DEC PrintServer Supporting Host Software for VMS

Installation Guide

Order Number: AA–PEAHA–TE

This manual describes how to install the PrintServer Supporting Host software on a computer running the VMS operating system.

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Preface

Intended Audience

The *DEC PrintServer Supporting Host Software for VMS Installation Guide* is for the VMS user with system management responsibilities. This manual describes how to install the PrintServer supporting host software, verify the installation, and make any required changes to the system files. You should be familiar with the VMS installation utility (VMSINSTAL), the network control program (NCP), and basic VMS system management procedures.

This manual applies to DEC PrintServer Supporting Host Software for VMS, Version 4.0, and all subsequent maintenance releases up to the next major product release.

Document Structure

The manual contains the following chapters and appendixes:

- Chapter 1 provides an overview of the PrintServer family and describes the preinstallation requirements.
- Chapter 2 describes the installation procedure.
- Chapter 3 describes the procedure for configuring the supporting host software.
- Chapter 4 describes the procedure for booting the printer.
- Chapter 5 contains troubleshooting procedures.
- Appendix A contains a sample installation session.
- Appendix B contains a list of the files created on the supporting host system during the installation procedure.
- Appendix C contains a sample postinstallation dialog session.
- Appendix D describes the procedure for obtaining the Ethernet hardware address from the PrintServer printer.

Associated Documents

The following documents are associated with Digital's PrintServer family of printers. A list of PostScript printer documentation and part numbers for ordering purposes is provided in Appendix E.

VMS PrintServer Supporting Host Manuals

- *DEC PrintServer Supporting Host Software for VMS Management Guide*

VMS PrintServer Client Manuals

- *DECprint Printing Services Software Installation Guide*
- *DECprint Printing Services System Manager's Guide*
- *DECprint Printing Services User's Guide*
- *Installation Guide: VAX PrintServer Client*
- *Management/User's Guide: VAX PrintServer Client*

VMS Manuals

- *VMS Network Control Program Manual*

ULTRIX PrintServer Supporting Host Manuals

- *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*
- *DEC PrintServer Supporting Host Software for ULTRIX Management Guide*
- *DEC PrintServer Source Kit for UNIX Porting Guide*

ULTRIX PrintServer Client Manuals

- *User's Guide: PrintServer Client for ULTRIX*

ULTRIX Manuals

- *Guide to Ethernet Communication Servers*
- *ULTRIX–32 Programmer's Manual*
- *ULTRIX–32 Supplementary Documents Volume 2 Programmer, 4.2BSD Line Printer Spooler Manual*

PostScript Printers Manuals

- *PostScript Printers Programmer's Supplement*
- *PostScript Translators Reference Manual for ReGIS and Tektronix 4010/4014*
- *User Features Card*
- *Digital ANSI–Compliant Printing Protocol Level 3 Programming Reference Manual*
- *Digital ANSI–Compliant Printing Protocol Level 3 Programming Supplement*

PostScript Books by Adobe Systems, Incorporated

- *PostScript Language Reference Manual*
- *PostScript Language Tutorial and Cookbook*
- *PostScript Language Program Design*[1]

PrintServer 20 Series and 40 Series Manuals

- *Font File Format User's Manual*
- *PrintServer 40 Series Operator's Guide*
- *PrintServer 20 Operator's Guide*
- *turbo PrintServer 20 Operator's Guide*
- *turbo PrintServer 20 Installation Guide*
- *turbo PrintServer 20 Upgrade Kit Installation Guide*
- *PrintServer 20 and turbo PrintServer 20 Service Guide*

[1] This book cannot be ordered through Digital's United States Software Supply Business.

Conventions

The following conventions are used throughout this document:

Convention	Meaning
Red	In the printed book, red characters indicate user input in examples.
UPPERCASE	The names of VMS commands, files, and utilities are shown in uppercase. However, you can enter VMS commands in either uppercase or lowercase.
Italics	Italics are used in examples to indicate that you are to substitute a word or value.
[ ]	Brackets in command syntax lines indicate that the enclosed item is optional.
Bold	Boldface text indicates PostScript operators. For online display, boldface text also indicates user input in examples.
Ctrl/*x*	In examples, indicates that you should press the Ctrl key while you simultaneously press another key, for example, Ctrl/Z.
Return	This symbol indicates that you should press the Return key.

1

Preparing to Install DEC PrintServer Supporting Host Software for VMS

This chapter describes the information and computing environment that you must prepare in order to install PrintServer supporting host software. The specific topics are as follows:

- Digital's PrintServer family, Section 1.1
- Installing supporting host software, Section 1.2
- Installation requirements, Section 1.3
- Backing up your system disk, Section 1.4

1.1 Digital's PrintServer Systems

Digital's family of PrintServer printers consists of a group of compatible network printers that can be shared by a number of systems. The PrintServer printer is one node in the DECnet network.

A node that provides management services is called a supporting host node. A node that can send print jobs to the PrintServer printer is called a print client node. These network nodes are not mutually exclusive; a DECnet node can run PrintServer supporting host software as well as print client software.

The supporting host node provides support functions to the PrintServer system. The supporting host node may be running either DEC PrintServer Supporting Host Software for VMS or DEC PrintServer Supporting Host Software for ULTRIX. The installation procedure for PrintServer supporting host for ULTRIX is documented in *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*.

In a typical installation, a PrintServer system has one supporting host for booting and management. If you define multiple supporting hosts for the PrintServer printer, the printer can have a backup supporting host, in case the primary host is not available. The configuration and management of multiple

supporting hosts are described in *DEC PrintServer Supporting Host Software for VMS Management Guide*.

Each PrintServer printer is a DECnet node in the Ethernet network and must be assigned a unique DECnet node name and node address. The PrintServer printer can be booted from a DECnet supporting host node by the Digital maintenance operation protocol (MOP). The boot procedure is described in Chapter 4.

The nodes that use the PrintServer printer for printing are called print clients. The print client software for VMS systems may be either one of the following:

- DECprint Printing Services software

  Installation of the DECprint Printing Services client software is described in the *DECprint Printing Services Software Installation Guide*.

- PrintServer Client software

  The PrintServer Client software is superseded by the DECprint Printing Services software. The installation procedure for the PrintServer Client software is described in the *Installation Guide: VAX PrintServer Client*.

The client software for ULTRIX systems is called PrintServer Client for ULTRIX software and is included with the ULTRIX operating system software.

The PrintServer system can accept connections from both DECnet nodes and Internet nodes that are on the same network as the printer. If your PrintServer printer will be printing jobs from an Internet node, the PrintServer printer must be assigned an Internet node address as well as DECnet node address.

1.2 Installing Supporting Host Software

To install the PrintServer supporting host software, follow the steps listed in the following tables.

- If you are installing the software on the system for the first time, follow the steps in Table 1–1.
- If you are upgrading the system from a previous version of the software, follow the steps in Table 1–2.

Table 1–1 Steps for Installing the Software

Step	Procedure	Section Reference
1	Review installation requirements.	Chapter 1
2	Run VMSINSTAL.	Chapter 2
3	Execute LPS$ADD_PRINTSERVER.COM.	Section 3.4
4	Edit the system startup file.	Section 3.5
5	Boot the PrintServer printer.	Chapter 4

Table 1–2 Steps for Upgrading the Software

Step	Procedure	Section Reference
1	Review installation requirements.	Chapter 1
2	Run VMSINSTAL.	Chapter 2
3	Execute LPS$ADD_PRINTSERVER.COM.	Section 3.4
4	Edit the system startup file.	Section 3.5
5	Remove old versions of the software.	Section 3.6.1
6	Remove old proxy access to LPS$SERVER account.	Section 3.6.2
7	Boot the PrintServer printer.	Chapter 4

1.3 Installation Requirements

This section describes requirements for installing PrintServer supporting host software.

The entire installation procedure may take up to 30 minutes, depending on your type of media and your system configuration.

1.3.1 Privileges and Disk Space

To install PrintServer supporting host software, log in to the system manager's account. The following minimum privileges are required to install the software:

- SETPRV
- CMKRNL
- WORLD
- SYSPRV

VMSINSTAL disables the BYPASS privilege at the beginning of the installation procedure.

The disk space required for installing the PrintServer supporting host software is 9800 disk blocks. The system requires at least 9500 blocks after installation to run the supporting host software.

Use the SHOW DEVICE command to display the current disk space statistics. For example, if you intend to install the software on the system disk, enter the following command:

```
$ SHOW DEVICE SYS$SYSDEVICE
```

1.3.2 Prerequisite Hardware

Table 1–3 describes the hardware items needed to install PrintServer supporting host software.

Table 1–3 Hardware Requirements for Installing the Software

Item	Explanation
A PrintServer printer	You may have one or more of the following types of PrintServer printers: PrintServer 40 PrintServer 40 Plus PrintServer 20 turbo PrintServer 20
Ethernet controller	The supporting host system configuration must include an Ethernet controller connected to a transceiver on the Ethernet. The supporting host must be on the same Ethernet network as the PrintServer printer.[1]
Input device	The supporting host system configuration must include an input device appropriate for the software distribution media. The PrintServer supporting host software is available on the following types of media: • Magnetic tape (1600 bits/inch) • TK50 cartridge • CDROM (compact disc read-only memory)

[1]The PrintServer printer may be connected to a different Ethernet than its supporting host when the two Ethernets are connected by a local area network (LAN) bridge that does not filter boot requests. Refer to Section 5.3.2.5.

1.3.3 Prerequisite Software

To install the DEC PrintServer Supporting Host Software for VMS, the supporting host system must be running VMS Version 5.3 or 5.4.

After the installation, the system must be running the DECnet facility to run the supporting host software.

The System Support Addendum (SSA) contains a complete list of prerequisite and optional software and required version numbers.

The PrintServer supporting host software is packaged in two save sets:

- LPS040.A, which contains installation procedures, release notes, help files, PostScript files, and utilities
- LPS040.B, which contains executable and system files

Your bill of materials (BOM) and indented bills report (BIL) specify the number and contents of your media. Be sure to verify the contents of your kit with this information. If your kit is damaged or you find that parts are missing, contact your Digital representative.

1.3.4 Obtaining Release Notes

The PrintServer supporting host software provides online release notes. Digital recommends that you read the release notes before proceeding with the installation.

To obtain the release notes for PrintServer supporting host software, run the VMSINSTAL procedure. When you run VMSINSTAL, the release notes are automatically copied to SYS$HELP.

The VMSINSTAL procedure allows you to either print or display the release notes. After choosing the release notes option, you can terminate the installation dialog and run it again to install the software later. (Refer to Section 2.1.)

1.3.5 User Identification Code and Device Name

If this is the first installation of the supporting host software on this system, you must supply the following:

- A user identification code (UIC) for the LPS$SERVER account.
- A device for the supporting host software default directory. The standard default device is SYS$SYSDEVICE.

The installation procedure provides a default UIC value of [477,477]. If you select another value, make sure the group number value does not give system privileges to the LPS$SERVER account.

Choose a group number for the LPS$SERVER account that is greater than the MAXSYSGROUP value. To select a group number, check the System Generation Utility (SYSGEN) MAXSYSGROUP parameter, as follows:

```
$  RUN SYS$SYSTEM:SYSGEN
SYSGEN>   SHOW MAXSYSGROUP

Parameter Name            Current   Default   Minimum   Maximum Unit  Dynamic
--------------            -------   -------   -------   ------- ----  -------
MAXSYSGROUP                     8         8         1     32768 UIC   Group D
```

1.3.6 VMSINSTAL Requirements

When you invoke VMSINSTAL, it checks the following:

- Whether you are logged in to a privileged account
- Whether you have adequate quotas for installation
- Whether any users are logged in to the system

The VMSINSTAL procedure requires that the installation account have minimum values for the quotas listed below:

ASTLM	24
BIOLM	18
BYTLM	18,000
DIOLM	18
ENQLM	30
FILLM	20

Account quotas are stored in the SYSUAF.DAT file. Use the VMS Authorize Utility (AUTHORIZE) to verify and change user account quotas. Set your directory to SYS$SYSTEM and then run AUTHORIZE:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN AUTHORIZE
UAF>
```

At the UAF> prompt, enter the SHOW command with an account name to check a particular account. For example:

```
UAF>  SHOW SYSTEM
```

To change a quota, enter the MODIFY command. The following example changes the FILLM quota for the SYSTEM account and then exits from the utility:

```
UAF>  MODIFY SYSTEM/FILLM=50
UAF>  EXIT
```

After you exit from the utility, the system displays messages indicating whether or not changes were made. After you change account quotas, you must log out and log in again for the new quotas to take effect.

For more information on modifying account quotas, see the description of the Authorize Utility in the VMS System Management Subkit.

If VMSINSTAL detects any problems during the installation, it notifies you and asks if you want to continue the installation. In some instances, you can enter Yes to continue. To stop the installation process and correct the situation, enter No or press Return. Then correct the problem and restart the installation.

1.3.7 Environmental Requirements

Make sure the following conditions are met before installing the PrintServer supporting host software:

- You have a backup copy of the PrintServer supporting host software distribution kit.
- The distribution media is loaded on the appropriate input device.
- No other users are logged in to the system.
- All other supporting hosts installed for the same PrintServer printer are disabled, as described in Section 5.3.2.7.
- The logical name that points to the system authorization file is defined correctly.

  If SYSUAF is not defined, define SYSUAF to point to the SYSUAF.DAT file. Otherwise, the installation assumes that the file SYSUAF.DAT is in the SYS$SYSTEM directory.
- If you are upgrading the supporting host software, make sure that the logical name LPS$SUPPORT points to the LPS$SERVER default directory.

Note

To verify whether a logical name is defined correctly, enter the following command:

```
$ SHOW LOGICAL logical-name
```

1.4 Backing Up Your System Disk

At the beginning of the installation, VMSINSTAL asks if you have backed up your system disk. Digital recommends that you back up the system disk before you install any software.

Use the backup procedures that are established at your site. For details on performing a system disk backup, see the section on the Backup Utility in the VMS System Management Subkit.

2

Installing DEC PrintServer Supporting Host Software

This chapter explains how to install PrintServer supporting host software.

- Section 2.1 contains a step-by-step description of the installation procedure.
- Section 2.2 explains how to complete the installation.
- Section 2.3 describes the conditions under which errors can occur.

2.1 Installation Procedure

The PrintServer supporting host installation procedure consists of a series of questions and informational messages. See Appendix A for a sample installation.

Note

You can terminate the installation procedure at any time by pressing Ctrl/Y. When you press Ctrl/Y, the installation procedure deletes all files it has created up to that point and exits. You can then restart the installation.

To install the PrintServer supporting host software, complete the following steps. To get help during this installation, enter a question mark (?) at any time.

1. **Invoke VMSINSTAL.**

   To start the installation, invoke the VMSINSTAL command procedure from the system manager's account. The VMSINSTAL procedure is in the SYS$UPDATE directory.

   ```
   $ @SYS$UPDATE:VMSINSTAL saveset-name device-name OPTIONS N
   ```

   The following list defines the elements of the VMSINSTAL command line:

saveset-name
The installation save set name for the component. PrintServer supporting host uses the save set name LPS040.

device-name
The name of the device on which you plan to mount the media, for example, MUA0:. It is not necessary to use the console drive for this installation. However, if you use the console drive, you should replace any media you removed before beginning the installation.

OPTIONS N
An optional parameter that allows you to see the question on release notes. If you do not include the OPTIONS N parameter, VMSINSTAL does not ask you about the release notes. You should review the release notes before proceeding with the installation because they may contain additional information about the installation. If you are restarting the installation and have already reviewed the release notes, you do not need to specify OPTIONS N.

For example, the following command line invokes VMSINSTAL to install PrintServer supporting host software from tape drive MUA0: and shows the system response. This example uses the OPTIONS N release note parameter.

