Si printer. It explains:

- Setting up your printer for PCL-only printing. *This means your printer is dedicated to PCL, but will still print a PostScript job using PjL (Printer Job Language), provided the printer has PostScript and a user's software specifically requests it. (Go to "Setting Up PCL-Only Printing.")*
- Setting up your printer for PostScript-only printing. *This means your printer is dedicated to PostScript, but will still print a PCL job using PjL (Printer Job Language) if a user's software specifically requests it. (Go to "Setting Up PostScript-Only Printing.")*
- 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.")*
- Setting up your printer for controlled 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 "Setting Up Controlled Language Switching.")*
- Issuing CAPTURE or NPRINT commands according to the four printing configurations. (Go to "Using the CAPTURE Command," or "Using the NPRINT Command.")



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**Note**

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

Hewlett-Packard recommends using the HPLJ4Si.PDF as the print device during these procedures. The HPLJ4Si.PDF is located on the DOS Driver disk which came with your HP LaserJet 4Si printer. Other print devices may be used, but you would not be able to use all of the printer features, such as controlled language switching. You can also use appendix A to create the print device.

You can also receive a copy of the HPLJ4Si.PDF print device by using one of the following:

- HP's Distribution Center. Call (303) 353-7650 from 7 A.M. to 6 P.M. (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 HP 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 PCL jobs from multiple users.

### 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 **HPLJ4Si.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 source directory which contains the PDF files. For example `SYS:PUBLIC`. *The "Available .PDFs" screen appears.*
  - e Select **HPLJ4Si.PDF** from the list. *The "Print Device Options" menu appears.*

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**Note**

The HPLJ4Si.PDF is located on the DOS Driver disk that came with your printer. If you do not have the HPLJ4Si.PDF, refer to appendix A, "Defining a Print Device for Novell Netware," to create a PostScript device, or refer to the ordering information at the front of this chapter.

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- f To verify the HPLJ4Si.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4Si.
  - 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 1-1. To change a field's value, highlight that field using the cursor keys and type the change.*

Table 1-1

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**PCL Printer Configuration Parameters**

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<b>Field Name</b>	<b>Item</b>
File contents	Byte stream
Print banner	No (or user's option)
Suppress form feed	Yes
Enable timeout	No*
File server	<i>File server serviced by printer</i>
Print queue	<i>Print queue serviced by printer</i>
Device	HP LaserJet 4Si
Mode	SWITCH_TO_PCL

\* 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).

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**Note**

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

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## Setting Up PostScript-Only Printing

The printer can be configured to print only PostScript jobs, but it must have PostScript installed. The following sections provide instructions for producing PostScript jobs from multiple users.

### To Configure the Printer

Change the default printer language to PostScript.

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

### 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 HPLJ4Si.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 source directory which contains the PDF files. For example `SYS:PUBLIC`. *The “Available .PDFs” screen appears.*
- e Select **HPLJ4Si.PDF** from the list. *The “Print Device Options” menu appears.*

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**Note**

The HPLJ4Si.PDF is located on the DOS Driver disk that came with your printer. If you do not have the HPLJ4Si.PDF, refer to appendix A, “Defining 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 HPLJ4Si.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4Si.
  - 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

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**PostScript Printer Configuration Parameters**

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<b>Field Name</b>	<b>Item</b>
File contents	Byte stream
Print banner	No (or user's option)
Suppress form feed	Yes
Enable timeout	No*
File server	File server serviced by printer
Print queue	Print queue serviced by printer
Device	HP LaserJet 4Si
Mode	SWITCH_TO_PS

\*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**

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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.*

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**Note**

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A newly defined print job configuration must be copied for those users printing to the printer. Refer to Novell's documentation for more information.



## System Language Switching

The HP LaserJet 4Si 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 4Si Printer User's Reference Manual*.)

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

- **Automatic system language switching** uses a single job definition and one CAPTURE or NPRINT command for both PCL and PostScript (go to “Setting Up Automatic System Language Switching” on the next page).
- **Controlled system language switching** uses one job definition and one CAPTURE or NPRINT command for PCL, and another job definition, and another CAPTURE or NPRINT command, for PostScript (go to “Setting Up Controlled Language Switching”).

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**Note**

You can set up your HP LaserJet 4Si printer for PostScript printing only if the printer has PostScript installed.

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## Setting up Automatic Language Switching

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.
- Specify PCL or PostScript printing using Novell's CAPTURE or NPRINT command.

