



UNIX Printing Software

Administration and Installation Guide

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Table of Contents

Preface: About this Guide P-1

Intended Audience	P-1
What You Need to Know	P-2
How to Use This Guide	P-2
Conventions	P-3
Customer Support	P-4
Your Genicom Vendor	P-4
The Internet	P-4
Genicom Technical Support	P-4
Acronyms & Commands	P-5

Chapter 1 Installing and Configuring UNIX Printing Software on a Compaq Tru64 UNIX System 1-1

lpr and lp	1-2
Installation Prerequisites	1-3
Super User Privileges	1-4
Create a Temporary Directory	1-4
Mount the CD-ROM on a Compaq Tru64 UNIX System	1-4
Unarchiving .tar Files	1-5
Unarchiving the Master .tar File	1-6
Unarchiving a .tar File Kit	1-6
Installing UNIX Printing Software on a Compaq Tru64 UNIX System	1-7
Deinstalling UNIX Printing Software	1-8
Configuring Unix Printing Software on a Compaq Tru64 UNIX System	1-8
Creating Print Queues for a Compaq Tru64 UNIX System	1-9
Using a Banner Page	1-13
Configuring a Banner Page	1-13
Displaying Banner Options Using the lpspr Command	1-14
Maintaining Banner Information in the printer2mdl File	1-16

Chapter 2 Installing and Configuring UNIX Printing Software on a HP/UX System2-1

lpr and lp	2-2
Installation Prerequisites	2-3
Super User Privileges	2-3
Create a Temporary Directory	2-4
Mount the CD-ROM on an HP/UX System	2-4
Unarchiving .tar Files	2-5
Unarchiving the Master .tar File	2-6
Unarchiving a .tar File Kit	2-6

Contents

Installing UNIX Printing Software on an HP/UX System	2-8
Deinstalling UNIX Printing Software	2-9
Configuring UNIX Printing Software on a HP/UX System	2-9
Creating Print Queues for an HP/UX System	2-10
Using a Banner Page	2-14
Configuring a Banner Page	2-14
Displaying Banner Options Using the lpspr Command	2-15
Maintaining Banner Information in the printer2mdl File	2-17
Chapter 3 Installing and Configuring UNIX Printing Software on an IBM/AIX System	3-1
lpr and lp	3-2
Installation Prerequisites	3-3
Super User Privileges	3-3
Create a Temporary Directory	3-4
Mount the CD-ROM on an IBM/AIX System	3-4
Mount the CD-ROM on an IBM/AIX System Using SMIT	3-6
Unarchiving .tar Files	3-7
Unarchiving the Master .tar File	3-7
Unarchiving a .tar File Kit	3-7
Installing UNIX Printing Software on an IBM/AIX System	3-9
Deinstalling UNIX Printing Software	3-10
Configuring UNIX Printing Software on an IBM/AIX System	3-10
Creating a Print Queue for an IBM/AIX System	3-11
Using a Banner Page	3-12
Configuring a Banner Page	3-12
Displaying Banner Options Using the lpspr Command	3-13
Maintaining Banner Information in the printer2mdl File	3-15
Chapter 4 Installing and Configuring UNIX Printing Software on a Linux System	4-1
lpr and lp	4-2
Installation Prerequisites	4-3
Super User Privileges	4-4
Create a Temporary Directory	4-4
Mount the CD-ROM on a LINUX (Alpha or INTEL) System	4-4
Unarchiving .tar Files	4-5
Unarchiving the Master .tar File	4-5
Unarchiving a .tar File Kit	4-5
Installing UNIX Printing Software on a Linux (Alpha or Intel) System	4-7
Deinstalling UNIX Printing Software	4-7
Configuring UNIX Printing Software on a LINUX System	4-8
Creating a Print Queue for a LINUX (Alpha or Intel) System	4-8
Using a Banner Page	4-11
Configuring a Banner Page	4-11
Displaying Banner Options Using the lpspr Command	4-12
Maintaining Banner Information in the printer2mdl File	4-14
Chapter 5 Installing and Configuring UNIX Printing Software on a Sun Solaris System	5-1
lpr and lp	5-2
Installation Prerequisites	5-4
Super User Privileges	5-4

Create a Temporary Directory	5-4
Mount the CD-ROM on a SUN Solaris System	5-5
Unarchiving .tar Files	5-5
Unarchiving the Master .tar File	5-6
Unarchiving a .tar File Kit	5-6
Installing UNIX Printing Software on a SUN Solaris System	5-7
Deinstalling UNIX Printing Software	5-8
Configuring UNIX Printing Software on a SUN Solaris System	5-8
Creating a Print Queue for a SUN Solaris System	5-9
Using a Banner Page	5-12
Configuring a Banner Page	5-12
Displaying Banner Options Using the lpspr Command	5-13
Maintaining Banner Information in the printer2mdl File	5-15
Chapter 6 Running the Software	6-1
About xlpssprint and lpspr	6-1
Model-to-ppd File (mdl2ppd)	6-2
Printer to Model Map File (printer2mdl)	6-2
lpsprodb File	6-3
xlpssprint Command	6-4
Displaying xlpssprint	6-5
Selecting a Printer	6-5
Selecting a File to Print from xlpssprint	6-6
Printer Dependent Options	6-7
Printing a File from xlpssprint	6-7
lpspr Command	6-8
Input File Data Types	6-8
Defining Data Types	6-8
lpspr Command Option Flags	6-8
Displaying Printer Options	6-10
Displaying a Model List	6-10
Printing Examples	6-10
sdriver	6-11
sdriver General Information	6-11
Using sdriver in Stand-alone Mode	6-11
Using sdriver in Spooler Back-end Mode	6-11

Preface

About this Guide

This guide describes the installation and configuration procedures necessary for running UNIX Printing Software on the following platforms:

- Compaq Tru64 System
- HP/UX System
- IBM/AIX System
- Linux System (Alpha or Intel)
- Sun Solaris

In addition to providing you with installation instructions for each of the above UNIX Platforms, This guide also provides instructions on how to create print queues, and how to prepare the output of a print job (e.g., selecting a printer, determining page size, duplex options, and banner page options).

Intended Audience

The UNIX Printing Software Installation and Configuration Guide is intended for system administrators and other qualified service personnel that have a working knowledge of the various UNIX systems described in this guide.



You must have Super User (Root) privileges in order to accomplish many of the tasks described in this Guide.

What You Need to Know

A working knowledge of the UNIX platform(s) on which you will be installing, configuring, and using UNIX Printing Software is necessary for executing commands on the command line interface or for setting up printer information on the graphical user interface for UNIX Printing Software.

How to Use This Guide

There are seven chapters in the UNIX Printing Solution Installation and Configuration Guide: a Preface chapter, and six other chapters, respectively numbered 1 through 6. Chapters 1 through 5 provide individual instructions on how to install and configure UNIX Printing Software for each separate UNIX system. Chapter 6 is an overall description on how to run UNIX Printing Software.

Once you complete reading the Preface, go to the chapter in this guide that describes the operating system on which you will be installing and running the software. Once you complete the installation and configuration phase, refer to the final chapter in this guide for instructions on how to use the software.

A description of each chapter found in this guide is as follows:

Table P-1. How to Use this Guide

Read	To Learn About
Preface	The general requirements necessary for operating UNIX Printing Software. In addition, this chapter provides a description of the chapter contents and style conventions found in the UNIX Printing Software Guide.
Chapter 1	The installation and configuration procedures necessary for running UNIX Printing Software on a Tru64 System.
Chapter 2	The installation and configuration procedures necessary for running UNIX Printing Software on an HP/UX System.
Chapter 3	The installation and configuration procedures necessary for running UNIX Printing Software on an IBM/AIX System.
Chapter 4	The installation and configuration procedures necessary for running UNIX Printing Software on a Linux (Alpha or Intel) System.
Chapter 5	The installation and configuration procedures necessary for running UNIX Printing Software on a Sun Solaris System.

Table P-1. How to Use this Guide

Read	To Learn About
Chapter 6	The two commands (i.e., <code>xlpsprint</code> and <code>lpspr</code>) that let you run the software. Use <code>xlpsprint</code> to invoke the graphical user interface for UNIX Printing Software or <code>lpspr</code> to bring you into the command line interface for installing and configuring UNIX Printing Software.

Conventions

This guide uses the following conventions to emphasize certain information, such as user input and system output.

Table P-2. Conventions

Convention	Indicates	Example
Courier Bold	User Input	Show Clock
Courier	System Output	Please Wait...
Boxes surrounding text	Notes	Refer to the example below.



NOTES provides additional information or helpful suggestions that may apply to the subject text.

Customer Support

GENICOM offers several sources of help and information. These include:

- Your GENICOM Vendor
- The Internet
- GENICOM Technical Support

Your GENICOM Vendor

Your local GENICOM vendor from whom you purchased this product may be best equipped to help you. Your vendor has specially trained service technicians available to answer questions and the equipment to analyze your problems.

The Internet

The GENICOM website provides access to technical reports, new product announcements, a trade show schedule and other general information about GENICOM. You can access the GENICOM website through any one of the many world-wide web browsers at <http://www.GENICOM.com/showroom>. From the 'showroom', go to Enterprise Printers.

GENICOM Technical Support

GENICOM Technical Support is available Monday through Friday, 8:00 am - 8:00 pm, Eastern time. The telephone number is (540) 949-1031 (U.S.). You can also fax questions to (540) 949-1505 (U.S.). Please indicate whether you would like a faxed or a phoned reply.

When calling GENICOM for assistance, please have the following information readily available:

- Your phone number, fax number and shipping address.
- A description of the problem.
- Your RCS Version #. This number is available from the RCS Main Window, by opening the Help pull-down Menu, and selecting About Remote Control Software.
- The serial number of a GENICOM printer you are trying to manage.

Acronyms & Commands

This section contains a general list of acronyms and commands found throughout this guide.

Table P-3. Acronyms & Commands

Acronym/Command	Definition
CLI	Command Line Interface
GUI	Graphical User Interface. To display the GUI for UNIX Printing Software, enter xlpssprint at the command line.
IP	Internet Protocol
lpadmin	A command that lets you create print queues for HP/UX systems and SUN Solaris systems. This command will only work if lpsched has been stopped.
lpr	A command spawned by xlpssprint and lpspr. It is a user interface into a BSD printing subsystem that sends files to a spooler daemon for printing.
lprcom	A program file that sends flags to the spooler daemon for printing. It has a default path of /usr/bin/lpr. You can accept the default path by pressing RETURN, or you can provide a new one at the command line.
lprflag	An LPRCOM flag that is usually followed by the print queue name. The flag that you select for LPRFLAG will depend upon your UNIX Printing Subsystem.
lpshut	A command that shuts down lpsched (i.e., line printer scheduler). You must run this command on a HP/UX system or a Sun Solaris system prior to running lpadmin. If you do not shut down the line print scheduler, the lpadmin process will not work. However, once the lpadmin command process completes, the lpsched command must be reinstated.
lpspr	This command provides the same functionality as xlpssprint, with the exception that all tasks must be accomplished through a command line interface.
lpsprodb	A system file that you can modify to reflect your current printing needs (e.g., paper length, page width). This file also contains paths that point to all of the files used by lpspr and xlpssprint.
lp	A command spawned by xlpssprint. It is a user interface into a System V-based printing subsystem that sends files to a spooler daemon for printing.

Table P-3. Acronyms & Commands

Acronym/Command	Definition
mdl2ppd	Model-to-PPD File. A system file made up of a number of lines with two items on each line. The first item is the printer model name. The second item is the name of its corresponding ppd file. You must update this file whenever a new printer is added to the system.
printer2mdl	<p>Printer to Model File. A system file made up of a number of lines with three items on each line. The first item is the print queue name. All print queues that are added to this file must point to printers with ppd files. In addition, you must want to have access to the printers via xlpssprint.</p> <p>The second item is the model name associated with the print queue. The model name is used as a key to search the mdl2ppd file.</p> <p>The third item is the banner page option. UNIX Printing Software gives you the option of including or excluding banner pages to precede your print jobs.</p>
sdriver	A UNIX print filter that drives printers that can support raw TCP/IP sockets. It will establish a network connection to the printer or print server in either a stand-alone mode or a back-end mode, by receiving information that you provide in flags at execution time.
su	Super User. Use this command to assign super user privileges to a user's account.
xlpssprint	A graphical user interface that lets you select printer features and send files to a particular print queue.

Installing and Configuring UNIX Printing Software on a Compaq Tru64 UNIX System

This chapter contains information for installing and configuring UNIX Printing Software on a Compaq Tru64 UNIX system.

Topics in this chapter include:

- “lpr and lp” on page 1-2
- “Installation Prerequisites” on page 1-3
- “Installing UNIX Printing Software on a Compaq Tru64 UNIX System” on page 1-7
- “Deinstalling UNIX Printing Software” on page 1-8
- “Configuring Unix Printing Software on a Compaq Tru64 UNIX System” on page 1-8
- “Using a Banner Page on page 1-13

lpr and lp

lpr and **lp** are two separate commands that are used by **xlpsprint** and **lpshr** for sending files to a spooler daemon for printing. The **lpr** command is used for BSD-based printing, and the **lp** command is used for System V-based printing.



xlpsprint is a graphical user interface that lets you select printer features and send files to a particular print queue. Refer to Chapter 6 for more information about **xlpsprint**.

lpr and **lp** are the user interfaces into BSD and SYSTEM V spooling subsystems, respectively. Although **lpr** and **lp** both use a spooler daemon to queue files for printing, the process for sending the files to a printer differs. Another difference between the two subsystems is in the command syntax that you enter at the command line. A description of each command entry is as follows:

- BSD-based Printing

Users using UNIX systems that are based on the BSD derivative must enter the **lpr** command at the command line to send files to the spooler daemon for printing.

```
# lpr -Pprinter filename
```

where **printer** is the name of the print queue from `/etc/printcap`.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lpr -PHallway_40 Test1.txt
```

The **-P** flag identifies the name of the print queue.

- System V-based Printing

Users Using UNIX systems that are based on the SYSTEM V derivative must enter the **lp** command at the command line to send files to the spooler daemon for printing.