```
$  @SYS$UPDATE:VMSINSTAL LPS040 MUA0: OPTIONS N

      VAX/VMS Software Product Installation Procedure V5.3-2

It is 01-JUN-1991 at 11:07.
```

If you do not supply the information that is shown on the command line, VMSINSTAL prompts you for this information later in the installation procedure.

2. **Continue the installation.**

   VMSINSTAL tells you that you can enter a question mark (?) at any time for help. It displays a list of all active processes.

```
Enter a question mark (?) at any time for help.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
        DECW$TE_1
        _TWA5:
        SMITH
        DECW$WM_1
        SMITH_SM1

* Do you want to continue anyway [NO]?  ?
```

To continue the installation, enter Yes. To terminate VMSINSTAL, enter No or press Return.

If you respond with a question mark (?), VMSINSTAL displays this explanation:

```
The above conditions may cause VMSINSTAL to function improperly.  In
particular, problems may occur with file ownership if you are not logged
into the SYSTEM account.  Furthermore, the existence of other processes
may lead to interactions with VMSINSTAL that cannot be anticipated.
If you continue at this point, you do so at your own risk.

* Do you want to continue anyway [NO]?  Y
```

3. **Confirm system backup.**

   VMSINSTAL asks if you are satisfied with your system backup. You should always back up your system disk before performing an installation. If you are satisfied with the backup of your system disk, press Return. Otherwise, enter No to terminate the installation. After you back up your system disk, you can restart the installation.

   ```
   * Are you satisfied with the backup of your system disk [YES]?  ?
   ```

   If you respond with a question mark (?), VMSINSTAL displays this explanation:

   ```
   VMSINSTAL attempts to ensure that a power failure or system crash will
   not corrupt your system disk.  However, for absolute safety we
   recommend that you back it up before installing new products.  Please
   see the documentation for more information on crashes during installation.

   * Are you satisfied with the backup of your system disk [YES]?  Y
   ```

4. **Mount the media.**

   VMSINSTAL now asks you to mount the first distribution volume on the device you specified when you invoked the VMSINSTAL procedure.

   ```
   Please mount the first volume of the set on  MUA0:.
   * Are you ready?  Y

   %MOUNT-I-MOUNTED, LPS040 mounted on _MUA0:.

   The following products will be processed:
     LPS V4.0

    Beginning installation of LPS V4.0 at 11:09

   %VMSINSTAL-I-RESTORE, Restoring product save set A ...
   ```

   In this part of the installation, VMSINSTAL displays the name of the product that will be processed. Then it restores the contents of product save set A. Finally, VMSINSTAL asks you to select one of the release notes options.

5. **Select a release notes option.**

   If you specified OPTIONS N when you invoked VMSINSTAL, you are now asked to choose one of the options for reviewing the release notes. Regardless of the option you choose, VMSINSTAL copies the release notes to SYS$HELP.

```
    Release notes included with this kit are always copied to SYS$HELP.

    Additional Release Notes Options:

        1.  Display release notes
        2.  Print release notes
        3.  Both 1 and 2
        4.  None of the above

* Select option [2]:  2
```

   - If you select option 1, VMSINSTAL displays the release notes immediately on the console terminal. Terminate the display at any time by pressing Ctrl/C.
   - If you select option 2, VMSINSTAL prompts you for the name of the print queue that you want to use:

     ```
     * Queue name: [SYS$PRINT]:
     ```

     Press Return to send the file to the default print queue or you can enter another queue name.
   - If you select option 3, VMSINSTAL displays the release notes immediately on the console terminal and then prompts you for a queue name for printing the release notes.
   - Select option 4 if you have already reviewed the release notes and are restarting the installation. VMSINSTAL then asks if you want to continue the installation.

6. **Continue the installation.**

```
* Do you want to continue the installation [NO]?:  Y
```

   To continue the installation, enter Yes. Otherwise, press Return. In either case, the product's release notes are copied to a file in the SYS$HELP directory:

```
SYS$HELP:LPS040.RELEASE_NOTES
```

   VMSINSTAL displays the message telling you that the release notes have been moved successfully to SYS$HELP.

```
VMSINSTAL-I-RELMOVED, The product's release notes have been successfully
moved to SYS$HELP
```

7. **Purge files.**

   The VMSINSTAL software checks to see if a previous version of the software has been installed. If not, the VMSINSTAL procedure skips this question.

   VMSINSTAL asks if you want to purge files replaced by this installation. You have the option to purge files from previous versions of the PrintServer supporting host software that are superseded by this installation. Purging is recommended; however, if you need to keep files from the previous version, enter No in response to the question.

   If you respond with a question mark (?), VMSINSTAL displays this explanation:

```
During this installation, new files will be provided to replace
existing versions.  You may purge these older versions to save
disk space, or keep them if you feel they may be of use.  Purging
is recommended.

* Do you want to purge files replaced by this installation [YES]?  Y
```

8. **Install the ALL–IN–1 Compatibility Kit**

   VMS asks you if you want to install the ALL–IN–1 Compatibility Kit.

   If you respond with a question mark (?), VMSINSTAL displays the following:

```
Requires 1900 blocks, provides ALL-IN-1 scripts for PostScript printing
Do you want to install the ALL-IN-1 Compatibility Kit? [Y]  N
```

   For the installation upgrade procedure, VMSINSTAL asks no more questions. Go directly to the informational messages.

   For a new installation, the VMSINSTAL procedure asks the following questions.

9. **Enter a user identification code (UIC) for LPS$SERVER account.**

   Note

   This question is asked only if the LPS$SERVER account does not already exist.

   You can either accept the default UIC or enter one of your own choosing within a valid range and in the proper format. Refer to Section 1.3.5. The system displays the following information for choosing a UIC:

```
This installation will create an account named LPS$SERVER.
The UIC of this account will be used by the management client process
to provide the PrintServer with its secondary boot files and to
create event log and accounting files on this supporting host system.

You must specify a unique UIC for this account. In order to maintain
proper system security, please choose a UIC with a group number that does
not give the account system privileges.

Enter the UIC for LPS$$SERVER account (include brackets)
[[477,477]]:  Return
```

If you press Return in response to this question, the default UIC [477,477] is assumed.

10. **Enter a default device for the LPS$SERVER directory.**

Note

This question is asked only if the LPS$SERVER account does not already exist.

You can either accept the default device or enter one of your own choosing. Refer to Section 1.3.5.

```
Enter the name of one of the disk devices available on your host system.
Be sure that the device you specify has at least 9800 free blocks.

Enter the device name where the supporting host directory will
be created [[SYS$SYSDEVICE]]:  Return
```

If you press Return in response to this question, the default device SYS$SYSDEVICE is assumed.

11. **Read informational messages.**

At this point, the installation procedure displays information about the progress of the installation. There are no further questions.

If this is a new installation, VMSINSTAL displays messages pertaining to account creation.

```
%LPS-I-CREATE_ACCOUNT, Creating LPS$SERVER account for the PrintServer
Supporting Host
%VMSINSTAL-I-ACCOUNT, This installation creates an account named LPS$SERVER.
%UAF-I-ADDMSG, user record successfully added
%VMSINSTALL-I-ACCOUNT, This installation updates an account named LPS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated

%LPS-I-ADD_LOGICALS, Creating the LPS$SUPPORT and LPS$ROOT logicals.
```

If you are performing an upgrade, the following lines replace the %LPS-I-ADD_LOGICALS message:

```
%LPS-I-SH_LOGICAL_EXISTS, the LPS$SUPPORT logical exists. Assume it is
correct.

VMSINSTAL-I-SYSDIR, This product creates system disk directory
LPS$ROOT:[CAT]
VMSINSTAL-I-SYSDIR, This product creates system disk directory
LPS$ROOT:[SYS]
VMSINSTAL-I-SYSDIR, This product creates system disk directory
LPS$ROOT:[SYS.HLP.EXAMPLES.LPS]

%VMSINSTAL-I-RESTORE Restoring product saveset B...
```

When the installation is finished, VMSINSTAL displays the following:

```
The installation of DEC PrintServer Supporting Host Software for VMS
has completed successfully.
```

Next, VMSINSTAL displays information on the postinstallation procedure. This procedure is described in Chapter 3.

```
You must perform the following postinstallation procedures, regardless of
whether you are upgrading the software or installing for the first time
on this system:

* Execute SYS$MANAGER:LPS$ADD_PRINTSERVER.COM

* Follow the instructions in the installation guide for editing your system
  specific startup command procedure.

Please refer to the DEC PrintServer Supporting Host for VMS Installation
Guide for further instructions.
```

If you are performing an upgrade, the following item is also displayed:

```
* Follow the instructions in the installation guide for removing obsolete
files and proxy access.
```

12. **End the installation procedure.**

The following messages indicate that the entire installation procedure is complete:

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...
        Installation of LPS V4.0 completed at 11:33

        VMSINSTAL procedure done at 11:33
$
```

VMSINSTAL deletes or changes entries in the process symbol tables during the installation. Therefore, if you plan to continue using the system manager's account and you want to restore these symbols, you should log out and log in again.

You can now log out of the privileged account:

```
$  LOGOUT
SYSTEM     logged out at 1-JUN-1991 11:34:03.64
```

Section 2.3 describes error messages you may encounter during the VMSINSTAL procedure and how to recover from those errors.

2.2 Completing the Installation

After you have run VMSINSTAL successfully to install the software, perform the following steps to complete the software installation:

- Run LPS$ADD_PRINTSERVER.COM, as described in Section 3.4.
- Edit the system startup file, as described in Section 3.5.
- Boot the printer, as described in Chapter 4.

Note

For installations upgrading from a previous version of the supporting host software, follow the procedures in Section 3.6 as well.

2.3 Error Conditions

If errors occur during the installation, VMSINSTAL displays error messages. If the installation fails, you see the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of LPS040 has failed.
```

Errors can occur during the installation if any of the following conditions exist:

- Insufficient disk space is allocated.
- The operating system version is incorrect.
- System parameter values for successful installation are insufficient.
- The VMS help library is currently in use.

2.4 VMSINSTAL Messages

The following sections list the messages issued by the installation procedure. Refer to the *Guide to VAX/VMS Software Installation* for explanations of messages issued by VMSINSTAL.

2.4.1 Message Format

System messages issued during the installation procedure have the following format:

```
%LPS-s-ident, text
```

In the message format, the following types of information are displayed:

%	is the prefix to all primary messages.
LPS	is the source designation of the messages.
s	is the severity level of the message.
ident	is an abbreviation of the message text.
text	is the expanded text of the message.
–	is the prefix to all continuation messages.

2.4.2 Severity Level

VMSINSTAL messages have one of the following severity levels:

Code	Meaning	Explanation
S	Success	The request has been completed successfully.
I	Informational	User action may or may not be required.
W	Warning	The request may not have been completed and may require user action.
E	Error	The system encountered an error that may be recoverable.
F	Fatal	The system encountered a fatal error and cannot continue processing this request.

2.4.3 Message Descriptions

The following message descriptions are alphabetized by the *ident* portion of the message code. The message prefix, source designation, and severity code are not shown.

ADD_LOGICALS, Creating the LPS$SUPPORT and LPS$ROOT logicals.

Explanation: This is an informational message. The installation procedure is defining these logicals.

User Action: None.

BADACC, The existing LPS$SERVER account cannot be used. Please delete or repair it before reattempting the installation.

Explanation: The installation procedure cannot find the LPS$SERVER account's default directory. The installation is aborted.

User Action: Make the directory accessible. If that is not possible, delete the LPS$SERVER account and restart the installation.

BADUAF, Serious problem with system authorization file.

Explanation: The system authorization file (SYSUAF.DAT) could not be located, could not be accessed, or had a problem that caused the Authorize utility to fail when attempting to update it.

User Action: Check to see if the SYSUAF.DAT file is accessible (refer to Section 1.3.7). If this file exists and the system logicals are set up, call your Digital Customer Services representative. The software installation procedure cannot succeed until this problem is solved.

CREATE_ACCOUNT, Creating LPS$SERVER account for the PrintServer Supporting Host.

Explanation: This is an informational message. The LPS$SERVER account is added to the SYSUAF file.

User Action: None.

EXISTS, The LPS$SERVER account already exists with *device-name:*[LPS$SERVER] as its default directory.

Explanation: This is an informational message. A version of the PrintServer supporting host software is already installed on this system.

User Action: None.

NO_DISK_DEVICE, Not a valid device.

Explanation: The device name you selected is not valid.

User Action: Enter a valid device name.

NO_DISK_SPACE, *product-name* requires *decimal-number* disk blocks for this installation.

Explanation: Not enough disk blocks are available to install this software. The installation requires at least 9800 free disk blocks on the installation device. The installation procedure is automatically terminated.

User Action: Ensure that you have at least the specified number of free disk blocks and restart the installation.

NO_MORE_QUESTIONS, No further questions will be asked during this installation.

Explanation: This is an informational message. You will not be asked any more questions during the installation procedure.

User Action: None. This is an informational message.

NO_SH_LOGICAL, The LPS$SUPPORT logical does not exist.

Explanation: The installation procedure could not find the definition for LPS$SUPPORT during an upgrade.

User Action: None. The installation procedure creates one automatically.

SH_LOGICAL_EXISTS, The LPS$SUPPORT logical exists. Assume it is correct.

Explanation: The installation procedure found a definition for LPS$SUPPORT.

User Action: No action is required if the logical definition is correct. Refer to Section 1.3.7.

UIC_ENTER_UNIQUE, Please enter a unique UIC.

Explanation: The user identification code (UIC) value entered is already in use.

User Action: Select another UIC value.

UIC_INUSE, The UIC you have specified is already in use.

Explanation: The user identification code (UIC) value entered is already in use.

User Action: Select another UIC value.

UIC_INVALID, The UIC you have entered is invalid.

Explanation: You entered a value for a user identification code (UIC) using the wrong syntax.

User Action: Enter a valid UIC or enter a question mark (?) for help.

UIC_PRIVILEGED, The UIC you have chosen is privileged. Please select another.

Explanation: You entered a value for a user identification code (UIC) that is not available. Refer to Section 1.3.5.

User Action: Enter a valid UIC or enter a question mark (?) for help.

UPGRADE_VMS, Please install version *decimal-number* or later of VMS before installing DEC PrintServer Supporting Host Software for VMS, Version 4.0.

Explanation: The version of the VMS operating system is not the version required for the PrintServer supporting host software. The supporting host software requires VMS Version 5.3 or 5.4.

User Action: Upgrade your VMS software to the required version.

WRONG_VMS, DEC PrintServer Supporting Host Software for VMS, Version 4.0 requires version 5.3 or later of VMS.

Explanation: The supporting host software requires VMS Version 5.3 or 5.4.

User Action: Upgrade your system to VMS Version 5.3 or 5.4.

3

Configuring the Supporting Host Software

This chapter describes the procedures for configuring the supporting host software.

If you are installing or upgrading the PrintServer supporting host software, perform the following procedures:

1. Prepare the information you will need to configure the supporting host software, as described in Section 3.1. Section 3.2 is useful when you upgrade the supporting host software. Section 3.3 is useful for all installations and upgrades.
2. Run the configuration dialog procedure SYS$MANAGER:LPS$ADD_PRINTSERVER.COM, to configure the primary supporting host software, as described in Section 3.4.
3. Edit the system startup file, as described in Section 3.5.
4. Boot the printer, as described in Chapter 4.

If you are upgrading the PrintServer supporting host software from an existing version, perform the following additional procedures before booting the printer:

1. Remove files left by older versions of the software, as described in Section 3.6.1.
2. Remove proxy access to the LPS$SERVER account, as described in Section 3.6.2.

To configure additional supporting hosts for the PrintServer printer, refer to Section 3.7.

3.1 Preparing to Configure Supporting Host Software

Before you can boot your PrintServer printer, you must add the printer to the DECnet network control program (NCP) database and provide supporting host services. Perform this procedure regardless of whether you are upgrading existing software or installing this software on this system for the first time.

To set up the system as a primary supporting host, you run the standard command procedure LPS$ADD_PRINTSERVER.COM. This postinstallation procedure is described in Section 3.4.

The LPS$ADD_PRINTSERVER command procedure does the following:

- Describes the network database additions for the supporting host.
- Configures and creates a management client process that provides the PrintServer printer with its secondary boot, configuration, resource, and default files.

When you run LPS$ADD_PRINTSERVER.COM, you must provide the information shown in Table 3–1. You can prepare this information before you start the LPS$ADD_PRINTSERVER.COM file. Prepare one of these record sheets for each PrintServer printer that the supporting host system will service.

- If you are upgrading from a previous version of the PrintServer supporting host software, use the instructions in Section 3.2.
- If you are installing the PrintServer supporting host software for the first time on this system, go to Section 3.3 for instructions on obtaining the information you must provide to the LPS$ADD_PRINTSERVER.COM procedure.

Table 3–1 Configuration Data

Data Needed	Record Information Here	See for Reference
❶ DECnet node name for PrintServer		Section 3.3.1
❷ PrintServer type (20 or 40)		Section 3.3.2
❸ DECnet address for PrintServer		Section 3.3.3
❹ Supporting host service circuit		Section 3.3.4
❺ PrintServer Ethernet hardware address		Section 3.3.5
❻ Accounting feature (Yes, No, or Reliable)		Section 3.3.6
❼ Event logging feature (Yes or No)		Section 3.3.7
❽ Printer password		Section 3.3.8
❾ PrintServer 20 front panel language		Section 3.3.9
❿ DECnet access restrictions (Yes or No)		Section 3.3.10
If yes, supply DECnet addresses of nodes allowed access		
Supply DECnet addresses of nodes denied access		
⓫ Internet connections (Yes or No)		Section 3.3.11
If yes, supply PrintServer Internet address		
Supply Internet subnet mask		
Supply Internet gateway address		
⓬ Internet access restrictions (Yes or No)		Section 3.3.12
If yes, supply Internet addresses of nodes allowed access		
Supply Internet addresses of nodes denied access		

3.2 Configuration Information for Upgrades

You can use the information in the existing LPS$NETSETUP.COM file to supply items 1 through 5 in the LPS$ADD_PRINTSERVER.COM procedure.

3.3 Configuration Information for New Installations

The following sections explain the questions in the postinstallation dialog.

3.3.1 DECnet Node Name

Question ❶ in the sample dialog in Section 3.4 requires you to supply the DECnet node name of the PrintServer printer.

The DECnet node name of the PrintServer printer is required for defining the PrintServer node in the NCP database. The node name is assigned by the network manager; it must be unique within your DECnet network and must consist of an alphanumeric string of one to six characters with at least one alphabetic character.

Some examples of DECnet node names are:

- HALLEY
- LPS40
- 2001AD

The DECnet node name that you supply to LPS$ADD_PRINTSERVER.COM will be used as the PrintServer printer name by default. To change the printer name, refer to the procedures in the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

3.3.2 PrintServer Type

Question ❷ in the sample dialog in Section 3.4 requires you to specify the type of PrintServer printer that is being configured.

Specify a number that corresponds to the type of PrintServer printer that is going to be set up. Enter one of the following values:

- 1 for a PrintServer 40 or a PrintServer 40 Plus
- 2 for a PrintServer 20 or a turbo PrintServer 20

3.3.3 DECnet Node Address

Question ❸ in the sample dialog in Section 3.4 requires the DECnet node address for the PrintServer printer. The DECnet address is a set of numbers used by the DECnet software to identify the DECnet node. This logical address is different from the Ethernet hardware address (described in Section 3.3.5).

The DECnet node address is assigned to the PrintServer node by the network manager. A node address is a unique decimal integer assigned to each node in a network. The format of the address is:

```
[area-number.]node-number
```

In the DECnet address, the following fields are specified:

- The *area-number* is a number in the range 1–63. If the area number is omitted, the default is the area number of the supporting host node.
- The *node-number* is a number in the range 1–1023.

Example:

To determine the node address of a PrintServer printer, enter the following command:

```
$ MCR NCP SHOW NODE printer-node-name CHARACTERISTICS
```

The system responds with the PrintServer node address:

```
Node Volatile Characteristics as of 01-APR-1991 13:56:08.25

Remote node = 4.125 (HALLEY)

. . .
```

In this example, the DECnet node name is HALLEY, and the DECnet node address is 4.125.

3.3.4 Service Circuit

Question ❹ in the sample dialog in Section 3.4 asks for the service circuit on the supporting host system that is used to service boot requests from the PrintServer printer that is being configured.

The service circuit takes one of the following formats:

```
dev-c
dev-c-u
dev-c.t
dev-c-u.t
```

In the service circuit name, the following fields are specified:

dev	is the device name of the Ethernet controller.
c	is a decimal number (0 or a positive integer) designating the number of the hardware controller for the device.
u	is a decimal unit or circuit number (0 or a positive integer) included only if more than one unit is associated with the controller.
t	is a decimal number (0 or a positive number) that identifies a tributary on a multipoint circuit. This is a logical tributary number, not the tributary address used to poll the tributary.

For example, the service circuit name might be:

```
SVA-0
```

To determine the service circuit, enter the following command:

```
$  MCR NCP SHOW KNOWN CIRCUITS
```

For more information on service circuits, see the *VMS Network Control Program Manual*.

Enabling a Service Circuit

The LPS$ADD_PRINTSERVER.COM file reminds you to enable the service circuit. You can ensure that the service circuit is enabled automatically by adding the following commands to LPS$NETSETUP_V4.COM:

```
$ MCR NCP SET CIRCUIT circuit_name STATE OFF
$ MCR NCP SET CIRCUIT circuit_name SERVICE ENABLED STATE ON
```

To see if the service circuit is enabled, enter the following command:

```
$  MCR NCP SHOW CIRCUIT circuit_name CHAR
```

3.3.5 PrintServer Ethernet Hardware Address

Question ❺ in the sample dialog in Section 3.4 requires the Ethernet hardware address of the PrintServer printer.

The format of the Ethernet address is a series of six hexadecimal numbers, each of which range from 00–FF.

An example of an Ethernet hardware address is:

```
08-00-2B-0C-86-3F
```

If the Ethernet hardware address is not already available, you can obtain the address from the PrintServer printer (refer to Appendix D).

3.3.6 Accounting Feature

In Question ❻ in the sample dialog in Section 3.4 you can choose to configure the PrintServer printer to supply accounting information. The PrintServer printer supplies accounting information to every supporting host that is enabled to receive accounting data.

This question has three options: On, Off, or Reliable. You can ensure complete and accurate PrintServer accounting by choosing the R (Reliable) accounting feature. When the Reliable accounting feature is enabled, the printer does not print jobs when no supporting host is set up to provide accounting services.

Note

Although choosing the Reliable accounting feature provides secure and complete accounting information from the printer, the printer prints jobs only if a supporting host node is available to provide accounting services for the printer. In network printing, this feature can cause printing delays.

By default, the LPS$ADD_PRINTSERVER.COM procedure creates a management client that receives accounting data from the printer you are configuring.

You can disable accounting services on the supporting host by running the LPS$OPTIONS procedure, as described in the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

3.3.7 Event-Logging Feature

In Question ❼ in the sample dialog in Section 3.4, you can enable event logging on the PrintServer printer. When event logging is enabled, the printer sends event messages to every supporting host set up to receive them. If you disable event logging, the printer does not send event messages to the supporting host.

By default, the LPS$ADD_PRINTSERVER.COM procedure creates a management client that receives event messages from the printer you are configuring.

You can disable event logging on the supporting host by running the LPS$OPTIONS procedure, as described in the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

3.3.8 Printer Password

Question ❽ in the sample dialog in Section 3.4 allows you to supply a printer password different from the default. The default printer password is LPS.

The printer password is used by the management client software to access the printer. The printer password may also be used by privileged PostScript jobs.

Note

Previous versions of the PrintServer supporting host software used different passwords. If you are upgrading the software, privileged PostScript jobs that use the previous passwords will not print.

3.3.9 PrintServer 20 Series Language Choice

Question ❾ in the sample dialog in Section 3.4 is asked only if you have specified a PrintServer 20 series printer by answering Question ❷ (PrintServer type) by entering the number 2.

The PrintServer 20 series printers have a front panel display that can be modified to provide messages and instructions in any one of the following languages:

- Dutch
- English
- French
- German
- Norwegian
- Swedish

You answer this question by entering the name of the preferred language. The default answer to this question is English.

3.3.10 DECnet Access Restrictions

Question ❿ in the sample dialog in Section 3.4 allows you to restrict or enable access to the PrintServer printer from specified DECnet nodes.

This feature allows you to list the DECnet nodes and network areas that can submit print jobs and act as supporting hosts to the PrintServer printer. You can supply the DECnet node addresses and network areas of nodes that will not be allowed to print jobs and will not be allowed to act as supporting host nodes. You can also supply the DECnet node addresses and network areas

of nodes that will be allowed to print jobs on the PrintServer and supply supporting host services as each has been configured. See the *DEC PrintServer Supporting Host Software for VMS Management Guide* for more information.

Note

When you restrict access to the PrintServer printer, you restrict supporting host services (such as configuration services) as well as print jobs

By default, the PrintServer printer allows access from any DECnet client that wishes to connect to it and accepts supporting host services from any node that is configured to supply them to the PrintServer printer.

Note

If there are multiple supporting hosts in your network configuration, refer to the *DEC PrintServer Supporting Host Software for VMS Management Guide* before choosing to restrict access to the PrintServer printer.

3.3.11 Providing Access from Internet Nodes

Question ⓫ in the sample dialog in Section 3.4 enables or disables the PrintServer printer from accepting print jobs and supporting host services from ULTRIX or UNIX nodes on the TCP/IP (Internet) network.

If you have ULTRIX or UNIX nodes in your network that will be submitting print jobs over the Internet network, or if these nodes will be providing supporting host services, you must supply the following information about the PrintServer printer:

- Internet address (see Section 3.3.11.1)
- Internet subnet mask (see Section 3.3.11.2)
- Internet gateway address, if required (see Section 3.3.11.3)

3.3.11.1 Internet Address

If the PrintServer printer is to accept connections from nodes in the Internet network, you must provide the Internet address of the PrintServer printer to LPS$ADD_PRINTSERVER.COM.

When the PrintServer printer is on the Internet network, the Internet address is assigned to the printer by the network manager. The Internet address is a 32-bit number, usually expressed as four decimal numbers separated by periods. For example:

```
128.45.9.1
```

3.3.11.2 Internet Subnet Mask

If the PrintServer printer is to accept connections from nodes in the Internet network, you must also provide the Internet subnet mask during the postinstallation procedure. If you do not know the subnet mask for your network, contact your network manager. An example of an Internet subnet mask is as follows:

```
255.255.255.0
```

3.3.11.3 Internet Gateway Address

If the PrintServer printer is to print jobs submitted from another Internet that is connected to the printer's Internet by a gateway, you must supply the Internet address of the gateway node. The network manager gives you the gateway node address. An example of a gateway node address is:

```
128.46.33.45
```

Note

The PrintServer printer cannot be booted from a node on the other side of an Internet gateway node.

3.3.12 Internet Access Restrictions

Question ⓬ in the sample dialog in Section 3.4 allows you to specify the Internet nodes and subnetworks that will be allowed or denied access to the PrintServer to submit print jobs and supply supporting host services. Question ⓬ is asked only if you answer question ⓫ with Y.

You can specify the Internet nodes and subnetworks that will be allowed or denied access to the PrintServer printer. This feature allows you to set up the printer to deny print jobs from Internet nodes and subnetworks, and to deny supporting host services from Internet nodes and subnetworks.

Note

When you restrict access to the PrintServer printer, you restrict supporting host services, such as configuration services, as well as print jobs.

To set up Internet access restrictions, you must provide the following lists:

- Internet addresses for individual nodes or subnet masks for subnetworks that will be allowed to access the PrintServer printer.
- Internet addresses for individual nodes or subnet masks for subnetworks that will be denied access to the PrintServer printer.

Refer to the *DEC PrintServer Supporting Host Software for VMS Management Guide* for more information.

3.4 Running LPS$ADD_PRINTSERVER.COM

Running the LPS$ADD_PRINTSERVER command procedure requires the information listed in Table 3–1. In the following sample dialog, the questions are numbered. The numbers shown in this sample are not part of the command procedure; they are provided for reference to the items you recorded in Table 3–1.

Note

System privileges are required to run this procedure.

Follow these steps to configure your PrintServer supporting host. You can get help during the procedure by entering a question mark (?) at any time.

To start the LPS$ADD_PRINTSERVER command procedure, enter the following commands:

```
$  SET DEFAULT SYS$MANAGER
$  @LPS$ADD_PRINTSERVER
```

The command procedure begins by displaying the following informational message:

```
This command procedure sets up this supporting host to provide booting
and configuration services for the PrintServer printer you specify.
The following actions occur automatically as a result of running this
command file:

     1) the PrintServer's booting information is defined in the
        network database
     2) the PrintServer's configuration, defaults and resource
        data files are created
     3) the management client's options file is created
     4) a management client process is started that provides configuration
        services to the PrintServer

The command procedure will prompt you for the information it needs to
perform the steps listed above.