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### Caution

All downloaded fonts, forms, and macros are deleted from printer memory when you switch languages unless RESOURCE SAVING is set to ON (refer to the *HP LaserJet 4Si Operator's Guide* for more information about resource saving). 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.

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### To Configure the Printer for Automatic Language Switching

Ensure that the default printer language is set to automatic.

- 1 Press **On Line**, if necessary, to take the printer offline.
- 2 Press **Menu** repeatedly until JOB MENU appears.
- 3 Press **Item** repeatedly until PERSONALTY=AUTO\* appears.
- 4 Press **On Line** to return the printer online. *The printer returns online and 00 READY appears on the display.*

### To Configure 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 with 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 HPLJ4Si.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 **HPLJ4Si.PDF** from the list. *The “Print Device Options” menu appears.*

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**Note**

The HPLJ4Si.PDF is located on the DOS Driver disk that came with your printer. If you do not have the HPLJ4Si.PDF, refer to appendix A, “Defining 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 HPLJ4Si.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4Si.
  - 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_PS_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/PS Printer Configuration Parameters

Field Name	Item
File contents	Byte stream
Print banner	No (or user's option)
Suppress form feed	Yes
Enable timeout	No*
File server	<i>File server to be serviced by printer</i>
Print queue	<i>Print queue to be serviced by printer</i>
Device	HP LaserJet 4Si
Mode	SWITCH_AUTOMATIC

\* 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**. 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. Refer to Novell's documentation for more information.



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## Setting Up Controlled Language Switching

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

- Configure the printer for controlled 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.

### To Configure the Printer for Controlled Language Switching

Ensure that the default printer language is set to automatic for either automatic or controlled language switching.

- 1 Press **On Line**, if necessary, to take the printer offline.
- 2 Press **Menu** repeatedly until JOB MENU appears.
- 3 Press **Item** repeatedly until PERSONALTY= AUTO\* appears.
- 4 Press **On Line** to return the printer online. *The printer returns online and `00 READY` appears on the display.*

## 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 **HPLJ4Si.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 **HPLJ4Si.PDF** from the list. *The “Print Device Options” menu appears.*

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**Note**

The HPLJ4Si.PDF is located on the DOS Driver disk that came with your printer. If you do not have the HPLJ4Si.PDF, refer to appendix A, “Defining 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 HPLJ4Si.PDF file was imported, select **Edit Print Devices**. It should appear as HP LaserJet 4Si.
- 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 the table below. If you need to change the value in a field, highlight that field using the cursor keys and type the change.

Table 1-4

PCL Printer Configuration Parameters	
Field Name	Item
File contents	Byte stream
Print banner	No (or user's option)
Suppress form feed	Yes
Enable timeout	No*
File server	<i>File server to be serviced by printer</i>
Print queue	<i>Print queue to be serviced by printer</i>
Device	HP LaserJet 4Si
Mode	SWITCH_TO_PCL

\* 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 the table below. To change a field's value, highlight that field using the cursor keys and type the change.

Table 1-5

Field Name	Item
File contents	Byte stream
Print Banner	No (or user's option)
Suppress form feed	Yes
Enable timeout	No*
File server	File server serviced by printer
Print queue	Print queue serviced by printer
Device	HP LaserJet 4Si
Mode	SWITCH_TO_PS

\* 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. 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. You can issue capture commands from:

- system login script
- user login script
- command line.

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 table below.

Table 1-6

---

### CAPTURE OPTIONS

---

	Recommended	Use With Caution	Not Recommended
Show	Job=configuration	Timeout=n	Tabs=n
NOTify	NAME=name	CReate=path	FormFeed
NoNOTify	NoBanner	Server=filerserver	
Autoendcap	Banner=bannername	Queue=queuenam	
Copies=n	NoFormFeed	NoAutoendcap	
No Tabs	Keep	Local=n	
		Form=form	



---

**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. Network users operating in a Windows environment can then use the HP JetPrint Utility to perform drag and drop printing from Windows File Manager.

You can encourage users to include 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 on the next page.

---

**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 the table below.

Table 1-7

---

**CAPTURE Options**

---

	<b>Recommended</b>	<b>Use With Caution</b>	<b>Not Recommended</b>
Show	NoBanner	Timeout=n	Tabs=n
NOTify	NoFormFeed	Reate=path	Formfeed
NoNOTify	Keep	erver=fileserv	NAME=name
Autoendcap	Autoendcap	Queue=queueName	Banner=Banner rname
Copies=n	Local=n	Form=form	
NoTabs			

---

**Notes** 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 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, PS\_JOB, or PCL\_PS\_JOB).
- *Nprint\_options* are items which can be selected from either the PCL NPRINT Options table, or the PostScript NPRINT Options table.