```
# lp -dprinter filename
```

where **printer** is the name of the print queue created by the system administrator using **lpadmin**, **SMIT** or another System V related utility.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lp -dCopyroom_40 Test2.txt
```

The **-d** flag indicates the print queue name for the print job.



The installation script `lpspr_install` prompts you to select a path for **LPRCOM** and a flag for **LPRFLAG**.

LPRCOM is a program file that sends flags to the spooler daemon for printing. It has a default path of `/usr/bin/lpr`. You can accept the default path by pressing **RETURN**, or you can provide a new one at the command line.

LPRFLAG is an **LPRCOM** flag that is usually followed by the print queue name. The flag that you select for **LPRFLAG** will depend upon your UNIX printing subsystem. If it is a BSD-derivative, press **RETURN** to select the default flag `-P`. However, if the subsystem is a SYSTEM V derivative, you must change the default flag to `-d`.

Installation Prerequisites

There are several prerequisite tasks that you must complete before you can install the software. A description of each one is as follows:

1. You must be a Super User (Root) in order to install UNIX Printing Software. Refer to the section, “[Super User Privileges](#)” on page 1-4 to learn more about this topic.
2. You must make a temporary directory for the software kit. Refer to the section, “[Create a Temporary Directory](#)” on page 1-4 to learn more about this topic.
3. You are going to need to untar the Tar file once the software kit is in its temporary directory. Refer to the section, “[Unarchiving .tar Files](#)” on page 1-5 to learn more about this topic.
4. With the Tar File unarchived, you can run the `lpspr_install` command. Refer to the section within this chapter that is specific to your UNIX system.
5. You should have a basic understanding about UNIX printing subsystems and the types of commands that they require.

Super User Privileges

To be a Super User (root), follow the instructions below:

1. Type **su** at the command line. Press **RETURN**.

You will be prompted for the super user password. If you do not know the super user password, contact your system administrator.

2. Enter the super user password. Press **RETURN**.

Create a Temporary Directory

You must make a temporary directory for the UNIX Printing Software kit. Instructions are as follows:



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges”** on page 1-4 for instructions on how to become a super user.

1. Enter the following command at the command line. Press **RETURN**.
`# mkdir /tmp/install`
2. Enter the following command at the command line. Press **RETURN**.
`# cd /tmp/install`
3. Your next step is to mount the CD-ROM. Refer to the next section, Mount the CD-ROM for instructions on how to accomplish this task.

Mount the CD-ROM on a Compaq Tru64 UNIX System

Instructions on how to mount the CD-ROM on a Compaq Tru64 UNIX System are as follows:



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges”** on page 1-4 for instructions on how to become a super user.

1. Create a directory to serve as the mounting point for the CD-ROM.
Refer to the section Creating a Temporary Directory for instructions on how to complete this task.
2. Enter the following command at the command line:


```
# mount -r -t cdfs -o noversion -v /dev/rz4c /mycdrom
```

where **-r** is read only.

where **-t** is the file type

where **cdfs** is the CD-ROM file system.

where **-o noversion** invokes the skip version process.

where **-v** selects the device drive.

where **/dev/rz4c** is the CD-ROM device file.

where **/mycdrom** identifies the mounting point for the CD-ROM.

3. Once the command successfully executes, you can refer to the device by the mount point, e.g., mycdrom.



Once the software kit is in its temporary directory, you will need to untar the tar File. Refer to the section, “[Unarchiving .tar Files](#)” on [page 1-5](#) of this guide.

Unarchiving .tar Files

There is a master .tar file (i.e., **unprswxx.tar**) within your software kit that must be unarchived. Inside the master .tar file is a set of individual .tar files that must also be unarchived, as necessary, for each of the UNIX operating systems.

The .tar files maintained by **unprswxx.tar** include:

where **xx** is the version of the software kit.

- a **dunix.tar** for use with Compaq Tru64 UNIX systems.
- an **hp9000_778.tar** for use with HP/UX systems.
- **linuxa.tar** for use on a Alpha-based Linux system
- **linuxi.tar** for use on an Intel-based Linux system.
- an **rs6000.tar** for use with IBM/AIX systems.
- a **sun4u.tar** for use on SUN Solaris systems.



Before unarchiving a .tar file, make sure that you are located in the temporary directory into which you want to install the kit.

Unarchiving the Master .tar File

To unarchive the master .tar file, enter the following command at the command line:

```
# tar xvf unprswxx.tar
```

Refer to the section, “[Viewing tar File Contents](#)” on page 1-6 to find out how to display the contents of this file.

Unarchiving a .tar File Kit

To unarchive one of the .tar files that was maintained by the master .tar file, enter the following command at the command line:

```
# tar xvf filename.tar
```

where **filename** identifies the software kit for your UNIX operating system.

Refer to the section, [Viewing tar File Contents](#) to find out how to display the contents of this file.

Viewing tar File Contents

To view the contents of the newly unarchived tar file, enter the following command at the command line:

```
# ls -l
```

You should see the following directories and files in your kit:

Directories

- exe
- lib
- man1
- ppd

Files:

- XLpsprint1
- lpspr_install
- lpsprodb.ini
- make_model
- lpspr_deinstall

Installing UNIX Printing Software on a Compaq Tru64 UNIX System

Instructions for installing UNIX Printing Software on a Compaq Tru64 UNIX System are as follows:

1. Enter the following command at the command line. Press **RETURN**.

```
# ./lpspr_install
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]:
```

LPSROOT is an upper level directory structure under which the rest of the code will be installed.

2. Press **RETURN** to accept the default, or enter another pathname to be used by LPSROOT.

Another prompt appears:

```
Select LPRCOM [/usr/bin/lpr]:
```

3. Press **RETURN** to accept the default. Another prompt appears:

```
Select LPRFLAG [-P]
```

4. Press **RETURN** to accept the default. The following message appears:

```
Installation is Successful
```



If the installation is unsuccessful, you must uninstall the existing software, before you can reinstall it. Refer to the section, “**Deinstalling UNIX Printing Software**” on page 1-8 for instructions on how to accomplish this task.

Deinstalling UNIX Printing Software

If `lpspr_install` does not successfully copy all of the files within the kit, you must delete the existing files from the system before reinstalling the software. The `lpspr_deinstall` command will remove the directory structure for all existing files for `lpspr`, `xlpsprint` and `sdriver`.

You can use this deinstall command on any of the UNIX systems.

1. From the command line, enter the following command:

```
# ./lpspr_deinstall
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]
```

LPSROOT is an upper level directory structure under which rest of the installation code is installed.

2. Press **RETURN** if the default is OK. Otherwise, enter a new path.

The following message appears:

```
Deinstallation successful
```

Configuring Unix Printing Software on a Compaq Tru64 UNIX System

This section contains instructions on how to configure UNIX Printing Software on a Compaq Tru64 UNIX System.

Configuration topics include:

- how to create print queues
- how to print banner pages



You must be a Super User (Root) in order to perform any of the configuration tasks described in this chapter. Refer to the section, “**Super User Privileges**” on [page 1-4](#) for instructions on how to accomplish this task.

Creating Print Queues for a Compaq Tru64 UNIX System

Each print queue within a UNIX system corresponds to an internet address of a particular printer. You establish this association during the creation of the print queue. When configuring and/or running `sdriver`, the printer's IP address is included after the `-I` switch. Alternatively, the print queue name is included after the `-P` switch when using `sdriver`. In addition, the print queue is also the first item to appear on each line of the printer-to-model file (`printer2mdl`).

To create a print queue for a Compaq Tru64 UNIX System, follow the instructions below:

1. Enter the following command at the command line:

```
# /usr/sbin lprsetup
```

The following prompt appears:

```
<add modify delete exit view quit help>:
```

2. Type **add**. Press **RETURN**.

The following prompt appears:

```
Enter printer name to add [20]:
```

Note: LPRsetup automatically assigns a sequential name to the printer.

3. Enter the type of print queue that you are creating. For example, LP20. Press **RETURN**.

A listing of queue types, along with the following prompt appears:

```
Enter the FULL name of one of the following printer
types, or press RETURN for [unknown]:
```

4. Press **RETURN** for 'unknown'.

The following prompt appears:

```
Using 'unknown' for printer type, OK? [n]:
```

5. Press **y** followed by the **RETURN** key.

The following prompt appears:

```
Enter printer synonym:
```

Note: The printer synonym is an optional, additional name that can help you to identify the printer.

6. Enter a printer synonym, or skip to the next step. Press **RETURN**.

The following prompt appears:

Set device pathname:

7. Enter the following pathname:

/dev/null

The following prompt appears:

Do you want to capture print job accounting data
([y][n]):

Note: To capture logging, you must use the **-L** flag on the sdriver command line within **/etc/printcap**. sdriver will write events to the AF entry that you specify.

8. Enter **y** to capture print event information, or **n** to continue creating a print queue. Press **RETURN**.

If you answered **y** to capture print event information, the following prompt appears:

Set accounting file 'af' [/usr/admin/lp20acct]

9. Enter a path for the log file, or accept the default. Press **RETURN**.

The following prompt appears:

Set spooler directory 'sd' [/usr/spool/lp20]

10. Press **RETURN** to accept the default directory. (*Recommended choice*).

The following prompt appears:

Set printer error log file 'lf' [/usr/admin/lp20err]:

Note: An 'lf' entry is either an error or event written out by lpd (spooler).

11. Press **RETURN** to accept the default directory. (*Recommended choice*).

The following printcap information appears:

Enter the name of the printcap symbol you wish to modify. Other valid entries are:

'q' to quit (no more changes)

'p' to print symbols you have specified so far

'l' to list all of the possible symbols and defaults

The name of the printcap symbols are:

af br cf ct df dn du fc ff fo fs gf ic if lf lo

lp mc mx nc nf of op os pl pp ps pw px py rf rm

rp rs rw sb sc sd s sh st tf tr ts uv vr xc xf

```
xs ya yd yj yp ys yt Da Dl It Lf Lu MI Nu Or Ot
Ps Sd Si Ss Ul Xf
```

12. Enter the symbol: **if**. Press **RETURN**.

13. Enter the following command. Press **RETURN**.

```
# /usr/sbin/sdriver -F [-Ixxx.xxx.xxx.xxx | -Pqueue] -pyyyy
[-L -d]
```

- where **xxx.xxx.xxx.xxx** is the IP address of the printer to which this queue will send jobs.
- Printer name is the name of the printer as defined in **/etc/hosts** or **yp** or **DNS**.

Example:

```
/usr/sbin/sdriver -F -I10.10.114.40 -p6869 -L -d
```

Note: The socket number used will vary from printer to printer. The release notes for this product contains a list of socket numbers for supported printers.

The following prompt appears:

```
Enter symbol name: mx
```

Note: MX identifies the maximum number of bytes allowed to the spooler and to the printer.

14. Enter **0** to allow unlimited bytes. Press **RETURN**.

The following prompt appears:

```
Is this correct [y]:
```

15. Enter **y** if the new information is correct.

16. The following prompt appears:

```
Enter symbol name:
```

17. Press **q** to quit **lprsetup**.

The following prompt appears:

```
Are these the final values for printer 20? [y]
```

18. Enter **y** if the values for printer 20 are final.

The following prompt appears:

```
Do you want to add comments to the printcap file [n]:
```

19. Press **n** followed by the **RETURN** key.

20. Type **EXIT** at the command line.

Updating the Printcap File

The final step in configuring a Compaq Tru64 UNIX print queue is to remove the OF entry from the printcap file. Instructions are as follows:

1. Enter the following path at the command line:

```
# vi /etc/printcap
```
2. Enter a forward slash followed by the name of the printer at the command line.

```
# /printer20
```
3. Scroll down to the line containing the OF entry. Press the lower case 'd' key twice.
4. Enter **:wq** at the command line.

Using a Banner Page

A banner page is a lead sheet that can precede a print job. It contains useful information that lets other users who are printing from the same print queue, determine the ownership of a print job. A banner page is also useful for dividing print jobs, in the event that multiple print jobs are in the output tray.

A banner page contains the following information:

- the login name of the user responsible for printing the print job.
- the hostname of the computer from where the print job has originated.
- the file name of the job that is printing. If the user is printing a book file, or another type of file from where multiple documents are queued to print simultaneously, only the name of the first file in the book will appear on the banner page.
- the UNIX system group of the user who printed the print job.
- The time that the print job was submitted to the print queue.
- The print queue name.

Configuring a Banner Page

Including a banner as part of your print job is optional. However, if you elect to include them as part of your print job, you have the option of printing them from the same input tray as the actual print jobs, or from one that is specifically designated for the banners.

Tip:

One way to help distinguish between banner pages and the actual print jobs is to have the banner pages print from a paper tray containing colored paper.

Banner Page Options

A print queue has three options for banner pages. They are:

- **NoBanner**
Select the “NoBanner” option if you do not want banners to precede your print jobs.
- **Default**
Select the “Default” option if you want the banner page to print from the printer’s default paper tray.