                              *****NOTE*****

If you enter a question mark ("?") at the prompt for any question,
you will receive an explanation of the question being asked. You will then be
re-prompted for the required information.

❶ What is the DECnet node name of PrintServer printer you want to
add?  IMPALA

❷ Which type of PrintServer is IMPALA ?

 1) PrintServer 40 or PrintServer 40 Plus
 2) PrintServer 20 or turbo PrintServer 20

Choose the appropriate number (1/2)?  2

❸ What is the DECnet address of PrintServer IMPALA ?  55.495

❹ What supporting host service circuit will be used to connect to
IMPALA?  SVA-0

❺ What is the Ethernet hardware address of PrintServer
IMPALA?  08-00-2B-05-15-F6
```

The command procedure now displays the information you have supplied for the network database. You have the option to continue the dialog if the data is correct.

```
The following information will be used to enter NCP commands in
SYS$MANAGER:LPS$NETSETUP_V4.COM:

  PrintServer Node Name:        IMPALA
  DECnet Address:               55.495
  Type of printer:              PrintServer 20 series
  Service Circuit:              SVA-0
  Ethernet Hardware Address:    08-00-2B-05-15-F6

Is the data correct (Y/N [Y])?  Y
```

If you enter N, the command procedure returns to question ❶, and you can reenter the information.

If you enter Y, the command procedure adds the network database information to the LPS$NETSETUP_V4.COM file and displays the following messages:

```
PrintServer data will be added to SYS$MANAGER:LPS$NETSETUP_V4.COM

%LPS-I-FILECREATE, The file SYS$MANAGER:LPS$NETSETUP_V4.COM has been
created.
```

The LPS$NETSETUP_V4.COM procedure is invoked to update the network database.

The procedure reminds you to enable the service circuit serving the PrintServer printer. The procedure for enabling a service circuit is in Section 3.3.4.

The following messages are displayed:

```
Please enable the service circuits serving the PrintServer
nodes that you have just set up.  You may want to add lines
to LPS$NETSETUP_V4.COM to enable service circuits automatically.

Please refer to the PrintServer Supporting Host Installation Guide
for VMS for additional information.
```

LPS$ADD_PRINTSERVER now calls the LPS$CONFIG.COM command procedure, which creates a configuration file, a resource-loading file, and a defaults file for the PrintServer printer.

❻ Do you want accounting enabled (Y=on, N=off, R=reliable [N])? Y

❼ Should PrintServer IMPALA enable event logging (Y/N [Y])? Y

❽ What is PrintServer IMPALA's password [LPS]? Return

```
  The next question asks you to choose the language to be displayed on
  the PrintServer 20 front panel.

  The languages you may choose from are the following:

     Dutch
     English
     French
     German
     Norwegian
     Swedish
```

❾ What language would you like to display on the PrintServer 20 front panel? [English]? Return

```
  The next questions involve controlling client access via DECnet
  to the printer. By default, the printer allows access from any
  DECnet client that wishes to connect to it.
```

❿ Do you wish to restrict access to PrintServer IMPALA from specific DECnet node addresses or area numbers (Y/N [N])? Y

```
Enter DECnet address or area number ALLOWED access to IMPALA.
Press return if there are none to enter.  []:  33
```

```
Enter DECnet address or area number ALLOWED access to IMPALA.
Press return if there are none to enter.  []:  Return

Enter DECnet address or area number DENIED access to IMPALA.
Press return if there are none to enter []:  33.505

Enter DECnet address or area number DENIED access to IMPALA.
Press return if there are none to enter []:  Return

  The next question asks you if you want the PrintServer printer to
  accept Internet network connections. If your network environment is
  DECnet only then you may answer "NO" to the question.

  If you answer "YES", you will be prompted for additional data necessary
  to configure the PrintServer in an Internet network (Internet address,
  subnet mask and gateway address).

⓫ Do you want to provide an Internet address for
PrintServer IMPALA, thereby allowing it to accept Internet
connections  (Y/N [N])?  Y
```

If you enter Y, you must supply the following information:

```
What is the Internet address of PrintServer IMPALA ?  16.122.128.7

What is the Internet subnet mask for your network?  255.255.240.0

What is the address of the Internet gateway, if one is required
for accessing the PrintServer from remote clients?
Press Return if none is required:  Return

  The next questions involve controlling client access via Internet to
  PrintServer IMPALA. By default, the printer allows access
  to any Internet client that wishes to connect to it.

⓬ Do you wish to restrict access to PrintServer IMPALA from specific
Internet addresses or network numbers (Y/N [N])?  Y
```

If you enter Y, you must supply the following information:

```
Enter Internet address or network number ALLOWED access to IMPALA.
Press return if there are none to enter []:  16

Enter Internet address or network number ALLOWED access to IMPALA.
Press return if there are none to enter []:  Return

Enter Internet address or network number DENIED access to IMPALA.
Press return if there are none to enter []:  16.122.128.10

Enter Internet address or network number DENIED access to IMPALA.
Press return if there are none to enter []:  Return
```

The LPS$ADD_PRINTSERVER.COM procedure displays the information you have supplied.

```
The following information will be entered in LPSCONFIG.IMPALA

  PrintServer name:         IMPALA
  Password:                 LPS
  Front panel language:     English
  Accounting:               on
  Event Logging:            on

  Internet address:              16.122.128.7
  Internet subnetmask:           255.255.240.0


Allow access to the following DECnet nodes:
33

Deny access to the following DECnet nodes:
33.505

Allow access to the following Internet nodes:
16

Deny access to the following Internet nodes:
16.122.128.10

Is the data correct? (Y/N [Y])  Y
```

If you enter N, the command procedure returns to question ❻ and allows you to reenter the data from that point.

If you enter Y, LPS$ADD_PRINTSERVER.COM displays the following:

```
Configuration data will be entered in LPS$SUPPORT:LPSCONFIG.IMPALA

%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSCONFIG.IMPALA has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSDEFAULTS.IMPALA has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSRESOURCES.IMPALA has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSOPTIONS.IMPALA has been created

%RUN-S-PROC_ID, identification of created process is 0000007A

%LPS-I-CREATPROC, lps$start_daemon.com has started a
management client process for PrintServer IMPALA

$
```

3.5 Editing the System Startup File

To set up your node as a PrintServer supporting host each time you boot your system, edit the system startup file:

```
$  EDIT SYS$STARTUP:SYSTARTUP_V5.COM
```

Add the following command near the end of the file. Make sure that the command line to start the DECnet facility precedes this entry.

```
$ @SYS$STARTUP:LPS$STARTUP_SERVICES
```

One node in a VAXcluster configuration can act as the PrintServer supporting host node. If the cluster does not have a node-specific startup file, you can insert the following code in the clusterwide SYS$STARTUP:SYSTARTUP_ V5.COM file:

```
$ !Find the node on which the startup file is running
$ !
$ cluster_member = F$GETSYI("NODENAME")
$ !
$ ! Test to see if the node is the Supporting Host
$ !
$ if "''cluster_member'" .eqs. "supporting-host-node-name"
$ then
$ @SYS$STARTUP:LPS$STARTUP_SERVICES
$ endif
```

The *supporting-host-node-name* is the name of the supporting host node.

Note

Enclose the name of the supporting host within quotation marks.

The command file sets up the supporting host logical names LPS$SUPPORT and LPS$ROOT and starts the management client for each PrintServer printer you have set up. The code calls LPS$STARTUP_SERVICES for the cluster member on which you want to run the management client.

If you specify a second management client process on a node or cluster, the following error message is displayed:

```
LPS$START_DAEMON: Management client already exists for PrintServer IMPALA.
```

Note

If you are upgrading the PrintServer supporting host software from a previous version, you must remove any remaining command line in the system startup file for starting older versions of the supporting host software. Remove the line that calls LPS$NETSETUP.COM. Perform additional cleanup procedures as described in Section 3.6.

3.6 Upgrading PrintServer Software

This section contains information about procedures you should perform if this installation is a software upgrade. If you are installing the PrintServer supporting host software on this system for the first time, go directly to Section 3.7.

3.6.1 Deleting Files from Older Versions

When you upgrade from an older version of the PrintServer supporting host software, delete the obsolete files from your system. After you run LPS$ADD_PRINTSERVER.COM, run the following command procedure as shown in this example:

```
$  @SYS$UPDATE:LPS$DELETE_OLD_LPS.COM
```

After the command file has executed, you can delete it.

Note

Delete obsolete files only after the LPS$ADD_PRINTSERVER procedure has been run.

3.6.2 Removing Proxy Access

Previous versions of the supporting host software used proxy access to the LPS$SERVER account. DEC PrintServer Supporting Host Software for VMS Version 4.0 does not require proxy access. If this installation of the software is an upgrade, remove proxy access to the LPS$SERVER account for each PrintServer printer to be booted from this supporting host.

To remove proxy access, enter the following commands:

```
$  SET DEFAULT SYS$SYSTEM
$  MCR AUTHORIZE
```

Enter the following command for each printer:

```
UAF>  REMOVE/PROXY printer-node-name::USER LPS$SERVER
```

In this procedure, supply the DECnet node name of the printer in place of *printer-node-name*.

3.7 Configuring Multiple Supporting Hosts

The LPS$ADD_PRINTSERVER.COM procedure configures the supporting host software to provide boot and supporting host services to the PrintServer printer. The procedure creates default settings for the primary supporting host, allowing you to complete the configuration dialog.

If your configuration requires multiple supporting hosts, you can configure the other supporting hosts to supply complete services or a subset of supporting host services. For example, you can configure a second support host to provide backup booting and management client services. For more information about the procedures for setting up multiple supporting hosts, refer to the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

The primary supporting host configured by the LPS$ADD_PRINTSERVER procedure uses default information for the following configuration specifics:

- The PrintServer printer name is set to the DECnet node name that you supply in response to question ❶.
- Your response to question ❻ determines both the ability of the PrintServer printer to provide accounting data and the ability of the supporting host to receive accounting data.

  If you answer question ❻ with Y, the supporting host can provide accounting services and the PrintServer printer can send accounting data to any supporting host that is set up to provide accounting services.
- Your response to question ❼ determines both the PrintServer printer's ability to provide event messages and the supporting host's ability to record event messages.

  If you answer question ❼ with Y, the supporting host is configured to log event messages and the PrintServer printer is configured to provide event messages to any supporting host that is set up to provide event-logging services.

4

Booting the PrintServer Printer

After the software is installed and the LPS$ADD_PRINTSERVER.COM procedure has been run to start the management client, you can boot the printer. The following procedures are described in this chapter:

- The procedure for selecting the boot protocol for booting a PrintServer 20 is described in Section 4.1.
- The boot process for the PrintServer 20 and turbo PrintServer 20 printers is described in Section 4.2.
- The boot process for the PrintServer 40 and PrintServer 40 Plus printers is described in Section 4.3.
- The procedure for determining and reporting problems with your PrintServer printer is described in Section 4.4.

When the PrintServer printer is booted, the following events occur in the following order:

1. The PrintServer printer is booted from a VMS supporting host node. (To boot the PrintServer from an ULTRIX supporting host node, set up the DEC PrintServer Supporting Host Software for ULTRIX, as described in *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*.)
2. A PrintServer printer with a VMS supporting host node can print jobs from ULTRIX and UNIX nodes. To provide this capability, supply the Internet address and subnet mask in the LPS$ADD_PRINTSERVER.COM file, as described in Section 3.4.
3. A management client process is started to provide the configuration and secondary image files, and, optionally, the defaults, start page, resource, and setup files.

4.1 Selecting the Boot Protocol on the PrintServer 20 Printer

The PrintServer supporting host software can accept print jobs from print clients on the same Ethernet network. Either the DECnet or the Internet network protocol can be used. To provide access to the printer from DECnet nodes, the PrintServer is booted with the Digital maintenance operation protocol (MOP) services. If the Internet address and subnet mask are provided in the LPS$ADD_PRINTSERVER procedure, as described in Section 3.4, the node booted using MOP can also print jobs from Internet nodes on the Ethernet. All types of PrintServer printers can be booted using the MOP service.

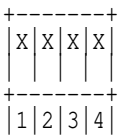
The PrintServer 20 and turbo PrintServer printers can be booted using either MOP or the Internet Bootstrap Protocol (BOOTP).

Note

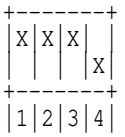
A PrintServer printer that is booted with BOOTP can only accept print jobs from Internet nodes. DECnet nodes cannot print jobs on a PrintServer printer booted using BOOTP, because BOOTP does not transmit DECnet node addresses.

For the turbo PrintServer 20 printer, boot protocol selection is automatic. However, for the PrintServer 20 printer, select the boot protocol by setting the DIP switch in the printer controller firmware module.

To check or set the DIP switch, open the operator panel and remove the panel covering the module card cage. Refer to your printer operator's guide for specific information. Locate the DIP switch on the left-center front edge of the lower module. The following illustration shows the switch position for the MOP protocol. Note that switch 4 is up.



The following illustration shows the switch position for the BOOTP protocol. Note that switch 4 is down.



After you check or set the switch, replace the module card cage panel and close the operator panel.

Booting with the MOP protocol is described in Section 4.2. For information about booting using the BOOTP protocol, refer to the *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*.

4.2 Booting the PrintServer 20 or turbo PrintServer 20 Printer

After the postinstallation command procedure (LPS$ADD_PRINTSERVER.COM) is complete, you can boot the PrintServer printer. Use the following procedure to boot the PrintServer 20 or turbo PrintServer 20:

Note

Each box in the following procedure represents one window display.

Turn off power to the printer and then turn it on. The diagnostic tests are run and the following numbers are displayed:

```
+-----------------------+
|  9,8,7,6,5,4,3,2,1,0  |
|                       |
+-----------------------+
```

After the diagnostic tests are repeated successfully, the following is briefly displayed:

```
+-----------------------+
|  9,8,7,6,5,4,3,2,1,0  |
|  x.x y.y z.z          |
+-----------------------+
```

The firmware controller version numbers are displayed on the second line:

x.x	is the PrintServer 20 controller firmware version number.
y.y	is the print engine firmware version number.
z.z	is the large capacity input tray (LCIT) firmware version number.

Note

If the diagnostic tests fail, the Ethernet hardware address and firmware version numbers are not displayed. Refer to Section 5.1 for troubleshooting procedures.

This display is quickly replaced by the following:

```
+----------------------+
|  08-00-2B-0C-48-EE   |
|  x.x y.y z.z         |
+----------------------+
```

This display shows the Ethernet hardware address on the first line and the firmware controller version numbers on the second line. This display indicates that the primary boot is taking place.

If the primary boot procedure fails, it is repeated and the following is displayed:

```
+----------------------+
|  08-00-2B-0C-48-EE   |
|  1501.0001           |
+----------------------+
```

If the primary boot process is successful, the following is displayed:

```
+----------------------+
|  08-00-2B-0C-48-EE   |
|VAXELN V4.2 LPS20     |
+----------------------+
```

This display indicates that the system file LPS_PRINTSERVER20.SYS has been loaded. You can observe the remainder of the boot process using the remote console facility. Enter the following command to run the remote console facility:

```
$ MCR LPS$CONSOLE printer-node-name
```

If the primary boot fails, perform the troubleshooting procedures in Section 5.1.

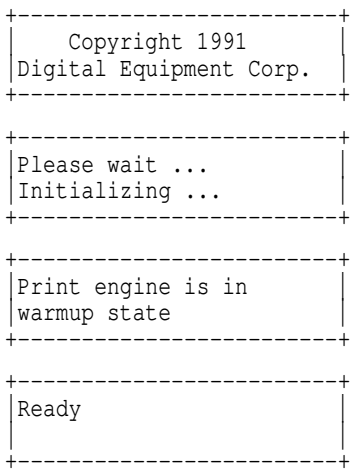
When a connection is made to the PrintServer printer from a management client process on a supporting host node, the following is displayed:

```
+----------------------+
|VAXELN V4.2 LPS20     |
| ....                 |
+----------------------+
```

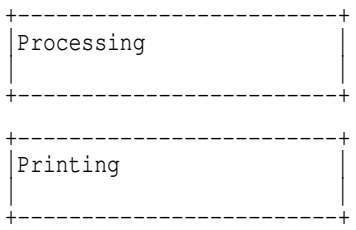
The printer-specific configuration file is loaded by the management client. In addition, the following files may be loaded:

- Printer-specific defaults file
- Start page file
- Resource files
- Printer-specific setup file

When the software is loaded and started, the following sequence is displayed:



Next the printer prints the start page. During this process, the following is displayed:



The following display indicates that the start page has been printed and the PrintServer is ready to print:

If the PrintServer printer fails to complete the boot process, refer to Chapter 5 for troubleshooting information.

4.3 Booting the PrintServer 40 and PrintServer 40 Plus Printers

To boot the PrintServer 40 and PrintServer 40 Plus printers, press the power ON/OFF button on the printer to the OFF position and then to the ON position. Upon power-up, the PrintServer printer sends a boot request over the Ethernet network. The PrintServer printer should begin its boot sequence immediately.

If the prompt (>>>) is displayed on the local console screen, the PrintServer printer was not installed to boot automatically. Enter the following boot command at the prompt:

```
>>> B
```

The supporting host that has the Ethernet hardware address of the PrintServer printer sends the load file to the PrintServer printer.

The boot process proceeds and the load file LPS_PRINTSERVER40.SYS is loaded. After the .SYS file is loaded, the local console display shows the PrintServer type and ''Waiting for Configuration'' on the banner line. The remote console facility also displays this message.

To observe the boot process from the remote console facility, enter the following command:

```
$ MCR LPS$CONSOLE printer-node-name
```

When the management client process has established a connection to the PrintServer printer, a message is displayed in the message portion of the console screen to indicate that the management client has made the connection. The banner line reads ''Loading'' and reflects the loading status.

When the boot process is complete, the console screen banner line reads ''Idle.''

When the banner line shows the Idle status, the PrintServer is ready to accept print jobs. If the boot process does not complete successfully, refer to Section 5.1 for troubleshooting procedures.

4.4 Determining and Reporting Problems

If you encounter a problem while using DEC PrintServer Supporting Host Software for VMS, use the troubleshooting procedures in Chapter 5 to diagnose and solve the problem. If the problem persists, report it to Digital. Depending on the nature of the problem and the type of support you have, take one of the following actions:

- Call your Digital representative if your software contract or warranty agreement entitles you to telephone support.
- Submit a Software Performance Report (SPR).
- Fill out and submit a Reader's Comments form if the problem concerns the DEC PrintServer Supporting Host Software for VMS documentation. There are Reader's Comments forms at the back of each manual. Use the form from the manual in which you found the error. Include the section and page number where you found the problem, as well as an exact description of the problem you found in the documentation.

Review the Software Product Description (SPD) and System Support Addendum (SSA) for an explanation of warranty. If you encounter a problem during the warranty period, report the problem as indicated above or follow alternate instructions provided by Digital for reporting SPD nonconformance problems.

5
Troubleshooting Procedures

The troubleshooting procedures in this chapter help diagnose problems with the DEC PrintServer Supporting Host Software for VMS. For procedures to help you diagnose a printer problem, go to the appropriate section shown in Table 5–1.

Table 5–1 Troubleshooting Procedures

Problem Description	Refer To
PrintServer printer does not boot	Section 5.1
PrintServer printer boots and crashes	Section 5.4
PrintServer printer boots but the remote console does not report the status of the printer as Idle	Section 5.5
If the PrintServer printer is reported as Idle but does not print	Section 5.6

Note

When you encounter any type of printer problem, first verify that the postinstallation procedure has been executed according to the instructions in Chapter 3.

5.1 PrintServer Printer Does Not Boot

This section describes the procedures you can follow to determine whether the printer is booting and, if not, what the cause of the problem might be.

- For an overview of the boot process, refer to Section 5.2.
- To determine the cause of a problem with the boot process on your printer, see Section 5.3.

This part of the manual includes procedures to help you check the following areas for possible problems:

1. Check the system logical names, as described in Section 5.3.1.
2. Check the network events to determine if the printer is sending a boot request to the supporting host, as described in Section 5.3.2.
3. Check the remote console program to see if it can establish a connection to the printer, as described in Section 5.3.3.
4. Check the hardware connections, as described in Section 5.3.4.

5.2 Overview of the Boot Process

Refer to Chapter 4 for complete instructions on booting PrintServer printers.

To determine whether the primary bootstrap has completed, look at the PrintServer 20 series front panel (as described in Section 5.2.1) or the PrintServer 40 series local console terminal (as described in Section 5.2.2).

Note

The following displays use sample Ethernet addresses, version numbers, and printer-specific model numbers. Messages on your display will reflect the information for your PrintServer printer.

5.2.1 PrintServer 20 Front Panel Display

For the PrintServer 20 series, following the power-up diagnostics the front panel display looks like this:

```
+------------------------+
|  08-00-2B-0C-7E-8B     |
|  1.1 1.2 1.1           |
+------------------------+
```

The first line contains the Ethernet hardware address of the PrintServer printer and the second line contains three pairs of numbers:

- The Digital controller firmware version number
- The print engine controller firmware version number
- The large capacity input tray firmware version number

If the primary boot procedure fails, it is repeated and the following is displayed:

```
+----------------------+
|  08-00-2B-0C-48-EE   |
|  1501.0001           |
+----------------------+
```

If your printer remains in this state for more than a minute, the printer is not booting. See the procedures in Section 5.3.

If the front panel displays the following, the primary system image file has been successfully downline loaded to the printer, but the management client has not connected to the printer.

```
+------------------------+
|  08-00-2B-0C-7E-8B     |
|VAXELN V4.2 LPS20       |
+------------------------+
```

In this case, go to Section 5.5.2 for procedures for diagnosing the problem.

However, if the management client has connected to the printer, the front panel display looks like this:

```
+------------------------+
|VAXELN V4.2 LPS20       |
| ....                   |
+------------------------+
```

The following executable files are loaded from the management client system:

- LPS_PCSI.EXE
- LPS_20VIDEO.EXE OR LPS_20DMA.EXE
- LPS_20PANEL.*xxx*, where *xxx* corresponds to the language selected for the panel display (see Section 3.3.9).
- LPS_PS20.EXE

After the files have been downline loaded, the Digital copyright notice is displayed on the front panel for at least 15 seconds. The maximum time the copyright notice is displayed depends on how long it takes the remaining processes in the PrintServer system to be started.

5.2.2 PrintServer 40 Local Console Display

For the PrintServer 40 series printer, if the primary system image has been successfully downline loaded to the printer, the local console terminal briefly displays the following:

```
Loading system software.

  2..
-XQA0
  1..0..

%VAXELN system initializing

        VAXELN V4.2 LPS40
```

The Digital copyright notice is then displayed on the local console terminal for at least 10 seconds. The maximum time the copyright notice is displayed depends on how long it takes the remaining processes in the PrintServer system to be started.

5.3 Procedure for Analyzing Problems in the Boot Process

If the downline load of the primary system image does not successfully complete, proceed with the following steps. These steps help you gather information that might reveal the cause of the problem.

5.3.1 Step ❶ Check the Supporting Host Logical Names

Certain logical names must be defined for your PrintServer printer to successfully boot. These logical names are defined by the command procedure SYS$STARTUP:LPS$STARTUP_SERVICES.COM. If one or both logical names have been deassigned or redefined, your printer will not be able to boot successfully. The logical names must be in the system logical name table.

To verify that the logical names are defined correctly, log in to the supporting host system and enter the following command:

```
$  SHOW LOGICAL/SYSTEM/FULL LPS$SUPPORT, LPS$ROOT

   "LPS$SUPPORT" [EXEC] = "device-name:[LPS$SERVER]" (LNM$SYSTEM_TABLE)

   "LPS$ROOT" [EXEC] = "device-name:[LPS$SERVER.]" (LNM$SYSTEM_TABLE)
```

If the logical names are defined as above, go to Section 5.3.2.

If the logical names are not defined as above, run the system startup procedure to define them. After you make changes to the logical names, reboot the printer. If the printer continues to fail during the boot process, check the network environment, as described in Step ❷, Section 5.3.2.

5.3.2 Step ❷ Monitor Network Events

When the printer issues boot requests but the supporting host never receives one, a network configuration problem may exist. You can monitor the network events to determine whether the supporting host is receiving boot requests.

The following steps describe various network control program (NCP) parameters and the database where the parameters are stored. All the command examples that manipulate the parameters use the NCP SET command, which affects only the volatile database. You need OPER privilege in order to modify the volatile database. However, Digital recommends that all modifications that you make to the NCP parameters be stored in the NCP permanent database. To modify the permanent database you use the NCP DEFINE command. You need SYSPRV privilege in order to modify the permanent database. For additional information regarding NCP commands, enter the following:

```
$ MCR NCP HELP
```

For more information about NCP, refer to the *VMS Network Control Program Manual*.

To investigate network events, follow the steps listed in Table 5–2.

Table 5–2 Check Network Events

Network Check (NC) Step	Procedure	Refer To
Step NC-1	Check the NCP database.	Section 5.3.2.1
Step NC-2	Check the service circuit.	Section 5.3.2.2
Step NC-3	Monitor network events.	Section 5.3.2.3
Step NC-4	Monitor OPCOM messages.	Section 5.3.2.4
Step NC-5	Check the network configuration	Section 5.3.2.5
Step NC-6	Determine whether printer has booted.	Section 5.3.2.6
Step NC-7	Detect and shut down remote booting services.	Section 5.3.2.7

After you have thoroughly investigated the network environment for the cause of your booting problem, try to reboot the printer. If the printer continues to fail during booting, go to Step ❸, Section 5.3.3.

5.3.2.1 Step NC-1: Check the NCP Database

Check to see that the boot host has the correct entry for the PrintServer printer in the NCP database by entering the following command:

```
$ MCR NCP SHOW NODE printer-node-name CHARACTERISTICS
```

The typical output from this command follows:

```
$ MCR NCP SHOW NODE BULL36 CHARACTERISTICS

Node Volatile Characteristics as of  8-JUN-1991 22:04:34

Remote node =   62.114 (BULL36)

Service circuit          = SVA-0
Hardware address         = 08-00-2B-0C-7E-8B
Load file                = LPS$ROOT:[SYS]LPS_PRINTSERVER20.SYS
```

If any information is missing or is incorrect, make the necessary changes by running LPS$NETSETUP_V4.COM. If the NCP database continues to display incorrect information, the postinstallation data entered in the LPS$ADD_ PRINTSERVER.COM procedure is incorrect. Be sure you have the correct service circuit name, DECnet node address, and Ethernet hardware address. Run the procedure as described in Section 3.4. Then reboot the printer. If the boot process continues to fail, go to Step NC-2, Section 5.3.2.2.

5.3.2.2 Step NC-2: Check the Service Circuit

Check the service circuit characteristics to be sure that service is enabled for the service circuit used to boot the PrintServer printer:

```
$ MCR NCP SHOW CIRCUIT circuit-name CHARACTERISTICS
```

In the NCP SHOW CIRCUIT command line, you supply *circuit-name*, which is the circuit name for your network interface (refer to Section 3.3.4. Check that State is set to on and that Service is set to enabled. An example of the command to display circuit characteristics follows:

```
$ MCR NCP SHOW CIRCUIT SVA-0 CHARACTERISTICS

Circuit Volatile Characteristics as of  8-JUN-1991 23:59:23

Circuit = SVA-0
```

```
State                    = on
Service                  = enabled
Designated router        = 55.155
Cost                     = 4
Maximum routers allowed  = 33
Router priority          = 64
Hello timer              = 15
Type                     = Ethernet
Adjacent node            = 55.155
Listen timer             = 90
```

If Service is set to disabled, execute the following commands. In the following example, the service circuit name is SVA-0:

```
$  MCR NCP SET CIRCUIT SVA-0 STATE OFF
$  MCR NCP SET CIRCUIT SVA-0 SERVICE ENABLED STATE ON
```

Note

This procedure may interrupt processes that have active links on the specified circuit.

5.3.2.3 Step NC-3: Enable Network Event Reporting

Logging of network events from NCP is a two-step process:

1. Select the events you want to display.
2. Enable reporting of the selected events.

Use the following command to find out what events are selected and whether event logging is enabled:

```
$  MCR NCP SHOW LOGGING MONITOR

Logging Volatile Summary as of  8-JUN-1991 23:59:44

 Logging sink type = monitor

    Sink Node       Source               Events        State Name

   55.499 (NASDAQ)  (All sources)        0.0-9          on
                    (All sources)        2.0-1
                    (All sources)        4.2-13 15-16
                                         18-19
                    (All sources)        5.0-18
                    (All sources)        128.0-4
```

If event logging of network activity has not been enabled, use the NCP SET LOGGING MONITOR command to select and enable reporting of events. For example:

```
$ MCR NCP SET LOGGING MONITOR STATE ON
```

You can supply an event number to monitor a particular type of event. For example:

- Use event number 0.3 to monitor automatic line service.
- Use event number 0.7 to monitor aborted service requests.

To select reporting of particular events, enter the following command:

```
$ MCR NCP SET LOGGING MONITOR EVENT number
```

To select reporting of all events, enter the following command:

```
$ MCR NCP SET LOGGING MONITOR KNOWN
```

5.3.2.4 Step NC-4: Check OPCOM Messages

If OPCOM is running, the selected network events are reported on the system console and on any terminals that are appropriately enabled, as well as recorded in the SYS$MANAGER:OPERATOR.LOG file.

To determine whether OPCOM is running, enter the SHOW SYSTEM command and look for a process named OPCOM. If there is no process by that name, start one by entering the following command:

```
$ @SYS$SYSTEM:STARTUP OPCOM
```

You need the SYSPRV privilege to successfully execute this command.

Enter the following command to enable the display of network-related events:

```
$ REPLY/ENABLE=NETWORK
```

The following is an example of an OPCOM report for a successful load:

```
$
%%%%%%%%%%  OPCOM   8-JUN-1991 18:06:02.17  %%%%%%%%%%
Message from user AUDIT$SERVER on NASDAQ
Security alarm (SECURITY) and security audit (SECURITY) on...
Auditable event:        Network login
Event time:              8-JUN-1991 18:06:02.15
PID:                    000006BB
Username:               DECNET
Remote nodename:                        Remote node id:         0
Remote username:
```

```
$
%%%%%%%%%%  OPCOM   8-JUN-1991 18:06:04.66  %%%%%%%%%%
Message from user DECNET on NASDAQ
DECnet event 0.3, automatic line service
From node 55.499 (NASDAQ),  8-JUN-1991 18:06:04.62
Circuit SVA-0, Load, Requested, Node = 62.114 (BULL36)
File = LPS$ROOT:[SYS]LPS_PRINTSERVER20.SYS, Operating system
Ethernet address = 08-00-2B-0C-7E-8B

$
%%%%%%%%%%  OPCOM   8-JUN-1991 18:06:11.53  %%%%%%%%%%
Message from user DECNET on NASDAQ
DECnet event 0.3, automatic line service
From node 55.499 (NASDAQ),  8-JUN-1991 18:06:11.50
Circuit SVA-0, Load, Successful, Node = 62.114 (BULL36)
File = LPS$ROOT:[SYS]LPS_PRINTSERVER20.SYS, Operating system
Ethernet address = 08-00-2B-0C-7E-8B
```

Boot your PrintServer printer and check any resulting OPCOM messages. OPCOM software detects boot requests from the printer when:

- Network events are enabled
- The Ethernet hardware address for the PrintServer printer is recorded in the NCP database

When the OPCOM report indicates a ‘‘Load, Successful’’ status, the primary bootstrap operation has successfully completed.

If the system receives no boot request from the printer, check the network configuration as described in Step NC-5, Section 5.3.2.5.

5.3.2.5 Step NC-5: Check the Network Configuration

Certain types of network bridges and routers can be configured to filter out boot request messages. Check with your network administrator to determine if there is a bridge or a router between the supporting host and the printer. If there is, you must make one of the following changes:

- Disable the filtering of boot request messages.
- Place the printer and the supporting host on the same side of the bridge or router.

Note

The first boot request message is sent to the Ethernet multicast address AB-00-00-01-00-00. Bridges and routers supplied by Digital are configured to filter out messages sent to this multicast address.

If you make a change to the network configuration, reboot the printer. If the printer does not boot, continue with Step NC-6, Section 5.3.2.6.

5.3.2.6 Step NC-6: Determine Whether the Printer Booted

If the OPCOM report shows an ''aborted service request'' message for your printer and indicates a device timeout, one of the following occurred:

- Another system on the network has serviced the boot request.
- The printer did not complete the primary bootstrap sequence.

For example:

```
$
%%%%%%%%%%  OPCOM   8-JUN-1991 18:09:33.41  %%%%%%%%%%
Message from user DECNET on NASDAQ
DECnet event 0.7, aborted service request
From node 55.499 (NASDAQ),  8-JUN-1991 18:09:33.37
Circuit SVA-0, Line open error, Line communication error
%SYSTEM-F-TIMEOUT, device timeout
Node = 62.114 (BULL36), Ethernet address = 08-00-2B-0C-7E-8B
```

To determine whether the primary bootstrap successfully completed, use the following NCP command:

```
$  MCR NCP TELL printer-node-name SHOW EXECUTOR
```

A typical response from a printer that has booted is shown in the following example:

```
$  MCR NCP TELL BULL36 SHOW EXECUTOR

Node Volatile Summary as of  8-JUN-1991 18:09:35.14

Executor node = 62.114 (BULL36)

State                     = on
Identification            = VAXELN V4.2 LPS20
```

If the printer did not boot successfully, you see messages like the following:

```
%NCP-F-CONNEC, unable to connect to listener
-SYSTEM-F-UNREACHABLE, remote node is not currently reachable
```

If these messages are displayed, the primary bootstrap did not successfully complete. Next, investigate the hardware connections, as described in Step ❹, Section 5.3.4.

If the Identification field indicates something other than VAXELN V4.2 LPS*xx*, where *xx* is either 20 or 40, the wrong file was downline loaded to the printer. Determine which system serviced the boot request and stop the booting from that system, as described in Step NC-7, Section 5.3.2.7.

5.3.2.7 Step NC-7: Shut Down Remote Booting Services

If you suspect another node of having serviced the boot request, you can use the following command to determine whether that system is set up to service boot requests from the printer *printer-node-name*.

```
$ MCR NCP TELL node-name SHOW NODE printer-node-name CHAR
```

Check the response to this command to see whether the node *node-name* is set up to service boot requests for the printer.

If you suspect that the printer is being booted from another node, but you do not know which node is booting the printer, you can use the remote console facility to determine which system is booting the printer. Follow the procedure described in Step ❸, Section 5.3.3.

If you find such a system, contact the system manager to disable booting. To disable a system from answering boot requests for a particular printer, use the following command on the responsible system:

```
$ MCR NCP CLEAR NODE printer-node-name HARDWARE ADDRESS
```

After you shut down booting services at remote supporting hosts, try to reboot the printer. If the bootstrap fails again, go to Step ❹, Section 5.3.4.

5.3.3 Step ❸ Check the Remote Console (LPS$CONSOLE) Connection

It is possible that the printer has been successfuly booted by a system other than your intended primary supporting host. You can use the remote console facility to determine the booting host.

To run the remote console program, enter the following command:

```
$ MCR LPS$CONSOLE printer-node-name
```

If the remote console program is unsuccessful in connecting to the printer, it is possible that the printer did not boot successfully. Check the hardware connections, as described in Step ❹, Section 5.3.4.

When the remote console program connects to the printer, it creates a window on the terminal and displays a prompt on the third line. You can determine which system booted the printer by entering the following remote console command:

```
LPS> configuration
```

The response to this command includes the boot host, which contains the name and network address of the system that serviced the printer boot request.

When the boot host field contains the name and network address of the system that you want to service boot requests for this printer, you should be able to print files. If you cannot print files, go to Section 5.5.

If the printer continues to fail to boot, check the hardware connections as described in Step ❹, Section 5.3.4.

5.3.4 Step ❹ Check the Hardware Connections

Check all the cables connecting the printer, the supporting host, and any network devices between them. If you make any changes, reboot the printer. If the boot operation still fails, call your Digital Customer Services representative.

Digital recommends that all PrintServer printers be connected to Ethernet segments that have transceivers that generate the collision presence test signal (heartbeat signal). If the signal is not present, the network driver logs collision detection check failures, even though no failures of this type occur.

Depending on the type of transceiver on your network, check the following:

- If the PrintServer printer is connected to the network using a DESTA ThinWire adapter (or equivalent device), make sure the heartbeat signal on the DESTA is enabled. For details on how to install the DESTA, see the *DESTA Installation Card* (EK–DESTA–IN–001).
- If the PrintServer printer is connected to the network using the standard multipair transceiver cable, be sure that the transceiver connecting the printer Ethernet segment to the Ethernet backbone generates the heartbeat signal. The standard Digital transceiver is the H4000.

5.4 PrintServer Printer Boots and Crashes

If the PrintServer printer boots and then crashes, run the power-up diagnostics again by power-cycling the printer. If the PrintServer printer continues to crash, call your Customer Services representative.

Examine the log file LPS$SUPPORT:LPSLOG.*printer-node-name* for information about events that may have led up to the printer crash. (The procedure for displaying this file is described in Section 5.4.1.)

When the printer crashes, one of the following occurs:

- For the PrintServer 20 and turbo PrintServer 20, the following message is displayed on the front panel:

  ```
  Reboot PrintServer
  ```

- For the PrintServer 40 and PrintServer 40 Plus, the following message is displayed on the local console terminal:

  ```
  System shutdown complete - use console to halt system
  ```

When you see this message, power-cycle the printer to reboot it.

This kind of problem indicates one of the following system problems:

- Hardware deterioration occurred.
- The wrong files were downline loaded to the printer.
- Files are corrupted on disk or became corrupted in transmission.

If a printer hangs or crashes, record all the information you have about the state of the printer before the crash (for example, a paper jam). Save a copy of the LPS$SUPPORT:LPSLOG.*printer-node-name* file.

Also, try to get a copy of the file that was being printed at the time of the crash. This information helps in diagnosing problems. Report the problem to your Digital Customer Services representative.

5.4.1 PrintServer Event Log File

Printer messages are recorded in the LPS$SUPPORT:LPSLOG.*printer-node-name* file by the management client process running on the supporting host node. You can display this file using the TYPE command. If the management client is still running, the file is opened by the client and you will not be able to copy or print the file. You can close the current log file and open a new one, using the remote console newfile command. Alternatively, you can make a copy of the log file using the following command:

```
$ CONVERT/SHARE LPSLOG.printer-node-name LPSLOG.COPY
```

If the LPS$SUPPORT:LPSLOG.*printer-node-name* file is not available, the management client sends information to the following log files:

LPS$SUPPORT:LPSSERVICES_ERROR.*printer-node-name*
LPS$SUPPORT:LPSSERVICES_OUTPUT.*printer-node-name*

In order for the printer to send event messages to the management client, event logging must be enabled in the LPS$ADD_PRINTSERVER.COM procedure (refer to Section 3.3.7). Check the LPS$SUPPORT:LPSCONFIG.*printer-node-name* file for the line ‘‘Logging On.’’ If the logging is not on, run SYS$MANAGER:LPS$CONFIG.COM and say Yes to the event-logging question.

Following is an example of the printer log file:

```
lps$services.exe;18  Jun 11 17:55:33:  Start management session ❶
11-JUN-1991 17:56:49 Load complete ❷
11-JUN-1991 17:57:50 exitserver has been executed - permanent state
may be changed ❸
11-JUN-1991 17:58:41 exitserver has been executed - permanent state
may be changed
11-JUN-1991 17:58:51 exitserver has been executed - permanent state
may be changed
17-JUN-1991 17:59:35 Session 1 (LAPS-connect@PRINCE) connect ❹
```

The messages in this example indicate the following:

❶ This message records when the management client starts a session on the PrintServer printer.

❷ This message shows that the secondary boot files have been loaded successfully.

❸ These messages show files being loaded outside the PostScript server loop, namely:

- LPSDEFAULTS.*printer-node-name*
- LPS_ANSI_PROLOGUE.PS
- LPSSETUP.*printer-node-name*

If the resource-loading file contains additional files to be loaded at boot time, there will be additional ‘‘exitserver’’ messages.

❹ This message indicates the successful connection of the first print client.

5.5 PrintServer Printer Boots but Never Becomes Idle

When the management client has booted the PrintServer printer, the remote console facility and the local console terminal of the PrintServer 40 series printers display the state of the printer in the upper right-hand corner of the display in the banner line. When the state of the printer is displayed as Idle, the printer is ready to print.

Note

When you need to determine the state of the PrintServer 20 series printer, ignore the messages on the printer front panel. In particular, ignore the Ready message; this does not necessarily indicate that the printer is ready to print. For an accurate report on the state of the printer, run the remote console program.

To run the remote console program, enter the following command:

```
$ MCR LPS$CONSOLE printer-node-name
```

The remote console program is described in the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

5.5.1 Printer States

The following is a list of printer states and how to respond to them:

- If the printer status indicates ''Waiting for configuration,'' the printer has not yet received a connection from a management client that is offering the configuration service. In this case, proceed to Section 5.5.2.
- If the printer status indicates ''Loading,'' the printer has received a connection from a management client that is offering the configuration service and is downline loading the files to start up the printer. When the files have been loaded successfully, the console screen displays ''Load Complete.'' If this message does not appear in a short while, examine the LPS$SUPPORT:LPSLOG.*printer-node-name* file to see whether any problems were recorded.

  Note

  The length of time required to load the secondary image files depends on the PrintServer printer type and the current network traffic load, but typically this procedure should take less than 5 minutes.

- If the printer status indicates ''Processing internal job,'' the printer has received a connection from a management client that is offering the configuration service, has loaded the secondary image files, and is sending PostScript files to the printer's PostScript interpreter. These files include the defaults file, setup file, and resource files that are specified in the resource-loading file. The printer may remain in this state for several minutes while these files are being loaded. If additional resources are specified in the LPS$RESOURCES.*printer-node-name* file, this time delay is increased.

  If the printer remains in this state, check the printer event log file LPS$SUPPORT:LPSLOG.*printer-node-name* for related messages.

You can respond to any other state that persists by looking for related events in the printer event log file.

5.5.2 Investigating and Solving Management Client Problems

The following procedure helps determine the reason that the management client does not make a connection to the PrintServer printer. Before proceeding, make sure the postinstallation procedure has been done and the information supplied in this procedure is correct. This procedure is documented in Section 3.4.

The steps for analyzing management client problems are listed in Table 5–3.

Table 5–3 Check Management Client Procedure

Management Client Check (MC) Step	Procedure	Refer To
Step MC-1	Make sure that configuration services are provided by the supporting host.	Section 5.5.2.1
Step MC-2	Check the status of the management client.	Section 5.5.2.2
Step MC-3	Determine whether the management client has made a connection to the printer.	Section 5.5.2.3
Step MC-4	Restart the management client if the connect timer has timed out.	Section 5.5.2.4

5.5.2.1 Step MC-1: Check That Configuration Services Are Provided

Make sure that the -C configuration option is included in the LPS$SUPPORT:LPSOPTIONS.*printer-node-name* file. This option enables the management client to provide configuration services (that is, the management client can downline load all files required by the PrintServer printer during the boot process).

If configuration services are not enabled, enable them by running SYS$MANAGER:LPS$OPTIONS.COM from the system manager account and saying Yes to the question about configuration services.

5.5.2.2 Step MC-2: Check the Management Client (LPS$SERVICES) Status

Enter the following command to check the status of the LPS$SERVICES process:

```
$ SHOW SYSTEM
```

In the output from this command, look for a process named LPS_*printer-node-name*. For example:

```
$  SHOW SYSTEM

VAX/VMS V5.3  on node NASDAQ   8-JUN-1991 21:42:27.90   ...
  Pid    Process Name    State  Pri      I/O       CPU       ...
...
00000604 LPS_BULL36      HIB      5    21605   0 00:01:18.30 ...
...
```

Note

In this example, output lines containing other processes have been removed and the output lines have been truncated (indicated by ellipses) to fit on one line.

If there is no process by this name on your system, you can start one. Enter the following command to start the client:

```
$  @SYS$MANAGER:LPS$START_DAEMON printer-node-name
```

As described in Section 3.5, ensure that the management client will be started automatically whenever the supporting host is rebooted by executing the SYS$STARTUP:LPS$STARTUP_SERVICES.COM procedure from the system startup file. The LPS$STARTUP_SERVICES procedure starts a management client for every printer for which it can find an LPS$SUPPORT:LPSOPTIONS.*printer-node-name* file.

After you start the management client, enter the SHOW SYSTEM command. If the process does not exist, ensure that you are specifying the correct node name as defined in the NCP database.

Ensure that the accounting, logging, and configuration files are available.

Look in the LPS$SUPPORT:LPSLOG.*printer-node-name* file for related messages (see Section 5.4.1).

5.5.2.3 Step MC-3: Determine Whether the Management Client Has Connected

If you are sure that the management client is running, use the remote console facility to determine its current state. When the banner line contains the message ‘‘Waiting for configuration,’’ the management client has not yet connected to the printer. An example of such a banner line for a PrintServer 20 follows:

```
PrintServer 20 () Privs Disabled           Waiting for configuration
```

If the banner line does not contain this message, the printer may already be configured. To determine whether the printer has been configured, enter the configuration command at the remote console terminal or the local console terminal on the PrintServer 40 series printers. If the Configuration host field contains the name of the configuration host, the printer has been configured and the configuration host will downline load the rest of the files.

Verify that the other fields have the expected values. If not, check the contents of the LPS$SUPPORT:LPSCONFIG.*printer-node-name* file. After changing this file, reboot the printer.

5.5.2.4 Step MC-4: Restart the Management Client

If the management client has been running for some time without being able to connect to the printer, it executes a backoff algorithm to reduce the frequency of attempts to connect to the printer. Instead of waiting for the management client to make its next attempt to connect, you can stop and restart the management client, resetting the backoff time to zero. To stop and restart the management client, enter the following commands:

```
$  @SYS$MANAGER:LPS$STOP_DAEMON printer-node-name
$  @SYS$MANAGER:LPS$START_DAEMON printer-node-name
```

Enter the SHOW SYSTEM command to make sure that the management client has started.

If the management client still fails to connect, call your Digital Customer Services representative.

5.6 PrintServer Printer Becomes Idle but Does Not Print

If the PrintServer printer completes the primary bootstrap, receives a management connection, indicates that it is available for printing, but does not respond to print client connection requests (that is, nothing gets printed), the problem may be specific to the print client system. The following sections describe some of the problems that can prevent a print client from accessing the PrintServer printer.

5.6.1 Internet Access Not Provided

To provide printing services to clients using the Internet network, the LPS$SUPPORT:LPSCONFIG.*printer-node-name* file must include the Internet address and subnet mask for the printer (described in Section 3.3.11). This information is required to accept connections from management clients, remote console clients, and print clients that use the Internet transport protocol.

For further details, refer to the *DEC PrintServer Supporting Host Software for VMS Management Guide*.

5.6.2 Access Restriction Specified

If you cannot print from a particular node, check to see if access to the node has been denied in the LPS$SUPPORT:LPS$CONFIG.*printer-node-name* file. You can obtain this information using the remote console permissions command. If access restrictions prevent printing, the following message is displayed on the remote console screen:

```
Connection from node-address denied access
```

In this message, *node-address* is the DECnet address of the print client node that cannot print. This message is also recorded in the printer event log file. In this case, you can correct the problem by running SYS$MANAGER:LPS$CONFIG.COM and answer No to the question about access restrictions. If you make a change using LPS$CONFIG, issue the reconfigure command from the remote console program for the changes to take effect.

DECnet or Internet access restrictions are specified in the postinstallation procedure as described in Section 3.3.10 and Section 3.3.12 respectively.

5.6.3 Print Queues Not Set Up

A print queue must be set up for the PrintServer printer on the print client system, to allow a user on that system to access the printer. Print queues are usually created at the time the print client software is installed. Refer to the appropriate print client documentation for procedures for setting up print queues (refer to Section 1.1).

If you still cannot print on your PrintServer printer, contact your Digital Customer Services representative.

A

Sample Installation Session

The sample session in this appendix represents the installation of the PrintServer supporting host software. Installation messages and questions may vary according to system conditions, whether the installation is an update or newly installed, and the options you select. This procedure is described in Section 2.1.

Example A–1 shows a sample installation.

Example A–1 Sample Installation

```
      VAX/VMS Software Product Installation Procedure V5.3-2

It is 19-JUN-1991 at 14:09.

Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? Return

* Where will the distribution volumes be mounted:  MUA0:

* Enter installation options you wish to use (none):  Return

The following products will be processed:
  LPS V4.0

 Beginning installation of LPS V4.0 at 14:10

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, The product's release notes have been successfully moved
to SYS$HELP.

* Do you want to purge files replaced by this installation [YES]? Return

* Do you want to install the ALL-IN-1 Compatibility Kit? [Y]? Return

   This installation procedure will create an account named LPS$SERVER.
   The UIC of this account will be used by the management client process
   to provide the PrintServer with its secondary boot files and to
   create event log and accounting files on this supporting host system.
```

(continued on next page)

Example A–1 (Cont.) Sample Installation

```
   You must specify a unique UIC for this account. In order to maintain proper
   system security, please choose a UIC with a group number that does
   not give the account system privileges.

*  Enter the UIC for LPS$SERVER account (include brackets)
[[477,477]]:  Return

Enter the name of one of the disk devices available on your host system.
Be sure that the device you specify has at least 9800 free blocks.

* Enter the device name where the supporting host directory will be
created [[SYS$SYSDEVICE]]:  Return

%LPS-I-NO_MORE_QUESTIONS, No further questions will be asked during
this installation.
%LPS-I-CREATE_ACCOUNT, Creating LPS$SERVER account for the PrintServer
Supporting Host
%VMSINSTAL-I-ACCOUNT, This installation creates an account named LPS$SERVER.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier LPS$SERVER value: [000477,000477] added to
rights data base
%UAF-I-RDBADDMSGU, identifier LPS value: [000477,177777] added to rights
data base
%VMSINSTAL-I-ACCOUNT, This installation updates an account named LPS$SERVER.
%UAF-I-MDFYMSG, user record(s) updated

%LPS-I-ADD_LOGICALS, Creating the LPS$SUPPORT and LPS$ROOT logicals.
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  LPS$ROOT:[CAT].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  LPS$ROOT:[SYS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$COMMON:[SYSHLP.EXAMPLES.LPS].
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
SYS$COMMON:[SYSHLP.EXAMPLES.CPS].

%VMSINSTAL-I-RESTORE, Restoring product saveset B ...

The installation of DEC PrintServer Supporting Host Software for VMS has
completed successfully.

You must perform the following postinstallation procedures, regardless of
whether you are upgrading the software or installing for the first time
on this system :

* Execute SYS$MANAGER:LPS$ADD_PRINTSERVER.COM

* Follow the instructions in the installation guide for editing your system
    specific startup command procedure.

Please refer to the DEC PrintServer Supporting Host for VMS Installation Guide
for further instructions.
```

(continued on next page)

Example A–1 (Cont.) Sample Installation

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...
 Installation of LPS V4.0 completed at 14:28

 VMSINSTAL procedure done at 14:28
system>>
```

B

Files Added During Installation

During the installation of the supporting host software, the files listed in Table B–1 are added to the system.

Note

LPS$ROOT and LPS$SUPPORT are systemwide logical names that point to [LPS$SERVER].

The installation default device is SYS$SYSDEVICE.

Table B–1 System Files Added by the Software Kit

File	Location	Description
Utilities		
LPS$ADD_ PRINTSERVER.COM	SYS$MANAGER	Sets up the supporting host to boot and configure a PrintServer printer.
LPS$ADD_NETSETUP.COM	SYS$MANAGER	Creates an LPS$NETSETUP_V4.COM file that updates the NCP database for each PrintServer that is installed.
LPS$NETSETUP.TEMPLATE	SYS$MANAGER	Used by LPS$ADD_ NETSETUP.COM.
LPS$CONFIG.COM	SYS$MANAGER	Produces configuration, defaults, resource-loading, and setup files for the PrintServer printer.

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
Utilities		
LPS$OPTIONS.COM	SYS$MANAGER	Creates a customized LPSOPTIONS.*printer-node-name* file.
LPS$START_DAEMON.COM	SYS$MANAGER	Starts a management client process (LPS$SERVICES.EXE) for the *printer-node-name* provided as a parameter.
LPS$STARTUP_SERVICES.COM	SYS$STARTUP	Defines the LPS$SUPPORT and LPS$ROOT logicals and starts a management client process for each *printer-node-name* that has been defined.
LPS$STOP_DAEMON.COM	SYS$MANAGER	Stops the management client process for the *printer-node-name* provided as a parameter.
LPS$DELETE_OLD_LPS.COM	SYS$UPDATE	Deletes obsolete files from older versions of the software.
ANSI_SETUPS.SAV	SYS$COMMON:[SYSHLP.EXAMPLES.LPS]	Backup save set containing the ANSI setup module tool kit.

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
Optional Files Created for ALL-IN-1 Compatibility		
PS-PRINTING-ALL-IN-1-COMPAT.SAV	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]	Backup save set containing the ALL-IN-1 Compatibility Kit.
PS-PRINTING-ALL-IN-1-COMPAT.TXT	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]	Installation and user instructions for the ALL-IN-1 Compatibility Kit.
Informational Files		
LPS_PRINTING_REF_CARD.PS	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]	Printing features reference card for VMS and ULTRIX.
LPS040.RELEASE_NOTES	SYS$HELP	PrintServer supporting host release notes.
Executable Files		
LPS$ACCTREPORT.EXE	SYS$SYSTEM	Reads the centralized accounting file and produces a report.
LPS$CONSOLE.EXE	SYS$SYSTEM	Remote console facility.
LPS$SERVICES.EXE	SYS$SYSTEM	Run by the LPS$START_DAEMON.COM when a management client is started.
LPS_PRINTSERVER20.SYS	LPS$ROOT:[SYS]	PrintServer 20 series primary system image file.
LPS_PRINTSERVER40.SYS	LPS$ROOT:[SYS]	PrintServer 40 series primary system image file.
LPS_LNVDRIVER.EXE	LPS$ROOT:[SYS]	PrintServer 40 series LNV11 driver.

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
Executable Files		
LPS_PS20.EXE	LPS$ROOT:[SYS]	PrintServer 20 series PostScript image file.
LPS_PS40.EXE	LPS$ROOT:[SYS]	PrintServer 40 series PostScript image file.
LPS_20DMA.EXE	LPS$ROOT:[SYS]	turbo PrintServer 20 video driver.
LPS_20PANEL.DUT	LPS$ROOT:[sys]	PrintServer 20 series Dutch front panel.
LPS_20PANEL.ENG	LPS$ROOT:[SYS]	PrintServer 20 series English front panel.
LPS_20PANEL.FRE	LPS$ROOT:[SYS]	PrintServer 20 series French front panel.
LPS_20PANEL.GER	LPS$ROOT:[SYS]	PrintServer 20 series German front panel.
LPS_20PANEL.NOR	LPS$ROOT:[SYS]	PrintServer 20 series Norwegian front panel.
LPS_20PANEL.SWE	LPS$ROOT:[SYS]	PrintServer 20 series Swedish front panel.
LPS_20PCSI.EXE	LPS$ROOT:[SYS]	PrintServer 20 series driver.
LPS_20VIDEO.EXE	LPS$ROOT:[SYS]	PrintServer 20 series video driver.

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
PostScript Files		
LPS_ANSI_PROLOGUE.PS	LPS$SUPPORT	ANSI prologue.
LPS_PRINTING_REF_CARD.PS	LPS$SUPPORT	Printing features reference card for VMS and ULTRIX.
LPS_STARTPAGE.PS	LPS$SUPPORT	PrintServer start page.
LPS_20MAINT_LOG.PS	LPS$SUPPORT	PrintServer 20 series maintenance log form for Customer Services use.
LPS_40MAINT_LOG.PS	LPS$SUPPORT	PrintServer 40 series maintenance log form for Customer Services use.
LPS_20_0103.PS	LPS$SUPPORT	PrintServer 20 series file for Customer Services use.
LPS_STATUSDICT.PS	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]	Provides PostScript extension emulation.
Console Client Help Pages		
LPS_ABORT.S	LPS$ROOT:[CAT]	Help on abort command
LPS_ACCEPT.S	LPS$ROOT:[CAT]	Help on accept command
LPS_CONFIGURATION.S	LPS$ROOT:[CAT]	Help on configuration command
LPS_CONTINUOUS.S	LPS$ROOT:[CAT]	Help on continuous command
LPS_EXIT.S	LPS$ROOT:[CAT]	Help on exit command
LPS_HELP.S	LPS$ROOT:[CAT]	Help on help command
LPS_JOBS.S	LPS$ROOT:[CAT]	Help on jobs command
LPS_NETSTAT.S	LPS$ROOT:[CAT]	Help on netstat command
LPS_NEWFILE.S	LPS$ROOT:[CAT]	Help on newfile command
LPS_NEXT.S	LPS$ROOT:[CAT]	Help on next command
LPS_PERMISSIONS.S	LPS$ROOT:[CAT]	Help on permissions command
LPS_PRIVS.S	LPS$ROOT:[CAT]	Help on privs command

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
Console Client Help Pages		
LPS_RECONFIGURE.S	LPS$ROOT:[CAT]	Help on reconfigure command
LPS_REJECT.S	LPS$ROOT:[CAT]	Help on reject command
LPS_REPEAT.S	LPS$ROOT:[CAT]	Help on repeat command
LPS_SHORTHELP.S	LPS$ROOT:[CAT]	Brief list of all help topics
LPS_SINGLE.S	LPS$ROOT:[CAT]	Help on single job mode
LPS_STATUS.S	LPS$ROOT:[CAT]	Help on status command
LPS_VERSIONS.S	LPS$ROOT:[CAT]	Help on versions command
Data Files Created After Installation		
LPSACCT.*printer-node-name*	LPS$SUPPORT	Accounting journal file created by management client if accounting is enabled.
LPSCONFIG.*printer-node-name*	LPS$SUPPORT	PrintServer configuration file created by LPS$CONFIG.COM. Records PrintServer options for accounting, logging, and access-control parameters. Also sets the printer's name (displayed in the remote console banner line) and the printer's password.
LPSDEFAULTS.*printer-node-name*	LPS$SUPPORT	Printer defaults file, created by LPS$CONFIG.COM.
LPSLOG.*printer-node-name*	LPS$SUPPORT	Event log file created by management client if logging is enabled.
LPS$NETSETUP_V4.COM.	SYS$MANAGER	Sets up the NCP database parameters for PrintServer printers. Created by LPS$ADD_NETSETUP.COM procedure.