Table 1-8

---

### PCL NPRINT Options

---

Recommended	Use With Caution	Not Recommended
NOTIfy	Server=fileserv	Tabs=n
NoNOTIfy	Queue=queueName	FormFeed
Copies=n	Delete	
NoTabs	PrintServer=printserver	
NoBanner	Form=form	
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 in the “Not Recommended” column 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 with an IBM LAN Server network, version 1.3 or greater, or on a Microsoft LAN Manager network, version 2.0 or greater, on an HP LaserJet 4Si printer. This chapter explains:

- Setting up PCL-only printing. *This means your printer is dedicated to PCL, but will still print a PostScript job using PJJ (Printer Job Language), provided the printer has PostScript and the user's software specifically requests it.* (Go to the section titled "PCL-Only Printing.")
- Setting up PostScript-only printing. *This means your printer is dedicated to PCL, but will still print a PostScript job using PJJ (Printer Job Language), provided the printer has PostScript and the user's software specifically requests it.* (Go to the section titled "PostScript-Only Printing.")
- 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.

**Overview**

Hewlett-Packard recommends the 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 use 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 A.M. to 6 P.M. (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 4Si printer can be configured to print only PCL jobs. The following sections provide instructions for producing PCL jobs from multiple users.

### 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 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 4Si 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 4Si 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

The following sections provide instructions for producing PostScript-only jobs from multiple users.

---

**Note** You can set up PostScript-only printing only if PostScript is installed in the printer.

---

### To Configure the Printer

Set the default printer language to PS by following the procedures below.

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

## 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 4Si 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 PSCRIPT.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 4Si 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" 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

The HP LaserJet 4Si 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 4Si Printer User's Reference 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

---

### Note

You can set up your HP LaserJet 4Si printer for PostScript printing only if it has PostScript installed.

### 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 unless you have set RESOURCE SAVING to ON (refer to the *HP LaserJet 4Si Operator's Guide* for more information on resource saving). 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

Ensure that the default printer language is set to AUTO by following the procedures listed below.

- 1 Press **On Line**, if necessary, to take the printer offline.
- 2 Press **Menu** repeatedly until JOB MENU appears.
- 3 Press **Item** repeatedly until PERSONALTY= AUTO\* appears.
- 4 Press **On Line** to return the printer online. *The printer returns online and @@ READY appears on the display.*



### **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** Choose 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 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**

- 12 Select the **Queues** item on the **Setup** menu. *The "Queues" screen appears.*
- 13 Select the **Add** button at the bottom of the screen. *The "Add Queue" screen appears.*
- 14 Enter the new queue name in the **Name** field.
- 15 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.
- 16 Select the PostScript default printer driver. (Hewlett-Packard recommends PSCRIPT.HP.)
- 17 Choose the **Add** button at the bottom of the screen.
- 18 At the OS/2 command prompt, type:  

```
NET SHARE queuename /PR
```
- 19 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.*

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.*

- 5 Select the **Printer Driver** tab. *The "Print Driver" page is displayed.*
- 6 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.)

- 7 Select the **Output** tab on the "Printer Settings" notebook.
- 8 Verify that the device is LPTx or COMx for a parallel or serial connected printer.
- 9 Close the "Printer Settings" notebook.
- 10 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.

---

**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 language switching between PCL and PostScript.

---

## PCL-Only Printing on HP-UX Systems

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

- Add the printer to the LP Spooler.
- Configure the printer control panel.

### To Add the Printer to the LP Spooler

- 1 Log in as a super user, and run `/usr/bin/sam` (System Administration Manager).
- 2 Specify one of the following as the interface script for the printer.
  - `net_lg4x` if available. (You will send a job to the printer with the command `lp -opcl filename`.)
  - `laserjetIIIIsi`
  - `laserjetIIIIsi`

## To Configure the Printer

Set PERSONALTY= to PCL for PCL 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 PERSONALTY=AUTO\* appears.
- 4 Press **+/-** until PERSONALTY=PCL appears.
- 5 Press **Enter** to save your selection. PERSONALTY=PCL \* *should be displayed*
- 6 Press **On Line** to return the printer online. *The printer returns online and ⓄⓄ READY appears on the display.*

---

## PostScript-Only Printing on HP-UX Systems

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

- Add the printer to the LP Spooler.
- Configure the printer control panel.

---

**Note**

You can set up your printer for PostScript printing only if it has the PostScript language installed.