- A specific Input Tray for the banner
Select the “Input Tray for the banner” option if you want to print the banner pages in tray that is separate from the tray used by the actual print jobs.

Displaying Banner Options Using the `lpspr` Command

The `lpspr` command lets you view the Printer Dependent Options, including the banner options of a specific printer through the command line interface.

This section describes how to use `lpspr` in its informational mode. To display banner options for a particular printer model, enter the following command at the command line:

Example:

```
% lpspr -W -P xyz
```

where % is the system prompt

where `lpspr` is functioning in an informational mode.

where `-W` will display all of the available options (including banner options) for the printer model.

where `-P` identifies the print queue.



To learn more about how `lpspr` works, refer to Chapter 6, `lpspr` Command.

The following illustrates a typical display of Printer Dependent Options for a printer.



Not all printer dependent options will be available for all printer models.

```
[ -Rresolution ] ::  
  1.) 300dpi  
  2.) 600dpi  
  
[ -Itray ] ::  
  1.) upper  
  2.) middle  
  3.) lower  
  4.) optional  
  
[ -Ssize ] ::  
  1.) letter  
  2.) legal  
  3.) executive  
  4.) 11x17  
  5.) a3  
  6.) a4  
  7.) a5  
  8.) b4  
  9.) b5  
 10.) b4iso  
 11.) b5iso  
 12.) statement  
  
[ -Ksides ] ::  
  1.) none  
  2.) duplexnotumble  
  3.) duplextumble
```



The options listed under the `-Itray` let you print the banner page from a specific tray. You may also use the default tray, or the NoBanner option, if either one is more appropriate for your environment. The tray option that you select for the banners is placed in the `printer2mdl` file as described in the section, *Maintaining Banner Page Information in the printer2mdl file*.

Maintaining Banner Information in the printer2mdl File

The **printer2mdl** map file maintains a list of all the print queues, printer model names, and banner page options associated with a specific computer system.



The **printer2mdl** map file found in your installation kit is to be used as an example only. It is your responsibility to generate a new version of this file, and to place it in the /etc directory.

To find out more about the printer2mdl file, refer to Chapter 6, “**Printer to Model Map File (printer2mdl)**” on page 6-2

The following is an example of a **printer2mdl** map file:

```
# 'print-queue-name'      'model-name'      'banner-page-selection'

Hallway_Printer2         Printer_2         Middle
Copyroom_Printer3        Printer_3         NoBanner
Reception_Printer1        Printer_1         Default
Engineering_Printer4      Printer_4         NoBanner
```

- where Hallway_Printer2, Copyroom_Printer3, Reception_Printer1 and Engineering_Printer4 all identify the names of the individual print queues on your computer system.
- where Printer_2, Printer_3, Printer_1 and Printer_4 all identify the name of the printer models associated with each, individual print queue.
- where Middle, NoBanner, Default and NoBanner each identify the banner options set for each print queue.

Installing and Configuring UNIX Printing Software on a HP/UX System

This chapter contains information for installing and configuring UNIX Printing Software on an HP/UX system.

Topics in this chapter include:

- “lpr and lp” on page 2-2
- “Installation Prerequisites” on page 2-3
- “Installing UNIX Printing Software on an HP/UX System” on page 2-8
- “Deinstalling UNIX Printing Software” on page 2-9
- “Configuring UNIX Printing Software on a HP/UX System” on page 2-9

lpr and lp

lpr and **lp** are two separate commands that are used by **xlpssprint** and **lpsspr** for sending files to a spooler daemon for printing. The **lpr** command is used for BSD-based printing, and the **lp** command is used for System V-based printing.



xlpssprint is a graphical user interface that lets you select printer features and send files to a particular print queue. Refer to Chapter 6 for more information about **xlpssprint**.

lpr and **lp** are the user interfaces into BSD and SYSTEM V spooling subsystems, respectively. Although **lpr** and **lp** both use a spooler daemon to queue files for printing, the process for sending the files to a printer differs. Another difference between the two subsystems is in the command syntax that you enter at the command line. A description of each command entry is as follows:

- **BSD-based Printing**

Users using UNIX systems that are based on the BSD derivative must enter the **lpr** command at the command line to send files to the spooler daemon for printing.

```
# lpr -Pprint_queue filename
```

where **printer** is the name of the print queue from `/etc/printcap`.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lpr -PHallway_40 Test1.txt
```

The **-P** flag identifies the name of the print queue.

- **System V-based Printing**

Users Using UNIX systems that are based on the SYSTEM V derivative must enter the **lp** command at the command line to send files to the spooler daemon for printing.

```
# lp -dprinter filename
```

where **printer** is the name of the print queue created by the system administrator using **lpadmin**, **SMIT** or another System V related utility.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lp -dCopyroom_40 Test2.txt
```

The **-d** flag indicates the print queue name for the print job.



The installation script `lpspr_install` prompts you to select a path for **LPRCOM** and a flag for **LPRFLAG**.

LPRCOM is a program file that sends flags to the spooler daemon for printing. It has a default path of `/usr/bin/lpr`. You can accept the default path by pressing **RETURN**, or you can provide a new one at the command line.

LPRFLAG is an **LPRCOM** flag that is usually followed by the print queue name. The flag that you select for **LPRFLAG** will depend upon your UNIX printing subsystem. If it is a BSD-derivative, press **RETURN** to select the default flag **-P**. However, if the subsystem is a SYSTEM V derivative, you must change the default flag to **-d**.

Installation Prerequisites

There are several prerequisite tasks that you must complete before you can install the software. A description of each one is as follows:

1. You must be a Super User (Root) in order to install UNIX Printing Software. Refer to the section, “[Super User Privileges](#)” on page 2-3 to learn more about this topic.
2. You must make a temporary directory for the software kit. Refer to the section, “[Create a Temporary Directory](#)” on page 2-4 to learn more about this topic.
3. You are going to need to untar the Tar file once the software kit is in its temporary directory. Refer to the section, “[Unarchiving .tar Files](#)” on page 2-5 to learn more about this topic.
4. With the Tar File unarchived, you can run the `lpspr_install` command. Refer to the section within this chapter that is specific to your UNIX system.
5. You should have a basic understanding about UNIX printing subsystems and the types of commands that they require.

Super User Privileges

To be a Super User (root), follow the instructions below:

1. Type **su** at the command line. Press **RETURN**.

You will be prompted for the super user password. If you do not know the super user password, contact your system administrator.

2. Enter the super user password. Press **RETURN**.

Create a Temporary Directory

You must make a temporary directory for the UNIX Printing Software kit. Instructions are as follows:



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges” on page 2-3** for instructions on how to become a super user.

1. Enter the following command at the command line. Press **RETURN**.
`# mkdir /tmp/install`
2. Enter the following command at the command line. Press **RETURN**.
`# cd /tmp/install`
3. Your next step is to mount the CD-ROM. Refer to the next section, Mount the CD-ROM for instructions on how to accomplish this task.

Mount the CD-ROM on an HP/UX System

Instructions on how to mount the CD-ROM on an HP/UX System are as follows:



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges” on page 2-3** for instructions on how to become a super user.

1. Create a directory to serve as the mounting point for the CD-ROM.

Refer to the section Creating a Temporary Directory for instructions on how to complete this task.
2. Enter the following command at the command line:
`# mount -F cdfs -r /dev/dsk/c1t7do /mycdrom`

where **-F** identifies the file system type

where **edfs** identifies the CD-ROM file system type

where **-r** is read only

where **/dev/dsk/c1t7do** is the CD-ROM device file.

where `/mycdrom` is the mount point.



Once the software kit is in its temporary directory, you will need to untar the tar File. Refer to the section, “[Unarchiving .tar Files](#)” on page 2-5 of this guide.

Determining an HP/UX Device File Type

If you do not know the device file type of your HP/UX system’s CD-ROM, enter the following command at the command line:

```
# /usr/sbin/ioscan -Fn -C disk
```

A list of available devices for your system will appear. One of the devices should be your CD-ROM.

Determining the File System Type of the CD-ROM

To identify the file system type of your CD-ROM, enter the following command at the command line:

```
# fstyp dev_file
```

where `dev_file` is the device file identified by the `ioscan` command.

Unarchiving .tar Files

There is a master .tar file (i.e., `unprswxx.tar`) within your software kit that must be unarchived. Inside the master .tar file is a set of individual .tar files that must also be unarchived, as necessary, for each of the UNIX operating systems.

The .tar files maintained by `unprswxx.tar` include:

where `xx` is the version of the software kit.

- a `dunix.tar` for use with Compaq Tru64 UNIX systems.
- an `hp9000_778.tar` for use with HP/UX systems.
- `linuxa.tar` for use on a Alpha-based Linux system
- `linuxi.tar` for use on an Intel-based Linux system.
- an `rs6000.tar` for use with IBM/AIX systems.
- a `sun4u.tar` for use on SUN Solaris systems



Before unarchiving a .tar file, make sure that you are located in the temporary directory into which you want to install the kit.

Unarchiving the Master .tar File

To unarchive the master .tar file, enter the following command at the command line:

```
# tar xvf unprswxx.tar
```

Refer to the section, Viewing tar File Contents to find out how to display the contents of this file.

Unarchiving a .tar File Kit

To unarchive one of the .tar files that was maintained by the master .tar file, enter the following command at the command line:

```
# tar xvf filename.tar
```

where **filename** identifies the software kit for your UNIX operating system.

Refer to the section, Viewing tar File Contents to find out how to display the contents of this file.

Viewing tar File Contents

To view the contents of the newly unarchived tar file, enter the following command at the command line:

```
# ls -l
```

You should see the following directories and files in your kit:

Directories

- exe
- lib
- man1
- ppd

Files:

- XLpsprint1
- lpspr_install

- lpsprodb.ini
- make_model
- lpspr_deinstall

Installing UNIX Printing Software on an HP/UX System

Instructions for installing UNIX Printing Software on an HP/UX System are as follows:

1. Enter the following command at the command line. Press **RETURN**.

```
# ./lpspr_install
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]:
```

LPSROOT is an upper level directory structure under which the rest of the code will be installed.

2. Press **RETURN** to accept the default, or enter another pathname to be used by LPSROOT.

Another prompt appears:

```
Select LPRCOM [/usr/bin/lpr]:
```

3. Enter the following new pathname for LPRCOM. Press **RETURN**.

```
/usr/bin/lp
```

Another prompt appears:

```
Select LPRFLAG [-P]
```

4. Enter the following new flag for LPRFLAG:

```
# LPRFLAG [-P]:-d
```

The following message appears:

```
Installation is successful.
```



If the installation is unsuccessful, you must deinstall the existing software, before you can reinstall it. Refer to the section, “**Deinstalling UNIX Printing Software**” on page 2-9 for instructions on how to accomplish this task.

Deinstalling UNIX Printing Software

If `lpspr_install` does not successfully copy all of the files within the kit, you must delete the existing files from the system before reinstalling the software. The `lpspr_deinstall` command will remove the directory structure for all existing files for `lpspr`, `xlpsprint` and `sdriver`.

You can use this deinstall command on any of the UNIX systems.

1. From the command line, enter the following command:

```
# ./lpspr_deinstall
```

The following prompt appears:

```
Select LPSROOT [ /opt/lpspr ]
```

LPSROOT is an upper level directory structure under which rest of the installation code is installed.

2. Press **RETURN** if the default is OK. Otherwise, enter a new path.

The following message appears:

```
Deinstallation successful
```

Configuring UNIX Printing Software on a HP/UX System

This section contains instructions on how to configure UNIX Printing Software on a HP/UX System.

Configuration topics include:

- how to create print queues.
- how to configure `xlpsprint`.
- how to configure `lpspr`.
- how to add new printer models to your system
- how to add banner pages to a print job.



You must be a Super User (Root) in order to perform any of the configuration tasks described in this chapter. Refer to the section, “**Super User Privileges**” on [page 2-3](#) for instructions on how to accomplish this task.

Creating Print Queues for an HP/UX System

Each print queue within a UNIX system corresponds to an internet address of a particular printer. You establish this association during the creation of the print queue. When configuring and/or running `sdriver`, the printer’s IP address is included after the `-I` switch. Alternatively, the printer’s name is included after the `-P` switch when using `sdriver`. In addition, the print queue is also the first item to appear on each line of the printer-to-model file (`printer2mdl`).

There are three commands that you will use to create a print queue for an HP/UX System:

- `make_model`
- `lpshut`
- `lpadmin`

The `make_model` command lets you add the printer model to the system. The information that you supply under the `make_model` command will be used by `lpadmin` to actually create the print queue.

The `lpshut` command shuts down `lpsched` (i.e., line printer scheduler). You must run this command prior to running `lpadmin`. If you do not shut-down the line print scheduler, the `lpadmin` process will not work. However, once the `lpadmin` command process completes, the `lpsched` command must be reinstated.

Instructions on how to accomplish each of the above tasks are defined in the following sections.

Adding Printer Model Information Using the `make_model` Command

1. From the `/tmp/install` directory, enter the following command at the command line:

```
# ./make_model
```

The following prompt appears

```
# Enter the printer model name:
```

2. Enter a name for the printer model. Press **RETURN**.

Example:

`printer2`

The following prompt appears:

Enter the name of the printer:

3. Enter a name for the printer. Press **RETURN**.

Note: Printer is the name of the printer as it exists in `/etc/hosts` or `YP/DNS`.