(continued on next page)

Table B–1 (Cont.) System Files Added by the Software Kit

File	Location	Description
Data Files Created After Installation		
LPSOPTIONS.*printer-node-name*	LPS$SUPPORT	Options file created by LPS$OPTIONS.COM, needed to run LPS$START_DAEMON.COM.
LPSRESOURCES.*printer-node-name*	LPS$SUPPORT	Resource-loading file created by LPS$CONFIG.COM.
LPSSETUP.*printer-node-name*	LPS$SUPPORT	PostScript setup file created by the LPS$CONFIG.COM procedure.

C
Sample Postinstallation Dialog

Example C–1 illustrates the postinstallation procedure for configuring the supporting host software. This procedure is documented in Section 3.4.

Example C–1 Sample Postinstallation

```
system>>  @LPS$ADD_PRINTSERVER

This command procedure sets up this supporting host to provide booting
and configuration services for the PrintServer printer you specify.
The following actions occur automatically as a result of running this
command file:

        1) the PrintServer's booting information is defined in the
           network database
        2) the PrintServer's configuration, defaults and resource
           data files are created
        3) the management client's options file is created
        4) a management client process is started that provides configuration
           services to the PrintServer

The command procedure will prompt you for the information it needs to
perform the steps listed above.

                                *****NOTE*****

If you enter a question mark ("?") at the prompt for any question, you will
receive an explanation of the question being asked. You will then be
re-prompted for the required information.

What is the DECnet node name of the PrintServer printer you want to add?  FLIPT

Which type of PrintServer is FLIPT ?

  1) PrintServer 40 or PrintServer 40 Plus
  2) PrintServer 20 or turbo PrintServer 20
```

(continued on next page)

Example C–1 (Cont.) Sample Postinstallation

```
Choose the appropriate number (1/2)?  2

What is the DECnet address of PrintServer FLIPT ?  55.492

What supporting host service circuit will be used to connect to FLIPT?  QNA-0

What is the Ethernet hardware address of PrintServer FLIPT?  08-00-2B-09-3C-94

The following information will be used to enter NCP commands
in SYS$MANAGER:LPS$NETSETUP_V4.COM:

  PrintServer Node Name:        FLIPT
  DECnet Address:               55.492
  Type of printer:              PrintServer 20 series
  Service Circuit:              QNA-0
  Ethernet Hardware Address:    08-00-2B-09-3C-94

Is the data correct (Y/N [Y])?  Return

PrintServer data will be added to SYS$MANAGER:LPS$NETSETUP_V4.COM

%LPS-I-FILECREATE, The file SYS$MANAGER:LPS$NETSETUP_V4.COM has been created.

  Please enable the service circuits serving the PrintServer
  nodes that you have just set up.  You may want to add lines
  to LPS$NETSETUP_V4.COM to enable service circuits automatically.

  Please refer to the PrintServer Supporting Host Installation
  Guide for VMS for additional information

Do you want accounting enabled (Y=on, N=off, R=reliable [N])?  Y

Should PrintServer FLIPT enable event logging (Y/N [Y])?  Y

What is PrintServer FLIPT's password [LPS]?  Return

  The next question asks you to choose the language to be
  displayed on the PrintServer 20 front panel.

  The languages you may choose from are the following:

  Dutch
  English
  French
  German
  Norwegian
  Swedish

What language would you like to display on the PrintServer 20
front panel [English]?  Return
```

(continued on next page)

Example C–1 (Cont.) Sample Postinstallation

```
  The next questions involve controlling client access via DECnet
  to the printer.  By default, the printer allows access from any
  DECnet client that wishes to connect to it.

Do you wish to restrict access to PrintServer FLIPT from specific
DECnet node addresses or area numbers (Y/N [N])?  Return

  The next question asks you if you want the PrintServer printer to
  accept Internet network connections. If your network environment is
  DECnet only then you may answer "NO" to the question.

  If you answer "YES", you will be prompted for additional data necessary
  to configure the PrintServer in an Internet network (Internet address,
  subnet mask and gateway address).

Do you want to provide an Internet address for PrintServer FLIPT,
thereby allowing it to accept Internet connections (Y/N [N])?  Y

What is the Internet address of PrintServer FLIPT ?  16.122.128.93

What is the Internet subnet mask for your network?  255.255.240.0

What is the address of the Internet gateway, if one is required
for accessing the PrintServer from remote clients?
Press Return if none is required:  Return


  The next questions involve controlling client access via Internet to
  PrintServer FLIPT.  By default, the printer allows access
  to any Internet client that wishes to connect to it.

Do you wish to restrict access to PrintServer FLIPT from specific
Internet addresses or network numbers (Y/N [N])?  Return

The following information will be entered in LPSCONFIG.FLIPT

  PrintServer name:       FLIPT
  Password:               LPS
  Front panel language:   English
  Accounting:             on
  Event Logging:          on

  Internet address:            16.122.128.93
  Internet subnet mask:        255.255.240.0

Is the data correct? (Y/N [Y])  Return

Configuration data will be entered in LPS$SUPPORT:LPSCONFIG.FLIPT

%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSCONFIG.FLIPT has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSDEFAULTS.FLIPT has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSRESOURCES.FLIPT has been created
%LPS-I-FILECREATE, The file LPS$SUPPORT:LPSOPTIONS.FLIPT has been created
```

(continued on next page)

Example C–1 (Cont.) Sample Postinstallation

```
%RUN-S-PROC_ID, identification of created process is 00000715

%LPS-I-CREATPROC, lps$start_daemon.com has started a
management client process for PrintServer FLIPT

system>>
```

D

Obtaining the Ethernet Hardware Address

The LPS$ADD_PRINTSERVER.COM procedure for setting up the supporting host software requires you to supply the Ethernet hardware address for the PrintServer printer. If this information has not already been made available, you can obtain the Ethernet hardware address from the printer.

- The PrintServer 20 and turbo PrintServer 20 printers have a front panel display from which you can obtain the Ethernet hardware address. Refer to Section D.1 for the procedure for obtaining the Ethernet hardware address from a PrintServer 20 or a turbo PrintServer 20 printer.
- The PrintServer 40 and the PrintServer 40 Plus have a console terminal that you can use to obtain the Ethernet hardware address. Refer to Section D.2 for the procedure for obtaining the Ethernet hardware address of the PrintServer 40 or PrintServer 40 Plus printer.

D.1 PrintServer 20 or turbo PrintServer 20 Ethernet Hardware Address

The PrintServer 20 and turbo PrintServer 20 printers have a two-line digital display window on the front panel that displays messages. This window displays the sequence of events during the boot process, as well as the status of the printer at any given time.

To determine the Ethernet hardware address for a PrintServer 20 or turbo PrintServer 20, perform the following steps:

1. Complete the hardware installation.
2. Turn the ON/OFF switch on the printer to the ON position.

   The printer begins its warm-up and power-up diagnostics sequence. The window displays a countdown sequence beginning with the number 9.

   The second line in this display represents the version number of the controller, the print engine, and the large capacity input tray (LCIT), respectively.

The following example shows the contents of the window upon completion of the power-up diagnostics.

```
+----------------------+
|  9,8,7,6,5,4,3,2,1,0 |
|  1.1 1.2 1.1         |
+----------------------+
```

3. When the countdown reaches the number 7, press Pause on the front panel of the printer. After a few minutes, the hardware address is displayed in the window in the format shown in the following example:

```
+----------------------+
|  08-00-2B-0C-86-3F   |
|  1.1 1.2 1.1         |
+----------------------+
```

Note

Pressing Pause halts the boot process only; the power-up diagnostics continue to run. This halt does not damage the printer. It gives you time to record the Ethernet hardware address and to complete the supporting host software installation.

4. Record this address in the space provided in Table 3–1.
5. Continue with the software installation procedures described in Chapter 3.

D.2 PrintServer 40 or PrintServer 40 Plus Ethernet Hardware Address

The PrintServer 40 and PrintServer 40 Plus printers display messages on the local console terminal.

If the printer's Ethernet hardware address is not readily available, you can determine it by placing the PrintServer in console mode and examining a series of Digital Ethernet Q-bus Network Adapter (DEQNA or DELQA) device registers. The PrintServer 40 uses a DEQNA and the PrintServer 40 Plus uses a DELQA.

The Halt switch on the back panel of the MicroVAX CPU must be set to the Enabled (on) position. Refer to the printer installation guide for instructions on setting this switch.

To determine the Ethernet hardware address for a PrintServer 40 or PrintServer 40 Plus printer, perform the following steps:

1. If the printer console does not display the >>> prompt, press the power ON/OFF button on the PrintServer printer to the OFF position and then to the ON position.

2. At the >>> prompt, enter the following command:

   ```
   >>> E/P/W/N:5 20001920
   ```

   The system displays six output strings of the form P 2000192*x* FF*yy*. For example:

   ```
   P  20001920  FF08
   P  20001922  FF00
   P  20001924  FF2B
   P  20001926  FF02
   P  20001928  FFD4
   P  2000192A  FFC3

   >>>
   ```

   The last two characters of each output string (*yy*), when joined consecutively and separated by hyphens, form the PrintServer Ethernet hardware address.

   The hardware address in this example is 08-00-2B-02-D4-C3.

3. Record the address in the space provided in Table 3–1.

NOTE

Return the Halt switch on the MicroVAX back panel to the Disabled (off) position after obtaining the Ethernet hardware address.

E

Digital PostScript Printer Software Documentation

This appendix contains a listing of Digital software documents and documentation kits associated with PostScript printers, and their respective order numbers. For ordering instructions, see How To Order Additional Documentation, at the end of this book.

DEC PrintServer Supporting Host Software for ULTRIX

1. Complete documentation kit (order number: QA–VVZAA–GZ)
   - *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*
   - *DEC PrintServer Supporting Host Software for ULTRIX Management Guide*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*
   - *PostScript Printers Programmer's Supplement*
   - *PostScript Language Reference Manual*
   - *PostScript Language Tutorial and Cookbook*
   - 10 *User Features Cards* (EK–TPS20–RC)
2. Installation and management kit (order number: QA–VVZAB–GZ)
   - *DEC PrintServer Supporting Host Software for ULTRIX Installation Guide*
   - *DEC PrintServer Supporting Host Software for ULTRIX Management Guide*
   - 10 *User Features Cards* (EK–TPS20–RC)

3. Programming guides kit (order number: QA–VVZAC–GZ)
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*
   - *PostScript Printers Programmer's Supplement*
4. PostScript tutorial/reference books kit (order number: QA–VVZAD–GZ)
   - *PostScript Language Reference Manual*
   - *PostScript Language Tutorial and Cookbook*

DEC PrintServer Supporting Host Software for VMS

1. Complete documentation kit (order number: QA–798AA–GZ)
   - *DEC PrintServer Supporting Host Software for VMS Installation Guide*
   - *DEC PrintServer Supporting Host Software for VMS Management Guide*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*
   - *PostScript Printers Programmer's Supplement*
   - *PostScript Language Reference Manual*
   - *PostScript Language Tutorial and Cookbook*
   - 10 *User Features Cards* (EK–TPS20–RC)
2. Installation and management kit (order number: QA–798AB–GZ)
   - *DEC PrintServer Supporting Host Software for VMS Installation Guide*
   - *DEC PrintServer Supporting Host Software for VMS Management Guide*
   - 10 *User Features Cards* (EK–TPS20–RC)
3. Programming guides kit (order number: QA–798AC–GZ)
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*

- *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*
- *PostScript Printers Programmer's Supplement*

4. PostScript tutorial/reference books kits (order number: QA–798AD–GZ)
   - *PostScript Language Reference Manual*
   - *PostScript Language Tutorial and Cookbook*

DECfonts Typeface Collection

1. Documentation can be ordered only as part of a media kit. For ULTRIX operating systems, the order number is QA–YX6AB–H*; for VMS operating systems, the order number is QA–YX6AA–H*. The asterisk is a 5 for TK50 medium or an M for magnetic tape.)
   - *DECfonts Typeface Collection Font Kit Installation and User's Guide*

DECprint Printing Services Software for VMS

1. Complete documentation kit (order number: QA–YNCAA–GZ)
   - *DECprint Printing Services Software Installation Guide*
   - *DECprint Printing Services User's Guide*
   - *DECprint Printing Services System Manager's Guide*

Digital ANSI-Compliant Level 3 Printing Protocol

1. Documentation kit (order number: QA–YNCAC–GZ)
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*
   - *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*

DECprint Utility for PostScript to Sixel Printing for VMS

1. Documentation kit (order number: QA–VZPAA–GZ)
   - *Installation/User's Guide: DECprint Utility for PostScript to Sixel Printing for VMS*

Other PostScript Printers Programming Documentation

1. *Font File Format User's Guide* (EK–CFFFM–UG)
2. *PostScript Translator's Reference Manual for ReGIS and Tektronix 4010/4014* (AA–PBWFA–TE)

PrintServer Client Software for ULTRIX

This documentation kit applies only for ULTRIX operating systems, Version 4.0 and lower.

1. Complete documentation kit (order number: QA–VVMAA–GZ)
   - *Installation Guide: PrintServer Client for ULTRIX*
   - *User's Guide: PrintServer Client for ULTRIX*
   - *Reference Card: PrintServer Client for ULTRIX*
   - *Release Notes: PrintServer Client for ULTRIX*

PrintServer Source Kit for ULTRIX

1. Documentation can be ordered only as part of a media kit (order number: QB–VVMA9–YM)
   - *Porting Guide: PrintServer TCP/IP Client for ULTRIX*
   - *Release Notes: PrintServer TCP/IP Client for ULTRIX*

VAX Distributed Queuing Service for VMS

1. Complete documentation kit (order number: QA–VENAA–GZ)
   - *VAX Distributed Queuing Service Installation Guide*
   - *VAX Distributed Queuing Service User's Guide*
   - *VAX Distributed Queuing Service Management Guide*
   - *VAX Distributed Queuing Service Command Reference*

VAX PrintServer Client for VMS

This documentation kit applies only for VMS operating systems, Version 5.3 and lower.

1. Complete documentation kit (order number: QA–797AA–GZ)
   - *Installation Guide: VAX PrintServer Client*
   - *Management/User's Guide: VAX PrintServer Client*
   - *Release Notes: VAX PrintServer Client*
   - *PostScript Printers Programmer's Supplement*
   - *PostScript Language Reference Manual*
   - *PostScript Language Tutorial and Cookbook*
   - *PostScript Translators Reference Manual*

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