---

### To Add the Printer to the LP Spooler

- 1 Log in as super user, and run /usr/bin/sam (System Administration Manager).
- 2 Specify `postscript` as the interface script for the printer.

### To Configure the Printer

Set `PERSONALTY=` to PS for PostScript 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 `PERSONALTY=AUTO*` appears.
- 4 Press **+/-** until `PERSONALTY=PS` appears.
- 5 Press **Enter** to save your selection. `PERSONALTY=PS` \* *should be displayed*
- 6 Press **On Line** to return the printer online. *The printer returns online and `OK READY` appears on the display.*



---

## Language Switching on HP-UX Systems

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

With 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 4Si printer. The following instructions allows you to produce alternate PCL and PostScript jobs from multiple users.

---

### Note

You can set up your HP LaserJet 4Si printer for PostScript printing only if the PostScript language is installed.

### Switching to the Appropriate Language

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

- Add the printer to the LP Spooler.
- Configure the printer for system language switching.





### To Add the Printer to the LP Spooler

- 1 Log in as a super user, and run `/usr/bin/sam` (System Administration Manager).
- 2 Select `net_lj4x`, `laserjetIIIISi`, or `laserjetIIIIsi` as the interface script.

For PostScript printing, specify `lp -opostscript`. For PCL printing when using the `net_lj4x` interface script, specify `-opcl`. No option is needed for PCL printing when using either the `laserjetIIIISi` or `laserjetIIIIsi` interface script.

### To Configure the Printer for Language Switching

If you use `net_lj4x` as the interface script, ensure that `PERSONALTY=` is set to `AUTO` for language switching.

- 1 Press **On Line**, if necessary, to take the printer offline.
- 2 Press **Menu** repeatedly until `JOB MENU` appears.
- 3 Press **Item** repeatedly until `PERSONALTY= AUTO*` appears.
- 4 Press **On Line** to return the printer online. *The printer returns online and `ⓄⓄ READY` appears on the display.*

If you use laserjetIIISi or laserjetIIIsi as the interface script, set PERSONALTY= to PCL.

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

---

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

The BSD spooler requires each printer to have an entry in `/etc/printcap` file, which specifies the printer's capabilities. Examples of HP LaserJet 4Si printcap entries are listed below and can be used as guidelines. Use your system's utility to configure the HP LaserJet 4Si printer to the LPR Spooler.

---

**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 4Si printer configured for PCL or PostScript.

---

### Example One

```
#HP LaserJet 4Si 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 4Si 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-errs:''
```

### Example Three

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

```
hplj4si:\
:lp=/dev/bpp0:\
:sh:\
:ff=<esc>E<esc>&k3G<esc>&a10L<esc>&k10H:\
:sd=/var/spool/printers/hplj4si:\
:lf=/var/spool/printers/hplj4si/log:
```



---

## Setting Up Language Switching on BSD-Based Systems

The HP LaserJet 4Si printer can be configured to switch between the PCL and PostScript printing languages. (Printer language switching is also explained in chapter 5 of the *HP LaserJet 4Si Printer User's Reference Manual*.)

Setting up system language switching consists of the following procedures:

- Creating an executable file to switch into PCL.
- Creating an executable file to switch into PostScript.
- Adding a printcap entry for the printer using the PCL executable file created in the previous steps as the input (if) filter.
- Adding a printcap entry for the printer using the PostScript executable file created in the previous steps as the input (if) filter.

With 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 4Si printer. The following instructions allows you to produce alternate PCL and PostScript jobs from multiple users.

---

**Note**

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

---

## To Configure the Printer for Language Switching

Ensure that `PERSONALTY=` is set to `AUTO` for language switching.

- 1 Press **On Line**, if necessary, to take the printer offline.
- 2 Press **Menu** repeatedly until `JOB MENU` appears.
- 3 Press **Item** repeatedly until `PERSONALTY= AUTO#` appears.
- 4 Press **On Line** to return the printer online. *The printer returns online and `ⓄⓄ READY` appears on the display.*

### Creating Executable Files to Perform Language Switching

Setting up language switching consists of creating executable files to perform the switching. Create two executable files which contains the following lines:

#### To Switch to PCL

```
#!/bin/sh
echo "<esc>%-12345X@PJL ENTER LANGUAGE=PCL"
cat -
```

#### To Swith to PostScript

```
#!/bin/sh
echo "<esc>%-12345X@PJL ENTER LANGUAGE=POSTSCRIPT"
cat -
```

---

**Note**

Specify these executable files as the files in two `:if` commands in the `printcap` entries.