Example:

`hallway_40`

The following prompt appears:

Enter the port of the printer:

4. Enter a port number for the printer. Press **RETURN**.

Note: This is the socket # that sdriver will use for connecting to the printer.

Example:

`6869`

The following prompt appears:

Debug Mode [no, n, yes, y]:

5. Enter **y** to activate the Debug Mode for the socket driver. Press **RETURN**.

The following prompt appears:

Log Mode [no, n, yes, y]:

6. Enter **y** to activate the log mode. Press **RETURN**.

The following prompt appears:

Enter the pathname of the log file:

7. Enter a pathname for the log file:

Example:

`# /home/adv/40test`

The following prompt appears:

Model printer2 has been created in `/usr/lib/lp/model`.

Shutting-down the Line Printer Scheduler

lpsched must be shut-down before running the lpadmin command; then turned back on once the lpadmin command process completes.

To shut down lpsched, enter the following command at the command line. Press **RETURN**:

```
# lpshut
```

The following message will appear:

```
scheduler stopped
```

Creating a Print Queue Using the lpadmin Command

Now that lpsched has been stopped, the **lpadmin** command will work. Instructions on how to create a print queue are as follows:

1. Enter the lpadmin command at the command line. Press **RETURN**.

Example:

```
# lpadmin -p40_test -M40 -v /dev/null
```

where **40_test** is the queue name and **-M40** is the name of the script created by make_model.

2. Enter the lpstat command at the command line: Press **RETURN**.

Example:

```
# lpstat -p40_test
```

The following message appears:

```
state will be disabled since the time it was created
```

3. Enter the following command at the command line. Press **RETURN**.

```
# enable <queue_name>
```

Example:

```
# enable 40_test
```

The following message appears:

```
printer "40_test" now enabled.
```

4. Enter the following command to reinstate lpsched.

```
# lpsched
```

The following prompt appears:

scheduler is running

5. Enter the accept command at the command line to prepare the print queue to accept requests:

Example:

```
# accept 40_test
```

Using a Banner Page

A banner page is a lead sheet that can precede a print job. It contains useful information that lets other users who are printing from the same print queue, determine the ownership of a print job. A banner page is also useful for dividing print jobs, in the event that multiple print jobs are in the output tray.

A banner page contains the following information:

- the login name of the user responsible for printing the print job.
- the hostname of the computer from where the print job has originated.
- the file name of the job that is printing. If the user is printing a book file, or another type of file from where multiple documents are queued to print simultaneously, only the name of the first file in the book will appear on the banner page.
- the UNIX system group of the user who printed the print job.
- The time that the print job was submitted to the print queue.
- The print queue name.

Configuring a Banner Page

Including a banner as part of your print job is optional. However, if you elect to include them as part of your print job, you have the option of printing them from the same input tray as the actual print jobs, or from one that is specifically designated for the banners.

Tip:

One way to help distinguish between banner pages and the actual print jobs is to have the banner pages print from a paper tray containing colored paper.

Banner Page Options

A print queue has three options for banner pages. They are:

- NoBanner
Select the “NoBanner” option if you do not want banners to precede your print jobs.
- Default
Select the “Default” option if you want the banner page to print from the printer’s default tray.

- A specific Input Tray for the banner
Select the “Input Tray for the banner” option if you want to print the banner pages in tray that is separate from the tray used by the actual print jobs.

Displaying Banner Options Using the `lpspr` Command

The `lpspr` command lets you view the Printer Dependent Options, including the banner options of a specific printer through the command line interface.

This section describes how to use `lpspr` in its informational mode. To display banner options for a particular printer model, enter the following command at the command line:

Example:

```
% lpspr -W -P xyz
```

where % is the system prompt

where `lpspr` is functioning in an informational mode.

where `-W` will display all of the available options (including banner options) for the printer model.

where `-P` identifies the print queue.



To learn more about how `lpspr` works, refer to Chapter 6, `lpspr` Command.

The following illustrates a typical display of Printer Dependent Options for a printer.



Not all printer dependent options will be available for all printer models.

```
[ -Rresolution ] ::  
  1.) 300dpi  
  2.) 600dpi  
  
[ -Itray ] ::  
  1.) upper  
  2.) middle  
  3.) lower  
  4.) optional  
  
[ -Ssize ] ::  
  1.) letter  
  2.) legal  
  3.) executive  
  4.) 11x17  
  5.) a3  
  6.) a4  
  7.) a5  
  8.) b4  
  9.) b5  
 10.) b4iso  
 11.) b5iso  
 12.) statement  
  
[ -Ksides ] ::  
  1.) none  
  2.) duplexnotumble  
  3.) duplextumble
```



The options listed under the `-Itray` let you print the banner page from a specific tray. You may also use the default tray, or the `NoBanner` option, if either one is more appropriate for your environment. The tray option that you select for the banners is placed in the `printer2mdl` file as described in the section, *Maintaining Banner Page Information in the printer2mdl file*.

Maintaining Banner Information in the printer2mdl File

The **printer2mdl** map file maintains a list of all the print queues, printer model names, and banner page options associated with a specific computer system.



The **printer2mdl** map file found in your installation kit is to be used as an example only. It is your responsibility to generate a new version of this file, and to place it in the /etc directory.

To find out more about the printer2mdl file, refer to Chapter 6, “**Printer to Model Map File (printer2mdl)**” on page 6-2

The following is an example of a **printer2mdl** map file:

```
# 'print-queue-name'      'model-name'      'banner-page-selection'

Hallway_Printer2         Printer_2         Middle
Copyroom_Printer3        Printer_3         NoBanner
Reception_Printer1       Printer_1         Default
Engineering_Printer4     Printer_4         NoBanner
```

- where Hallway_Printer2, Copyroom_Printer3, Reception_Printer1 and Engineering_Printer4 all identify the names of the individual print queues on your computer system.
- where Printer_2, Printer_3, Printer_1 and Printer_4 all identify the name of the printer models associated with each, individual print queue.
- where Middle, NoBanner, Default and NoBanner each identify the banner options set for each print queue.

Installing and Configuring UNIX Printing Software on an IBM/AIX System

This chapter contains information for installing and configuring UNIX Printing Software on an IBM/AIX system.

Topics in this chapter include:

- “lpr and lp” on page 3-2
- “Installation Prerequisites” on page 3-3
- “Installing UNIX Printing Software on an IBM/AIX System” on page 3-9
- “Deinstalling UNIX Printing Software” on page 3-10
- “Configuring UNIX Printing Software on an IBM/AIX System” on page 3-10

lpr and lp

lpr and **lp** are two separate commands that are used by **xlpssprint** and **lpsspr** for sending files to a spooler daemon for printing. The **lpr** command is used for BSD-based printing, and the **lp** command is used for System V-based printing.



xlpssprint is a graphical user interface that lets you select printer features and send files to a particular print queue. Refer to Chapter 6 for more information about xlpssprint.

lpr and **lp** are the user interfaces into BSD and SYSTEM V spooling subsystems, respectively. Although **lpr** and **lp** both use a spooler daemon to queue files for printing, the process for sending the files to a printer differs. Another difference between the two subsystems is in the command syntax that you enter at the command line. A description of each command entry is as follows:

- **BSD-based Printing**

Users using UNIX systems that are based on the BSD derivative must enter the **lpr** command at the command line to send files to the spooler daemon for printing.

```
# lpr -Pprint_queue filename
```

where **printer** is the name of the print queue from `/etc/printcap`.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lpr -PHallway_40 Test1.txt
```

The **-P** flag identifies the name of the print queue.

- **System V-based Printing**

Users Using UNIX systems that are based on the SYSTEM V derivative must enter the **lp** command at the command line to send files to the spooler daemon for printing.

```
# lp -dprinter filename
```

where **printer** is the name of the print queue created by the system administrator using **lpadmin**, **SMIT** or another System V related utility.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:


```
# lp -dCopyroom_40 Test2.txt
```

The **-d** flag indicates the print queue name for the print job.



The installation script `lpspr_install` prompts you to select a path for **LPRCOM** and a flag for **LPRFLAG**.

LPRCOM is a program file that sends flags to the spooler daemon for printing. It has a default path of `/usr/bin/lpr`. You can accept the default path by pressing **RETURN**, or you can provide a new one at the command line.

LPRFLAG is an **LPRCOM** flag that is usually followed by the print queue name. The flag that you select for **LPRFLAG** will depend upon your UNIX printing subsystem. If it is a BSD-derivative, press **RETURN** to select the default flag **-P**. However, if the subsystem is a SYSTEM V derivative, you must change the default flag to **-d**.

Installation Prerequisites

There are several prerequisite tasks that you must complete before you can install the software. A description of each one is as follows:

1. You must be a Super User (Root) in order to install UNIX Printing Software. Refer to the section, “[Super User Privileges](#)” on page 3-3 to learn more about this topic.
2. You must make a temporary directory for the software kit. Refer to the section, “[Create a Temporary Directory](#)” on page 3-4 to learn more about this topic.
3. You are going to need to untar the Tar file once the software kit is in its temporary directory. Refer to the section, “[Unarchiving .tar Files](#)” on page 3-7 to learn more about this topic.
4. With the Tar File unarchived, you can run the `lpspr_install` command. Refer to the section within this chapter that is specific to your UNIX system.
5. You should have a basic understanding about UNIX printing subsystems and the types of commands that they require.

Super User Privileges

To be a Super User (root), follow the instructions below:

1. Type **su** at the command line. Press **RETURN**.

You will be prompted for the super user password. If you do not know the super user password, contact your system administrator.

2. Enter the super user password. Press **RETURN**.

Create a Temporary Directory

You must make a temporary directory for the UNIX Printing Software kit. Instructions are as follows:



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges” on page 3-3** for instructions on how to become a super user.

1. Enter the following command at the command line. Press **RETURN**.
`# mkdir /tmp/install`
2. Enter the following command at the command line. Press **RETURN**.
`# cd /tmp/install`
3. Your next step is to mount the CD-ROM. Refer to the next section, Mount the CD-ROM for instructions on how to accomplish this task.

Mount the CD-ROM on an IBM/AIX System

Instructions on how to mount the CD-ROM on an IBM/AIX System are as follows



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges” on page 3-3** for instructions on how to become a super user.

Instructions are as follows:

1. Create a directory to serve as the mounting point for the CD-ROM.

Refer to the section **“Create a Temporary Directory” on page 3-4** for instructions on how to complete this task.

Note: Your CD device file will most likely be `/dev/cdo`.
2. Mount the device on the mount point by entering the following command:

`# /usr/sbin/mount -v cdrfs -r /dev/cdo /mycdrom`

where `-r` is read only.

where `-v cdrfs` is the cd file system type.

where `/dev/cdo` is the CD-ROM device file

where `/mycdrom` identifies the mount point for the CD-ROM.

3. Once the command successfully executes, you can refer to the device by the mount point, e.g., `/mycdrom`.



Once the software kit is in its temporary directory, you will need to untar the tar File. Refer to the section, “[Unarchiving .tar Files](#)” on page 3-7 of this guide.

Dismount the CD-ROM on an IBM/AIX System

To dismount the CD-ROM from an IBM/AIX System, enter the following command at the command line:

```
# /usr/sbin/umount /mycdrom
```

Identifying the CD-ROM Device File

To identify the CD-ROM Device File, enter the following command at the command line:

```
# lsdev -C -c cdrom
```

Typically, the first three characters in the reply will identify the CD-ROM Device File name.

Example:

If you got the following reply:

```
cdo available 04-80-60-3, 0 SCSI Multimedia, CD-ROM Drive
```

the CD-ROM Device File would be `/dev/cdo/`

Mount the CD-ROM on an IBM/AIX System Using SMIT

To mount a CD-ROM on an IBM/AIX system using SMIT, follow the instructions below:

1. Enter the following command at the command line:

```
# SMIT
```

The System Management Window appears

2. Click the **Devices** button.
3. Click the **CD-ROM** select button.

The **CD-ROM Select Popup** appears, displaying a top and lower box. The lower box contains the same output as that generated by the CLI version of **lsdev**.

4. Click **Done**.
5. Click the **System Management** button.
6. Click the **System Storage Management** button.
7. Click the **File Systems** button.
8. Click the **Mount a File System** button.

A window appears.

9. From the **File System Name** field, click the **List Button**.

A window appears.

10. Select the device file name.

Note: Typically, the CD-ROM device file name is the same as the first three characters included at the beginning of Step 3 (i.e., **cdo**). If so, the device file is **/dev/cdo**.

11. From the **Directory Over Which to Mount** field, click the **List Button**.

A window appears.

12. Select the directory that was created for the mount point.
13. From the **Type of File System** field, click the **List Button**.
14. Select **cdrrfs** from the list.
15. Select **n** to force the mount.

The default values for the remaining fields are valid entries, and do not need to be updated, unless specifically required by your system.

Unarchiving .tar Files

There is a master .tar file (i.e., **unprswxx.tar**) within your software kit that must be unarchived. Inside the master .tar file is a set of individual .tar files that must also be unarchived, as necessary, for each of the UNIX operating systems.

The .tar files maintained by **unprswxx.tar** include:

where **xx** is the version of the software kit.

- a **dunix.tar** for use with Compaq Tru64 UNIX systems.
- an **hp9000_778.tar** for use with HP/UX systems.
- **linuxa.tar** for use on a Alpha-based Linux system
- **linuxi.tar** for use on an Intel-based Linux system.
- an **rs6000.tar** for use with IBM/AIX systems.
- a **sun4u.tar** for use on SUN Solaris systems



Before unarchiving a .tar file, make sure that you are located in the temporary directory into which you want to install the kit.

Unarchiving the Master .tar File

To unarchive the master .tar file, enter the following command at the command line:

```
# tar xvf unprswxx.tar
```

where **xx** is the version number of the kit.

Refer to the section, *Viewing tar File Contents* to find out how to display the contents of this file.

Unarchiving a .tar File Kit

To unarchive one of the .tar files that was maintained by the master .tar file, enter the following command at the command line:

```
# tar xvf filename.tar
```

where **filename** identifies the software kit for your UNIX operating system.

Refer to the section, Viewing tar File Contents to find out how to display the contents of this file.

Viewing tar File Contents

To view the contents of the newly unarchived tar file, enter the following command at the command line:

```
# ls -l
```

You should see the following directories and files in your kit:

Directories

- exe
- lib
- man1
- ppd

Files:

- XLpsprint1
- lpspr_install
- lpsprodb.ini
- make_model
- lpspr_deinstall

Installing UNIX Printing Software on an IBM/AIX System

Instructions for installing UNIX Printing Software on an IBM/AIX System are as follows:

1. Enter the following command at the command line. Press **RETURN**.

```
# ./lpspr_install
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]:
```

LPSROOT is an upper level directory structure under which the rest of the code will be installed.

2. Press **RETURN** to accept the default, or enter another pathname to be used by LPSROOT.

Another prompt appears:

```
Select LPRCOM [/usr/bin/lpr]:
```

3. Press **RETURN** to accept the default. Another prompt appears:

```
Select LPRFLAG [-P]
```

4. Press **RETURN** to accept the default. The following message appears:

```
Installation Successful
```



If the installation is unsuccessful, you must deinstall the existing software, before you can reinstall it. Refer to the section, “**Deinstalling UNIX Printing Software**” on page 3-10 for instructions on how to accomplish this task.

Deinstalling UNIX Printing Software

If `lpspr_install` does not successfully copy all of the files within the kit, you must delete the existing files from the system before reinstalling the software. The `lpspr_deinstall` command will remove the directory structure for all existing files for `lpspr`, `xlpsprint` and `sdriver`.

You can use this deinstall command on any of the UNIX systems.

1. From the command line, enter the following command:

```
# ./lpspr_deinstall
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]
```

LPSROOT is an upper level directory structure under which rest of the installation code is installed.

2. Press **RETURN** if the default is OK. Otherwise, enter a new path.

The following message appears:

```
Deinstallation successful
```

Configuring UNIX Printing Software on an IBM/AIX System

This section contains instructions on how to configure UNIX Printing Software on an IBM/AIX System.

Configuration topics include:

- how to create print queues.
- how to add banner pages to print jobs.



You must be a Super User (Root) in order to perform any of the configuration tasks described in this chapter. Refer to the section, “**Super User Privileges**” on [page 3-3](#) for instructions on how to accomplish this task.

Creating a Print Queue for an IBM/AIX System

To create a print queue for an IBM/AIX system, follow the instructions below:

1. From the /tmp/install directory, enter the following command at the command line. Press **RETURN**.

```
# ./make_printer
```

The following prompt appears:

```
Select the printer queue name.
```

2. Enter a name for the printer queue. Press **RETURN**.

The following prompt appears:

```
Enter the name of the server:
```

3. Enter a name for the printer. Press **RETURN**.

The following prompt appears:

```
Enter the port of the server:
```

4. Enter a port number for the printer. Press **RETURN**.

Example:

```
6869
```

Note: This is the port number that sdriver will use for connecting to the printer.

The following prompt appears:

```
Debug Mode [no, n, yes, y]:
```

5. Enter **y** to activate the debug mode for the socket driver. Press **RETURN**.

The following prompt appears:

```
Log Mode [no, n, yes, y]:
```

6. Enter **y** to activate the log mode. Press **RETURN**.

The following prompt appears:

```
Enter the pathname of the log file:
```

7. Enter a pathname for the log file:

Example:

```
# /home/adv/40test
```

The following prompt appears:

```
Printer {NAME} has been created.
```

Using a Banner Page

A banner page is a lead sheet that can precede a print job. It contains useful information that lets other users who are printing from the same print queue, determine the ownership of a print job. A banner page is also useful for dividing print jobs, in the event that multiple print jobs are in the output tray.

A banner page contains the following information:

- the login name of the user responsible for printing the print job.
- the hostname of the computer from where the print job has originated.
- the file name of the job that is printing. If the user is printing a book file, or another type of file from where multiple documents are queued to print simultaneously, only the name of the first file in the book will appear on the banner page.
- the UNIX system group of the user who printed the print job.
- The time that the print job was submitted to the print queue.
- The print queue name.

Configuring a Banner Page

Including a banner as part of your print job is optional. However, if you elect to include them as part of your print job, you have the option of printing them from the same input tray as the actual print jobs, or from one that is specifically designated for the banners.

Tip:

One way to help distinguish between banner pages and the actual print jobs is to have the banner pages print from a paper tray containing colored paper.

Banner Page Options

A print queue has three options for banner pages. They are:

- NoBanner
Select the “NoBanner” option if you do not want banners to precede your print jobs.
- Default
Select the “Default” option if you want the banner page to print from the printer’s default tray.

- A specific Input Tray for the banner
Select the “Input Tray for the banner” option if you want to print the banner pages in tray that is separate from the tray used by the actual print jobs.

Displaying Banner Options Using the `lpspr` Command

The `lpspr` command lets you view the Printer Dependent Options, including the banner options of a specific printer through the command line interface.

This section describes how to use `lpspr` in its informational mode. To display banner options for a particular printer model, enter the following command at the command line:

Example:

```
% lpspr -W -P xyz
```

where % is the system prompt

where `lpspr` is functioning in an informational mode.

where `-W` will display all of the available options (including banner options) for the printer model.

where `-P` identifies the print queue.



To learn more about how `lpspr` works, refer to Chapter 6, `lpspr` Command.

The following illustrates a typical display of Printer Dependent Options for a printer.



Not all printer dependent options will be available for all printer models.

```
[ -Rresolution ] ::  
  1.) 300dpi  
  2.) 600dpi  
  
[ -Itray ] ::  
  1.) upper  
  2.) middle  
  3.) lower  
  4.) optional  
  
[ -Ssize ] ::  
  1.) letter  
  2.) legal  
  3.) executive  
  4.) 11x17  
  5.) a3  
  6.) a4  
  7.) a5  
  8.) b4  
  9.) b5  
 10.) b4iso  
 11.) b5iso  
 12.) statement  
  
[ -Ksides ] ::  
  1.) none  
  2.) duplexnotumble  
  3.) duplextumble
```



The options listed under the `-Itray` let you print the banner page from a specific tray. You may also use the default tray, or the NoBanner option, if either one is more appropriate for your environment. The tray option that you select for the banners is placed in the `printer2mdl` file as described in the section, *Maintaining Banner Page Information in the printer2mdl file*.

Maintaining Banner Information in the printer2mdl File

The **printer2mdl** map file maintains a list of all the print queues, printer model names, and banner page options associated with a specific computer system.



The **printer2mdl** map file found in your installation kit is to be used as an example only. It is your responsibility to generate a new version of this file, and to place it in the /etc directory.

To find out more about the printer2mdl file, refer to Chapter 6, “**Printer to Model Map File (printer2mdl)**” on page 6-2

The following is an example of a **printer2mdl** map file:

```
# 'print-queue-name'      'model-name'      'banner-page-selection'

Hallway_Printer2         Printer_2         Middle
Copyroom_Printer3        Printer_3         NoBanner
Reception_Printer1       Printer_1         Default
Engineering_Printer4     Printer_4         NoBanner
```

- where Hallway_Printer2, Copyroom_Printer3, Reception_Printer1 and Engineering_Printer4 all identify the names of the individual print queues on your computer system.
- where Printer_2, Printer_3, Printer_1 and Printer_4 all identify the name of the printer models associated with each, individual print queue.
- where Middle, NoBanner, Default and NoBanner each identify the banner options set for each print queue.

Installing and Configuring UNIX Printing Software on a Linux System

This chapter contains information for installing and configuring UNIX Printing Software on a LINUX (ALPHA or INTEL) system.

Topics in this chapter include:

- “lpr and lp” on page 4-2
- “Installation Prerequisites” on page 4-3
- “Deinstalling UNIX Printing Software” on page 4-7
- “Configuring UNIX Printing Software on a LINUX System” on page 4-8

lpr and lp

lpr and **lp** are two separate commands that are used by **xlpsprint** and **lpshr** sending files to a spooler daemon for printing. The **lpr** command is used for BSD-based printing, and the **lp** command is used for System V-based printing.



xlpsprint is a graphical user interface that lets you select printer features and send files to a particular print queue. Refer to Chapter 6 for more information about **xlpsprint**.

lpr and **lp** are the user interfaces into BSD and SYSTEM V spooling subsystems, respectively. Although **lpr** and **lp** both use a spooler daemon to queue files for printing, the process for sending the files to a printer differs. Another difference between the two subsystems is in the command syntax that you enter at the command line. A description of each command entry is as follows:

- **BSD-based Printing**

Users using UNIX systems that are based on the BSD derivative must enter the **lpr** command at the command line to send files to the spooler daemon for printing.

```
# lpr -Pprint_queue filename
```

where **printer** is the name of the print queue from `/etc/printcap`.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lpr -PHallway_40 Test1.txt
```

The **-P** flag identifies the name of the print queue.

- **System V-based Printing**

Users Using UNIX systems that are based on the SYSTEM V derivative must enter the **lp** command at the command line to send files to the spooler daemon for printing.

```
# lp -dprinter filename
```

where **printer** is the name of the print queue created by the system administrator using **lpadmin**, **SMIT** or another System V related utility.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:


```
# lp -dCopyroom_40 Test2.txt
```

The **-d** flag indicates the print queue name for the print job.



The installation script `lpspr_install` prompts you to select a path for **LPRCOM** and a flag for **LPRFLAG**.

LPRCOM is a program file that sends flags to the spooler daemon for printing. It has a default path of `/usr/bin/lpr`. You can accept the default path by pressing `RETURN`, or you can provide a new one at the command line.

LPRFLAG is an **LPRCOM** flag that is usually followed by the print queue name. The flag that you select for **LPRFLAG** will depend upon your UNIX printing subsystem. If it is a BSD-derivative, press `RETURN` to select the default flag `-P`. However, if the subsystem is a SYSTEM V derivative, you must change the default flag to `-d`.

Installation Prerequisites

There are several prerequisite tasks that you must complete before you can install the software. A description of each one is as follows:

1. You must be a Super User (Root) in order to install UNIX Printing Software. Refer to the section, “[Super User Privileges](#)” on page 4-4 to learn more about this topic.
2. You must make a temporary directory for the software kit. Refer to the section, “[Create a Temporary Directory](#)” on page 4-4 to learn more about this topic.
3. You are going to need to untar the Tar file once the software kit is in its temporary directory. Refer to the section, “[Unarchiving .tar Files](#)” on page 4-5 to learn more about this topic.
4. With the Tar File unarchived, you can run the `lpspr_install` command. Refer to the section within this chapter that is specific to your UNIX system.
5. You should have a basic understanding about UNIX printing subsystems and the types of commands that they require.

Super User Privileges

To be a Super User (root), follow the instructions below:

1. Type **su** at the command line. Press **RETURN**.

You will be prompted for the super user password. If you do not know the super user password, contact your system administrator.

2. Enter the super user password. Press **RETURN**.

Create a Temporary Directory

You must make a temporary directory for the UNIX Printing Software kit. Instructions are as follows:



You must have super user privileges to complete this task. Refer to the section, “**Super User Privileges**” on page 4-4 for instructions on how to become a super user.

1. Enter the following command at the command line. Press **RETURN**.

```
# mkdir /tmp/install
```
2. Enter the following command at the command line. Press **RETURN**.

```
# cd /tmp/install
```
3. Your next step is to mount the CD-ROM. Refer to the next section, Mount the CD-ROM for instructions on how to accomplish this task.

Mount the CD-ROM on a LINUX (Alpha or INTEL) System

To mount a CD-ROM on a LINUX (Alpha or INTEL) system, follow the instructions below:

1. Enter the following command at the command line:

```
# mount /dev/cdrom /mycdrom
```

where **/mycdrom** identifies the mount point for the CD-ROM.

Unarchiving .tar Files

There is a master .tar file (i.e., **unprswxx.tar**) within your software kit that must be unarchived. Inside the master .tar file is a set of individual .tar files that must also be unarchived, as necessary, for each of the UNIX operating systems.

The .tar files maintained by **unprswxx.tar** include:

where **xx** is the version of the software kit.

- a dunix.tar for use with Compaq Tru64 UNIX systems.
- an hp9000_778.tar for use with HP/UX systems.
- linuxa.tar for use on a Alpha-based Linux system
- linuxi.tar for use on an Intel-based Linux system.
- an rs6000.tar for use with IBM/AIX systems.
- a sun4u.tar for use on SUN Solaris systems



Before unarchiving a .tar file, make sure that you are located in the temporary directory into which you want to install the kit.

Unarchiving the Master .tar File

To unarchive the master .tar file, enter the following command at the command line:

```
# tar xvf unprswxx.tar
```

Refer to the section, *Viewing tar File Contents* to find out how to display the contents of this file.

Unarchiving a .tar File Kit

To unarchive one of the .tar files that was maintained by the master .tar file, enter the following command at the command line:

```
# tar xvf filename.tar
```

where **filename** identifies the software kit for your UNIX operating system.