---

A

---

**Defining a Print Device  
for Novell Netware**



## Overview

Hewlett-Packard recommends using the print device HPLJ4Si.PDF which is located on the DOS driver disk which shipped with your HP LaserJet 4Si printer. If you want to create customized .PDF files, you can define and configure a new print device for language switching by completing 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 4Si and press **Enter**. The “Defined Print Devices” screen reappears, and HP LaserJet 4Si is highlighted.

### To Define Functions for the PCL Print Device

- 1 Select **HP LaserJet 4Si** and press **Enter**. The “Edit Device Options” menu appears.
- 2 Select **Device functions** and press **Enter**. The “HP LaserJet 4Si 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 term **Yes** and press **Enter** to save the newly defined function. The “HP LaserJet 4Si Functions” list reappears.
- 7 Repeat steps 3 through 6 until all of the functions in table A-1 are entered.

**To Define a PCL Print Device****Table A-1****Name and Escape Sequence**

Name	Escape Sequence
PJL-Enter PCL	@PJL<SP>ENTER<SP>LANGUAGE=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 in this document, 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 4Si 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 4Si Functions" list appears.*
- 5 Select the **Universal Exit Language** item (<ESC>%-12345X) and press **Enter**.
- 6 Press **Esc**. *The "HP LaserJet 4Si Modes" list appears.*

### To Define a PCL Print Device

#### 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 4Si 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 4Si 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 4Si** and press **Enter**. *The “Defined Print Devices” screen reappears, and HP LaserJet 4Si 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 4Si** and press **Enter**. *The “Edit Device Options” menu appears.*
- 2 Select **Device functions** and press **Enter**. *The “HP LaserJet 4Si 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 4Si 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=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 in this document, 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 *PCL5 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 4Si 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 4Si Functions" list appears.*
- 5 Select the **Universal Exit Language** item (<ESC>%-12345X) and press **Enter**.
- 6 Press **Esc**. *The "HP LaserJet 4Si Modes" list appears.*

**To Define a LaserJet PostScript Print Device**

**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 4Si 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 4Si 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 4Si and press **Enter**. *The “Defined Print Devices” screen reappears, and HP LaserJet 4Si 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 4Si** and press **Enter**. *The “Edit Device Options” menu appears.*
- 2 Select **Device functions** and press **Enter**. *The “HP LaserJet 4Si 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 4Si 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 4Si 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 4Si Functions” list appears.*
- 5 Select the **Universal Exit Language** item (<ESC>%-12345X) and press **Enter**.
- 6 Press **Esc**. *The “HP LaserJet 4Si 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 4Si Functions" list appears.
- 4 Select the **Universal Exit Language** function. Press **Enter**.
- 5 Press **Esc** to return to the "HP LaserJet 4Si Modes" list.

Table A-4

---

#### Name and Escape Sequences

---

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

### To Save the Device Definitions

To save the device definitions, follow these steps:

- 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.*

Refer to chapter 1 to complete the configuration process.

---

**B**

---

**Language Switching Options  
for Novell Netware**

---

## Overview

This appendix provides information on enabling users to print to two logical printers, and the different printer language options that can be used with Novell NetWare networks. These options include job offset and banner pages for PCL and PostScript.

Three areas affect the language switching configuration. The printer control panel contains the PostScript Job Offset, System Switch, and System Language settings. The PRINTDEF utility allows you to define print devices that control network printing. Finally, the PRINTCON utility allows you to configure the output for each print job.

---

## Configuring the Printer

Three printer settings can vary depending on the configuration you define. For language switching, Hewlett-Packard recommends that system language (PERSONALTY=) 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
PERSONALTY	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 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 NET command, such as NET3, NET4, or NET5.

- 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=PCL<LF>
PJL-Enter PS	@PJL<SP>ENTER<SP>LANGUAGE=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 (Re-initialize)	Universal Exit Language Universal Exit Language

## 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 HPLJ4Si.PDF
PRINTCON (for PCL jobs)	Set: Device=HP LaserJet 4Si Mode=SWITCH_TO_PCL Banner-Optional
PRINTCON (For PostScript jobs)	Set: Device=HP LaserJet 4Si 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 "HPLJ4Si.PDF"
PRINTCON (for all jobs)	Set: Device=HP LaserJet 4Si 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 "HPLJ4Si.PDF"
PRINTCON	Set: Device HP LaserJet 4Si Mode=SWITCH_TO_PS Banner=NO

**PCL-Only Example**

This configuration does allow PCL banner pages.

**Table B-7**

---

**PCL-Only Configuration Example**

---

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

**NOTES**

NOTES