Refer to the section, *Viewing tar File Contents* to find out how to display the contents of this file.

Viewing tar File Contents

To view the contents of the newly unarchived tar file, enter the following command at the command line:

```
# ls -l
```

You should see the following directories and files in your kit:

Directories

- exe
- lib
- man1
- ppd

Files:

- XLpsprint1
- lpspr_install
- lpsprodb.ini
- make_model
- lpspr_deinstall

Installing UNIX Printing Software on a Linux (Alpha or Intel) System

Instructions for installing UNIX Printing Software on a Linux (Alpha or Intel) System are as follows:

1. Enter the following command at the command line. Press **RETURN**.

```
# ./lpspr_install
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]:
```

LPSROOT is an upper level directory structure under which the rest of the code will be installed.

2. Press **RETURN** to accept the default, or enter another pathname to be used by LPSROOT.

Another prompt appears:

```
Select LPRCOM [/usr/bin/lpr]:
```

3. Press **RETURN** to accept the default. Another prompt appears:

```
Select LPRFLAG [-P]
```

4. Press **RETURN** to accept the default. The following message appears:

```
Installation Successful
```



If the installation is unsuccessful, you must deinstall the existing software, before you can reinstall it. Refer to the next section, “**Deinstalling UNIX Printing Software**” on page 4-7 for instructions on how to accomplish this task.

Deinstalling UNIX Printing Software

If lpspr_install does not successfully copy all of the files within the kit, you must delete the existing files from the system before reinstalling the software. The lpspr_deinstall command will remove the directory structure for all existing files for lpspr, xlpssprint and sdriver.

You can use this deinstall command on any of the UNIX systems.

1. From the command line, enter the following command:

```
# ./lpspr_deinstall
```

The following prompt appears:

```
Select LPSROOT [ /opt/lpspr ]
```

LPSROOT is an upper level directory structure under which rest of the installation code is installed.

2. Press **RETURN** if the default is OK. Otherwise, enter a new path.

The following message appears:

```
Deinstallation successful
```

Configuring UNIX Printing Software on a LINUX System

This section contains instructions on how to configure UNIX Printing Software on a Linux System.

Configuration topics include:

- how to create print queues.
- how to add banner pages to print jobs.



You must be a Super User (Root) in order to perform any of the configuration tasks described in this chapter. Refer to the section, “**Super User Privileges**” on [page 4-4](#) for instructions on how to accomplish this task.

Creating a Print Queue for a LINUX (Alpha or Intel) System

To create a print queue on a LINUX (Alpha or Intel) System, you must run the `make_filter` script. Instructions are as follows:

1. From the `/tmp/install` directory, enter the following command at the command line:

```
# ./make_filter
```

The following prompt appears

```
# Enter filter directory: (/etc/lp/filter)
```

2. Press **RETURN** to accept the default directory.

The following prompt appears:

```
Enter the filter name:
```

3. Enter a name for the filter. Press **RETURN**.

If the filter name already exists, you will be prompted to overwrite it. If the filter name does not already exist, the following prompt appears:

Enter the name of the printer:

4. Enter the name of the printer. Press **RETURN**.

The following prompt appears:

Enter the port of the print server.

5. Enter a port number for the print server. Press **RETURN**.

Example:

6869

Note: This is the socket number that sdriver will use for connecting to the printer.

The following prompt appears:

Debug Mode [no, n, yes, y]:

6. Enter **y** to activate the debug mode for the socket driver. Press **RETURN**.

The following prompt appears:

Log Mode [no, n, yes, y]:

7. Enter **y** to activate the log mode. Press **RETURN**.

The following prompt appears:

Enter the pathname of the log file:

8. Enter a pathname for the log file:

Example:

/home/adv/40test

The following prompt appears:

Filter Filter_Name has been created.

Running Printtool

The Printtool command creates an entry in `/etc/printcap`. Refer to the section, [“Printer to Model Map File \(printer2mdl\)” on page 6-2](#) to learn more about this file.



You must run the `setenv` command before you can run Printtool.

Example:

```
# setenv display 10.10.156:0
```

To run printtool, enter the following command at the command line:

1. `# printtool`

Two system messages regarding samba and ncpfs will appear.

2. Click **OK** to ignore each message after it appears.

The **Red Hat LINUX Print System Manager** window appears.

3. Highlight the printer that was created while running the `make_filter` script. Click **Add**.

The **Add a Printer Entry** window appears.

4. With the Local Printer option as the default, click **OK**.
5. Click **OK** a second time.

The **Edit Local Printer Entry** window opens

6. Enter the name of the print queue in the **Name** field (i.e., name of printer).
7. Update the spool directory with the printer that was created during the `make_filter` script.

Example:

```
/var/spool/lpd/printer32/
```

8. Update the Printer Device to read `/dev/null/`.
9. Update the **Input Filter** field with the filter directory that you defined during the `make_filter` script.
10. Click **OK**.

Using a Banner Page

A banner page is a lead sheet that can precede a print job. It contains useful information that lets other users who are printing from the same print queue, determine the ownership of a print job. A banner page is also useful for dividing print jobs, in the event that multiple print jobs are in the output tray.

A banner page contains the following information:

- the login name of the user responsible for printing the print job.
- the hostname of the computer from where the print job has originated.
- the file name of the job that is printing. If the user is printing a book file, or another type of file from where multiple documents are queued to print simultaneously, only the name of the first file in the book will appear on the banner page.
- the UNIX system group of the user who printed the print job.
- The time that the print job was submitted to the print queue.
- The print queue name.

Configuring a Banner Page

Including a banner as part of your print job is optional. However, if you elect to include them as part of your print job, you have the option of printing them from the same input tray as the actual print jobs, or from one that is specifically designated for the banners.

Tip:

One way to help distinguish between banner pages and the actual print jobs is to have the banner pages print from a paper tray containing colored paper.

Banner Page Options

A print queue has three options for banner pages. They are:

- NoBanner
Select the “NoBanner” option if you do not want banners to precede your print jobs.
- Default
Select the “Default” option if you want the banner page to print from the printer’s default tray.

- A specific Input Tray for the banner
Select the “Input Tray for the banner” option if you want to print the banner pages in tray that is separate from the tray used by the actual print jobs.

Displaying Banner Options Using the `lpspr` Command

The `lpspr` command lets you view the Printer Dependent Options, including the banner options of a specific printer through the command line interface.

This section describes how to use `lpspr` in its informational mode. To display banner options for a particular printer model, enter the following command at the command line:

Example:

```
% lpspr -W -P xyz
```

where % is the system prompt

where `lpspr` is functioning in an informational mode.

where `-W` will display all of the available options (including banner options) for the printer model.

where `-P` identifies the print queue.



To learn more about how `lpspr` works, refer to Chapter 6, `lpspr` Command.

The following illustrates a typical display of Printer Dependent Options for a printer.



Not all printer dependent options will be available for all printer models.

```
[ -Rresolution ] ::  
  1.) 300dpi  
  2.) 600dpi  
  
[ -Itray ] ::  
  1.) upper  
  2.) middle  
  3.) lower  
  4.) optional  
  
[ -Ssize ] ::  
  1.) letter  
  2.) legal  
  3.) executive  
  4.) 11x17  
  5.) a3  
  6.) a4  
  7.) a5  
  8.) b4  
  9.) b5  
 10.) b4iso  
 11.) b5iso  
 12.) statement  
  
[ -Ksides ] ::  
  1.) none  
  2.) duplexnotumble  
  3.) duplextumble
```



The options listed under the `-Itray` let you print the banner page from a specific tray. You may also use the default tray, or the NoBanner option, if either one is more appropriate for your environment. The tray option that you select for the banners is placed in the `printer2mdl` file as described in the section, *Maintaining Banner Page Information in the printer2mdl file*.

Maintaining Banner Information in the printer2mdl File

The **printer2mdl** map file maintains a list of all the print queues, printer model names, and banner page options associated with a specific computer system.



The **printer2mdl** map file found in your installation kit is to be used as an example only. It is your responsibility to generate a new version of this file, and to place it in the /etc directory.

To find out more about the printer2mdl file, refer to Chapter 6, “**Printer to Model Map File (printer2mdl)**” on page 6-2

The following is an example of a **printer2mdl** map file:

```
# 'print-queue-name'      'model-name'      'banner-page-selection'

Hallway_Printer2         Printer_2         Middle
Copyroom_Printer3        Printer_3         NoBanner
Reception_Printer1        Printer_1         Default
Engineering_Printer4      Printer_4         NoBanner
```

- where Hallway_Printer2, Copyroom_Printer3, Reception_Printer1 and Engineering_Printer4 all identify the names of the individual print queues on your computer system.
- where Printer_2, Printer_3, Printer_1 and Printer_4 all identify the name of the printer models associated with each, individual print queue.
- where Middle, NoBanner, Default and NoBanner each identify the banner options set for each print queue.

Installing and Configuring UNIX Printing Software on a Sun Solaris System

This chapter contains information for installing UNIX Printing Software on a SUN Solaris System

Topics in this chapter include:

- “lpr and lp” on page 5-2
- “Installation Prerequisites” on page 5-4
- “Installing UNIX Printing Software on a SUN Solaris System” on page 5-7
- “Deinstalling UNIX Printing Software” on page 5-8
- “Configuring UNIX Printing Software on a SUN Solaris System” on page 5-8

lpr and lp

lpr and **lp** are two separate commands that are used by **xlpssprint** and **lpsspr** for sending files to a spooler daemon for printing. The **lpr** command is used for BSD-based printing, and the **lp** command is used for System V-based printing.



xlpssprint is a graphical user interface that lets you select printer features and send files to a particular print queue. Refer to Chapter 6 for more information about **xlpssprint**.

lpr and **lp** are the user interfaces into BSD and SYSTEM V spooling subsystems, respectively. Although **lpr** and **lp** both use a spooler daemon to queue files for printing, the process for sending the files to a printer differs. Another difference between the two subsystems is in the command syntax that you enter at the command line. A description of each command entry is as follows:

- **BSD-based Printing**

Users using UNIX systems that are based on the BSD derivative must enter the **lpr** command at the command line to send files to the spooler daemon for printing.

```
# lpr -Pprint_queue filename
```

where **printer** is the name of the print queue from `/etc/printcap`.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lpr -PHallway_40 Test1.txt
```

The **-P** flag identifies the name of the print queue.

- System V-based Printing

Users Using UNIX systems that are based on the SYSTEM V derivative must enter the `lp` command at the command line to send files to the spooler daemon for printing.

```
# lp -dprinter filename
```

where **printer** is the name of the print queue created by the system administrator using **lpadmin**, **SMIT** or another System V related utility.

where **filename** is the name of a file that you would like to print using the queued printer.

Example:

```
# lp -dCopyroom_40 Test2.txt
```

The **-d** flag indicates the print queue name for the print job.



The installation script `lpspr_install` prompts you to select a path for **LPRCOM** and a flag for **LPRFLAG**.

LPRCOM is a program file that sends flags to the spooler daemon for printing. It has a default path of `/usr/bin/lpr`. You can accept the default path by pressing **RETURN**, or you can provide a new one at the command line.

LPRFLAG is an **LPRCOM** flag that is usually followed by the print queue name. The flag that you select for **LPRFLAG** will depend upon your UNIX printing subsystem. If it is a BSD-derivative, press **RETURN** to select the default flag **-P**. However, if the subsystem is a SYSTEM V derivative, you must change the default flag to **-d**.

Installation Prerequisites

There are several prerequisite tasks that you must complete before you can install the software. A description of each one is as follows:

1. You must be a Super User (Root) in order to install UNIX Printing Software. Refer to the section, “[Super User Privileges](#)” on page 5-4 to learn more about this topic.
2. You must make a temporary directory for the software kit. Refer to the section, “[Create a Temporary Directory](#)” on page 5-4 to learn more about this topic.
3. You are going to need to untar the Tar file once the software kit is in its temporary directory. Refer to the section, “[Unarchiving .tar Files](#)” on page 5-5 to learn more about this topic.
4. With the Tar File unarchived, you can run the `lpspr_install` command. Refer to the section within this chapter that is specific to your UNIX system.
5. You should have a basic understanding about UNIX printing subsystems and the types of commands that they require.

Super User Privileges

To be a Super User (root), follow the instructions below:

1. Type `su` at the command line. Press **RETURN**.
You will be prompted for the super user password. If you do not know the super user password, contact your system administrator.
2. Enter the super user password. Press **RETURN**.

Create a Temporary Directory

You must make a temporary directory for the UNIX Printing Software kit. Instructions are as follows:



You must have super user privileges to complete this task. Refer to the section, “[Super User Privileges](#)” on page 5-4 for instructions on how to become a super user.

1. Enter the following command at the command line. Press **RETURN**.
`# mkdir /tmp/install`
2. Enter the following command at the command line. Press **RETURN**.


```
# cd /tmp/install
```

3. Your next step is to mount the CD-ROM. Refer to the next section, Mount the CD-ROM for instructions on how to accomplish this task.

Mount the CD-ROM on a SUN Solaris System

SUN Solaris will self-mount the CD-ROM once it is placed in the CD-ROM drive. The CD-ROM drive is mounted on the mount point `/cdrom`.



You must have super user privileges to complete this task. Refer to the section, **“Super User Privileges”** on page 5-4 for instructions on how to become a super user.



Once the software kit is in its temporary directory, you will need to untar the tar File. Refer to the section, **“Unarchiving .tar Files”** on page 5-5 of this guide.

Unarchiving .tar Files

There is a master .tar file (i.e., `unprswxx.tar`) within your software kit that must be unarchived. Inside the master .tar file is a set of individual .tar files that must also be unarchived, as necessary, for each of the UNIX operating systems.

The .tar files maintained by `unprswxx.tar` include:

where `xx` is the version of the software kit.

- a `dunix.tar` for use with Compaq Tru64 UNIX systems.
- an `hp9000_778.tar` for use with HP/UX systems.
- `linuxa.tar` for use on a Alpha-based Linux system
- `linuxi.tar` for use on an Intel-based Linux system.
- an `rs6000.tar` for use with IBM/AIX systems.
- a `sun4u.tar` for use on SUN Solaris systems



Before unarchiving a .tar file, make sure that you are located in the temporary directory into which you want to install the kit.

Unarchiving the Master .tar File

To unarchive the master .tar file, enter the following command at the command line:

```
# tar xvf unprswxx.tar
```

Refer to the section, *Viewing tar File Contents* to find out how to display the contents of this file.

Unarchiving a .tar File Kit

To unarchive one of the .tar files that was maintained by the master .tar file, enter the following command at the command line:

```
# tar xvf filename.tar
```

where **filename** identifies the software kit for your UNIX operating system.

Refer to the section, *Viewing tar File Contents* to find out how to display the contents of this file.

Viewing tar File Contents

To view the contents of the newly unarchived tar file, enter the following command at the command line:

```
# ls -l
```

You should see the following directories and files in your kit:

Directories

- exe
- lib
- man1
- ppd

Files:

- XLpsprint1
- lpspr_install
- lpsprodb.ini
- make_model
- lpspr_deinstall

Installing UNIX Printing Software on a SUN Solaris System

Instructions for installing UNIX Printing Software on a Sun System are as follows:

1. Enter the following command at the command line. Press **RETURN**.

```
# ./lpspr_install
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]:
```

LPSROOT is an upper level directory structure under which the rest of the code will be installed.

2. Press **RETURN** to accept the default, or enter another pathname to be used by LPSROOT.

Another prompt appears:

```
Select LPRCOM [/usr/bin/lpr]:
```

3. Enter the following new pathname for LPRCOM. Press **RETURN**.

```
/usr/bin/lp
```

Another prompt appears:

```
Select LPRFLAG [-P]
```

4. Enter the following new flag for LPRFLAG:

```
# LPRFLAG [-P]: -d
```

The following message appears:

```
Installation is successful.
```



If the installation is unsuccessful, you must deinstall the existing software, before you can reinstall it. Refer to the section, “**Deinstalling UNIX Printing Software**” on page 5-8 for instructions on how to accomplish this task.

Deinstalling UNIX Printing Software

If `lpspr_install` does not successfully copy all of the files within the kit, you must delete the existing files from the system before reinstalling the software. The `lpspr_deinstall` command will remove the directory structure for all existing files for `lpspr`, `xlpsprint` and `sdriver`.

You can use this deinstall command on any of the UNIX systems.

1. From the command line, enter the following command:

```
# ./lpspr_deinstall
```

The following prompt appears:

```
Select LPSROOT [/opt/lpspr]
```

LPSROOT is an upper level directory structure under which rest of the installation code is installed.

2. Press **RETURN** if the default is OK. Otherwise, enter a new path.

The following message appears:

```
Deinstallation successful
```

Configuring UNIX Printing Software on a SUN Solaris System

This section contains instructions on how to configure UNIX Printing Software on a Sun System.

Configuration topics include:

- how to create print queues.
- how to add banner pages to print jobs.



You must be a Super User (Root) in order to perform any of the configuration tasks described in this chapter. Refer to the section, “**Super User Privileges**” on **page 5-4** for instructions on how to accomplish this task.

Creating a Print Queue for a SUN Solaris System

To create a print queue on a SUN Solaris System, you must execute the following commands:

- `make_model`
- `lpshut`
- `lpadmin`

The **`make_model`** command lets you add the printer model to the system. The information that you provide through this command will be used to create a shell script. The shell script will be used by **`lpadmin`** to actually create the print queue.

The `lpshut` command shuts down `lpsched` (i.e., line printer scheduler). You must run this command prior to running `lpadmin`. If you do not shut-down the line print scheduler, the `lpadmin` process will not work. However, once the `lpadmin` command process completes, the `lpsched` command must be reinstated.

Instructions on how to accomplish each of the above tasks are defined in the following sections.

Adding Printer Model Information Using the `make_model` Command

1. From the `/tmp/install` directory, enter the following command at the command line:

```
# ./make_model
```

The following prompt appears

```
# Enter the model name:
```

2. Enter a name for the printer model. Press **RETURN**.

Example:

```
printer2
```

The following prompt appears:

```
Enter the name of the printer:
```

3. Enter a name for the printer. Press **RETURN**.

Note: Printer is the name of the printer as it exists in `/etc/hosts` or `yp/DNS`.

Example:

```
hallway_40
```

The following prompt appears:

Enter the port of the print server:

4. Enter a port number for the print server. Press **RETURN**.

Example:

6869

Note: This is the socket number that sdriver will use for connecting to the printer.

The following prompt appears:

Debug Mode [no, n, yes, y]:

5. Enter **y** to activate the debug mode for the socket driver. Press **RETURN**.

The following prompt appears:

Log Mode [no, n, yes, y]:

6. Enter **y** to activate the log mode. Press **RETURN**.

The following prompt appears:

Enter the pathname of the log file:

7. Enter a pathname for the log file:

Example:

/home/adv/40test

The following prompt appears:

Model printer2 has been created in /usr/lib/ip/model.

Shutting-down the Line Printer Scheduler

lpsched must be shut down before running the lpadmin command; then turned back on once the lpadmin command process completes.

To shut-down lpsched, enter the following command at the command line. Press **RETURN**:

/usr/sbin/lpshut

The following message will appear:

Print Services Stopped

Creating a Print Queue Using the lpadmin Command

Now that **lpsched** has been stopped, the **lpadmin** command will work. Instructions on how to create a print queue are as follows:

1. Enter the following two **lpadmin** commands at the command line. Press **RETURN** after each command entry.

```
# lpadmin -p40_Test -m(model name) -v /dev/null
```

where 40_Test is the queue name and -m is the name of the script created by make_model.

```
# lpadmin -p40_Test -Iany
```

where 40_Test is the queue name and -I is the flag that allows you to include all text, Postscript and PCI files.

2. Enter the following command to reinstate lpsched.

```
# /usr/lib/lpsched
```

The following prompt appears:

```
Print Services Started
```

3. Enter the **lpstat** command at the command line: Press **RETURN**.

Example:

```
# lpstat -p40_test
```

The following message appears:

```
40_test disabled
```

4. Enter the following command at the command line. Press **RETURN**.

```
# enable printer_name
```

Example:

```
# enable 40_test
```

The following message appears:

```
printer "40_test" now enabled.
```

5. Enter the **accept** command at the command line to prepare the print queue to accept requests:

Example:

```
# /usr/sbin/accept 40_test
```

The following message appears:

```
destination "40_test" now accepting requests.
```

Using a Banner Page

A banner page is a lead sheet that can precede a print job. It contains useful information that lets other users who are printing from the same print queue, determine the ownership of a print job. A banner page is also useful for dividing print jobs, in the event that multiple print jobs are in the output tray.

A banner page contains the following information:

- the login name of the user responsible for printing the print job.
- the hostname of the computer from where the print job has originated.
- the file name of the job that is printing. If the user is printing a book file, or another type of file from where multiple documents are queued to print simultaneously, only the name of the first file in the book will appear on the banner page.
- the UNIX system group of the user who printed the print job.
- The time that the print job was submitted to the print queue.
- The print queue name.

Configuring a Banner Page

Including a banner as part of your print job is optional. However, if you elect to include them as part of your print job, you have the option of printing them from the same input tray as the actual print jobs, or from one that is specifically designated for the banners.

Tip:

One way to help distinguish between banner pages and the actual print jobs is to have the banner pages print from a paper tray containing colored paper.

Banner Page Options

A print queue has three options for banner pages. They are:

- NoBanner
Select the “NoBanner” option if you do not want banners to precede your print jobs.
- Default
Select the “Default” option if you want the banner page to print from the printer’s default tray.

- A specific Input Tray for the banner
Select the “Input Tray for the banner” option if you want to print the banner pages in tray that is separate from the tray used by the actual print jobs.

Displaying Banner Options Using the `lpspr` Command

The `lpspr` command lets you view the Printer Dependent Options, including the banner options of a specific printer through the command line interface.

This section describes how to use `lpspr` in its informational mode. To display banner options for a particular printer model, enter the following command at the command line:

Example:

```
% lpspr -W -P xyz
```

where % is the system prompt

where `lpspr` is functioning in an informational mode.

where `-W` will display all of the available options (including banner options) for the printer model.

where `-P` identifies the print queue.



To learn more about how `lpspr` works, refer to Chapter 6, `lpspr` Command.

The following illustrates a typical display of Printer Dependent Options for a printer.



Not all printer dependent options will be available for all printer models.

```
[ -Rresolution ] ::  
  1.) 300dpi  
  2.) 600dpi  
  
[ -Itray ] ::  
  1.) upper  
  2.) middle  
  3.) lower  
  4.) optional  
  
[ -Ssize ] ::  
  1.) letter  
  2.) legal  
  3.) executive  
  4.) 11x17  
  5.) a3  
  6.) a4  
  7.) a5  
  8.) b4  
  9.) b5  
 10.) b4iso  
 11.) b5iso  
 12.) statement  
  
[ -Ksides ] ::  
  1.) none  
  2.) duplexnotumble  
  3.) duplextumble
```



The options listed under the `-Itray` let you print the banner page from a specific tray. You may also use the default tray, or the `NoBanner` option, if either one is more appropriate for your environment. The tray option that you select for the banners is placed in the `printer2mdl` file as described in the section, *Maintaining Banner Page Information in the `printer2mdl` file.*

Maintaining Banner Information in the printer2mdl File

The **printer2mdl** map file maintains a list of all the print queues, printer model names, and banner page options associated with a specific computer system.



The **printer2mdl** map file found in your installation kit is to be used as an example only. It is your responsibility to generate a new version of this file, and to place it in the /etc directory.

To find out more about the printer2mdl file, refer to Chapter 6, “**Printer to Model Map File (printer2mdl)**” on page 6-2

The following is an example of a **printer2mdl** map file:

```
# 'print-queue-name'      'model-name'      'banner-page-selection'

Hallway_Printer2          Printer_2          Middle
Copyroom_Printer3         Printer_3          NoBanner
Reception_Printer1        Printer_1          Default
Engineering_Printer4      Printer_4          NoBanner
```

- where Hallway_Printer2, Copyroom_Printer3, Reception_Printer1 and Engineering_Printer4 all identify the names of the individual print queues on your computer system.
- where Printer_2, Printer_3, Printer_1 and Printer_4 all identify the name of the printer models associated with each, individual print queue.
- where Middle, NoBanner, Default and NoBanner each identify the banner options set for each print queue.

Running the Software

In this chapter, you will learn about three separate commands that will run UNIX Printing Software. Included in this chapter are descriptions for `xlpsprint`, `lpspr` and `sdriver`.

About `xlpsprint` and `lpspr`

Both the `xlpsprint` command and the `lpspr` command give you the ability to manipulate different printer models within a UNIX environment. The difference between the two commands is in the way you enter information into the system. When you enter `xlpsprint` at the command line, a Graphical User Interface (GUI) will appear. From the GUI you can select a printer, and format its output. When you enter `lpspr` at the command line, you have the exact same functionality as `xlpsprint`, except that the tasks must be accomplished through a command line interface.

Both commands require data files known as Postscript Printer Description (ppd) files. Each printer model will have its own PPD file.

Your installation kit also provides configuration files, including a Model to ppd file (`mdl2ppd`). Other files in your installation kit include: a Printer-to-Model Map File (`printer2mdl`) and a `lpsprodb` file. Both files are system specific and are located under the `/etc` directory.

The `mdl2ppd` file, as well as a set of postscript program files used by `xlpsprint` and `lpspr` can be found in the location pointed to by `LPSROOT/ppd`. You select the location of `LPSROOT` during the installation process. Typically, the `mdl2ppd` file and the postscript program files are compatible for all UNIX system types.

A description of the above system files are as follows:

Model-to-ppd File (mdl2ppd)

The **mdl2ppd** file is made up of a number of lines with two items on each line, separated by a space. The first item is the printer model name. The printer model name must be the name that appears in the printer's PPD file. The second item is the name of its corresponding ppd file. Every time that you add a new printer model to the system, you must update the mdl2ppd file with the new printer's ppd file. In addition, every time that you add a new printer model name (case sensitive) to this file, it must be an exact match of the printer model name maintained by the printer2mdl file.



mdl12ppd is a text file that you may edit using a text editor such as vi, or amacs.

Printer to Model Map File (printer2mdl)

The **printer2mdl** map file is supplied in the installation kit only as an example. Because each computer system has its own set of print queues, a separate copy of this file must be added to the **/etc** directory for each system.

The **printer2mdl** map file is made up of a number of lines with three items on each line, separated by a space. The first item is the print queue name. All print queues that are added to this file must point to printers with ppd files. Additionally, both lpspr and xlpssprint rely on this file for print queue, printer model and banner page information. This file **MUST** be updated and **MUST** be correct prior to using lpspr or xlpssprint for printing to any print queue. Both lpspr and xlpssprint will not function correctly until your **printer2mdl** file is updated correctly relative to your environment.

The second item to appear on each line in this file is the model name that is associated with the print queue. The model name is used as a key to search the **mdl12ppd** file. Therefore, make sure that all printer models have a corresponding entry in the **mdl12ppd** file.

The third item is the banner page option. Refer to the section within this document that describes the operating system on which you are installing this software for an explanation of banner pages and this item.



In order for either the GUI or lpspr to work, you will need to set up an association between the printer queue, the **printer2mdl** file and the **mdl12ppd** file.

You must repeat this process for every queue that you want to be included within the GUI and/or to which you want to give lpspr access.

lpsprodb File

During installation, a default version of `lpsprodb` is automatically created. You can modify this version to reflect your current printing needs. Some of the defaults that you can modify within this file include: the Paper Dimension, Page Length, and Page Width.

In addition to providing defaults, `lpsprodb` also contains paths that point to all of the files used by `lpspr` and `xlpsprint`.



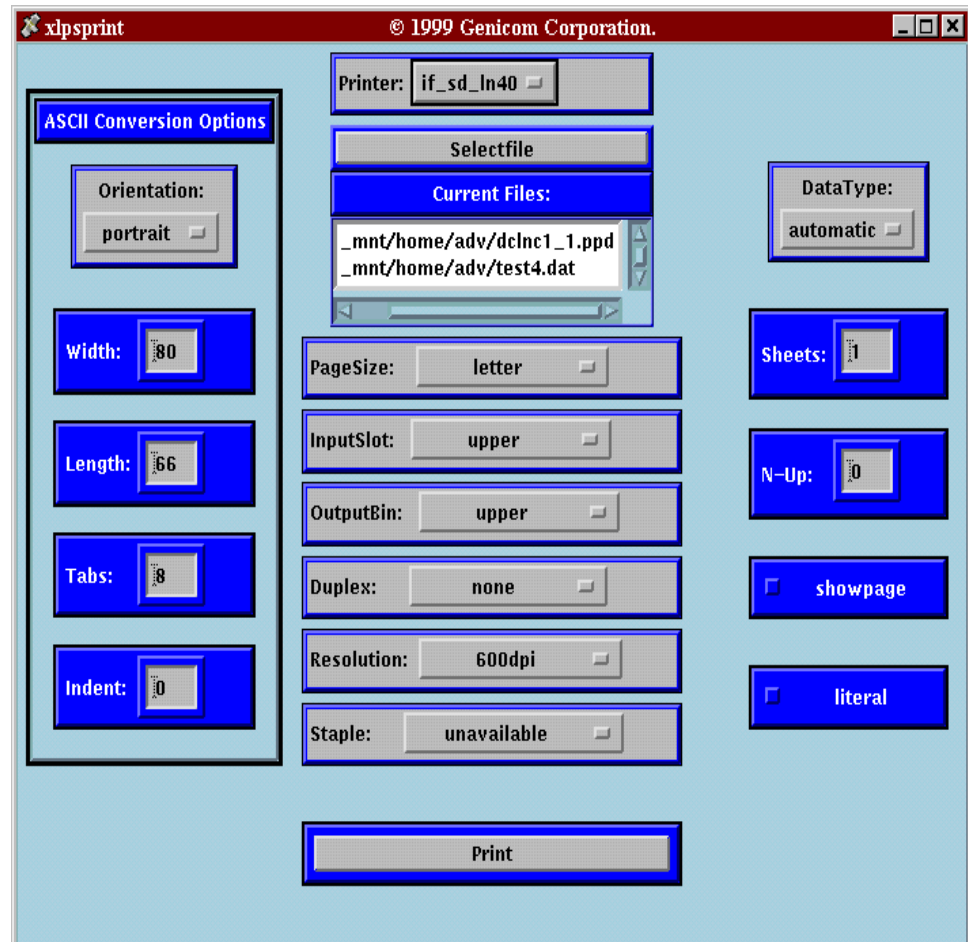
An incorrect entry made to the `lpsprodb` file could cause `lpspr` or `xlpsprint` to fail. Therefore, be very careful with the changes that you make to this file.



`lpsprodb` is a text file that you may edit using a text editor such as `vi`, or `amacs`.

xlpsprint Command

xlpsprint is a command that invokes a program that lets you control different printer models through a GUI.



From this screen, you can select and prepare a printer for printing. You can also select the files that you want to send to the printer.

Displaying xlpsprint

xlpsprint is a motif-based utility. If the display for **xlpsprint** is not on the same system that **xlpsprint** is executing from, you must change the environmental variable so that both xlpsprint and its display will run from the same, local system.

Example:

```
# setenv display 10.10.156:0
```

To display the xlpsprint GUI, enter the following command:

```
# xlpsprint
```

The xlpsprint GUI will appear.

Selecting a Printer

To select a printer from **xlpsprint**, follow the instructions below:

1. Click the **Printer** button.

A window containing a list of available printers for your system appears.

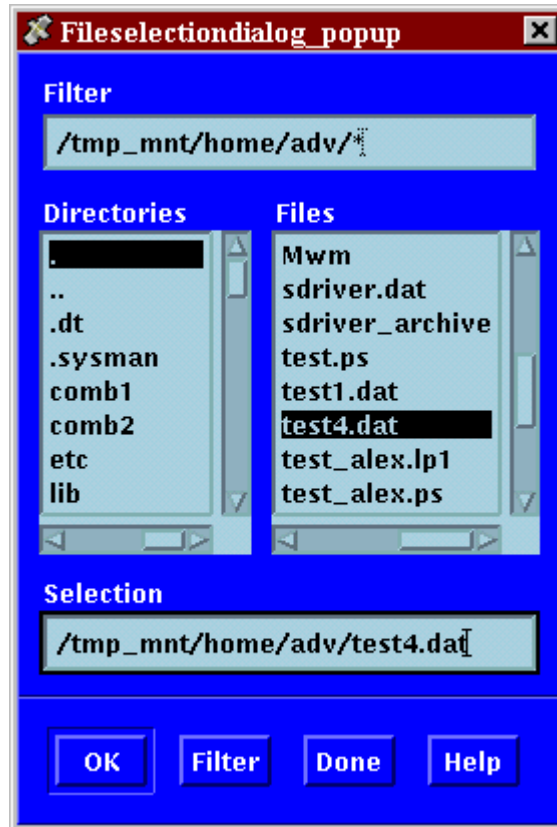
2. Scroll through the list and highlight the printer that you want to select.
3. Go to the next section, Selecting a File to Print from xlpsprint.

Selecting a File to Print from xlpssprint

To select one or more files for printing from xlpssprint, follow the instructions below:

1. Click the **Select File** button.

A popup window containing directories and files appear.



2. Click the directory containing the file that you want to print.
3. Click the file that you want to print.

The file appears in the selection window.

4. Click **OK**.
5. a. Repeat Steps 1 - 4 to select another file to print.
b. Click the **DONE** button if there are no other files to print.

The popup window closes. The file(s) selected to print appear in the Current File Window.

Note: The Current File Window will display two files at a time. If more than two files are selected for printing, use the scroll bar to display the other files in this window.

Filtering Files

The Filter Option on the Select File popup lets you quickly locate a file. Instructions are as follows:

1. Locate the path of the file that you want to print.
2. Place the cursor in the top window displaying the path.
3. Enter the file type that you want to filter (e.g., *.h)
4. Click the **Filter** button for all of the *.h files to appear in the Files window.

Printer Dependent Options

xlpsprint lets you change the default value on all of the printer dependent options. Each option can change or become unavailable depending on the printer model that you select. You can easily identify the default value for each option because it appears on the button next to the option type.

To change the default value of a printer dependent option,

1. Click the button displaying the default value that you want to change
A drop-down window containing a list of valid values for the option opens.
2. Select a new value for the printer dependent option.

Printing a File from xlpsprint

Once you have selected a printer, defined its printing options, and selected the file(s) for printing, you can send the file(s) to the printer by clicking the **Print** button on the GUI. The file(s) will be queued onto the queue you selected in the section, Selecting a Printer.

- PostScript text

Table 6-1. lpspr Command Option Flags

Table 6-1. lpspr Command Option Flags

Flag	Description	Definition
-K	sides	Specifies whether the output is to print on one side of the sheet, on both sides of the sheet, or any other method available for the selected printer model. If this flag is not included on the command line, the output will print according to the printer's default.
-l	literal	Allows typically non-printable characters (e.g., hidden text) to appear within the output.
-N	Pages	Prints the number of logical pages on each physical sheet side. The maximum number of pages on a single sheet side must not be greater than 100.
-O	Orientation	Selects the orientation (i.e., landscape, portrait) of the pages, as they are to be imaged on each sheet. Use 'landscape' or 'land' for landscape mode; and 'portrait' or 'port' for portrait mode.
-o	Output	Selects the output tray where the printed output is to be deposited.
-P	queue	Processes the input for the print queue. Use -W to display all possible values for 'queue'.
-R	Resolution	Selects imaging resolution.
-S	Size	Selects the physical size of the printed sheets.
-T	Staple	Activates the stapling feature, if the printer supports stapling.
-showpage	Showpage	Appends a PostScript 'showpage' operator to the output. This command is useful for obtaining proof copies of Encapsulated Postscript (EPS) files.
-W	What	When used alone, this flag displays all printer models known to lpspr. When used in conjunction with -P <queue> , it displays all available options for the specified printer model.
-Xsheets	# of Sheets	Prints each sheet 'X' number of times. The output is uncollated.

Displaying Printer Options

To display the options of a specific printer enter the following command at the command line, and press **RETURN**.

```
# lpspr -W -P queue
```

where **'queue'** is the name given the printer when the queue was created.

A list of printer dependent options, and default options will appear.

Displaying Print Queues

To display a list of print queues known to **lpspr**, type the following command at the command line, and press **RETURN**.

```
# lpspr -W
```

A list of print queues known to **lpspr** will appear.

Printing Examples

The following example shows how to print a file duplex, using letter-sized paper.

```
# lpspr -P<queue> -Sletter -kduplexnotumble <filename>
```

The following example shows how to print a file, sending output to the top bin.

```
# lpspr -P <queue> -o top <filename>
```



The option parameters used in the above examples, may vary from printer to printer. Use **lpspr -P <queue> -W** to identify the option parameters for your printer.

sdriver

sdriver is a UNIX print filter that drives printers that can support raw TCP/IP sockets. Additionally, sdriver will drive printers that are attached to the network via a print server that can support raw sockets. sdriver is compatible with printing systems that are found in most of the major UNIX operating systems. You use sdriver for sending printable data from standard input to a remote printer.

sdriver General Information

sdriver will establish a network connection to the printer or print server in either a stand-alone mode or a back-end mode, by receiving information that you provide in flags at execution time.



Refer to [Table 6-2, “sdriver Command Option Flags,”](#) on [page 6-13](#) for a list of all available sdriver flags.

Using sdriver in Stand-alone Mode

In stand-alone mode, you can pipe the output from any UNIX command directly to sdriver, which in turn, will send the data to the printer for printing.

sdriver will accept input via standard in (stdin). Data types accepted by sdriver include: PostScript files (including ASCII code and binary image data), DOC, and text files.

To use sdriver in stand-alone mode, enter the following command at the command line:

```
# cat filename | /usr/sbin/sdriver -Phostname -pport
```

where **-P** identifies the host name.

where **-p** identifies the socket number.

Using sdriver in Spooler Back-end Mode

In spooler back-end mode, sdriver acts as the conduit between your spooler and the printer. There are several types of output that sdriver can provide in this mode. These include:

- Spooler sends a file through sdriver to a printer.

sdriver opens a TCP/IP socket to the IP address and port number specified by the user when the queue was created. The spooled stdout is connected to sdriver's

stdin. The user's file is then passed from the spooler through sdriver and on to the printer.

- Event files (optional).

To set up sdriver to log an event file of all of the output data returned by the printer over the raw TCP/IP socket, include the `-L` flag.



In order for the sdriver to be able to open an event file, the printer must be attached to a bi-directional port. If sdriver is attached to a uni-directional port, the event file will still open, but no data will stored.

- Error Logs

To set up the sdriver to log all printer communicating errors to a log file, you must enter Debug Mode. You do this by entering the `-d` flag at the command line.

If you do not include the `-d` flag, sdriver will not go into Debug Mode. Although sdriver will still log to your log file, it will only provide the illegal number of input parameters message.

The following is a list of error conditions that sdriver will report while in Debug Mode:

- Invalid number of arguments entered by user
- Socket creation failure
- Socket open failure
- gethostbyname failure (printer name not in /etc/hosts) on DNS database.
- Connect failure
- Read from stdin failure
- Send data to printer failure
- Shutdown socket failure

Additionally, all backchannel messages generated by a PostScript program will be written to this file.

Sdriver Command Options

The following is a list of command options that you can use to configure sdriver.

Table 6-2. sdriver Command Option Flags

Flag	Parameter	Definition
-d		Activates the sdriver debug mode.
-L		Activates the logging feature.
-p	Port #	Identifies the port number on which the printer or print server is listening. The default port for the sdriver is 35.
-I	netaddr	Identifies the Internet Address of the Printer or Print Server. Note: The -I option is mutually exclusive with the -P flag.
-P	queue	Identifies the name of the print queue as defined in /etc/hosts/ or distributed hosts file (yp). Note: The -P option is mutually exclusive with the -I flag.
-F		Must be added as the first argument when run as a backend filter to lpsched, lpd, or other spoolers.

