DECprint Printing Services

Software Installation Guide

AA–PBZEA–TE

This manual describes how to install the DECprint Printing Services software and how to configure print queues for printing.

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About This Guide

Intended Audience

The *DECprint Printing Services Software Installation Guide* is intended for use by system managers responsible for installing the DECprint Printing Services software and for defining and maintaining the print queues.

Anyone performing the procedures in this manual should be familiar with the VMS DCL command language and the procedures and commands in the *DECprint Printing Services System Manager's Guide*.

If you are installing the DECprint Printing Services software, you should be familiar with the VMSINSTAL utility for installing VMS software. Network printer installation requires some knowledge of DECnet network management. And, if you are installing serial printers on DECserver devices, you should have some knowledge of DECserver software management.

Document Structure

This manual contains the following chapters and appendixes:

- Chapter 1 lists the printers supported by DECprint Printing Services software and the capabilities of each printer.
- Chapter 2 lists the hardware and software prerequisites for installing the DECprint Printing Services software. Read this chapter before you run the VMSINSTAL utility to install DECprint Printing Services software.

- Chapter 3 contains the procedures for installing the DECprint Printing Services software. It also contains the procedures for starting the printer software and testing the printer.
- Chapter 4 describes procedures to perform after you run VMSINSTAL for setting up certain types of printers and printer configurations. This chapter is helpful for installing a new PostScript printer.
- Chapter 5 describes procedures for defining and starting print queues at your site.
- Appendix A shows a sample installation procedure.
- Appendix B shows a sample printer startup command file.
- Appendix C shows the Installation Verification Procedure (IVP) test files, which you can print after installation to test the printing system.
- Appendix D lists the files and libraries created during the installation procedure.
- Appendix E lists the error and status messages you might encounter during installation of DECprint Printing Services, and explains how to respond to them.

DECprint Printing Services Software Documentation

The DECprint Printing Services software documentation kit consists of the following manuals:

- *DECprint Printing Services Software Installation Guide*
- *DECprint Printing Services System Manager's Guide*
- *DECprint Printing Services User's Guide*

Associated Documents

The following documents are associated with the DECprint Printing Services software:

- *Installation Guide: VAX PrintServer Supporting Host*
- *Management Guide: VAX PrintServer Supporting Host*
- *User's Guide: PrintServer Client for ULTRIX*
- *Programmer's Supplement: PostScript Printers*
- *PostScript Language Reference Manual*

- *PostScript Translators Reference Manual for ReGIS and Tektronix 4010/4014*
- *Digital ANSI-Compliant Printing Protocol Level 3 Programming Reference Manual*
- *Digital ANSI-Compliant Printing Protocol Level 3 Programming Supplement*
- *VMS DCL Dictionary*
- *Introduction to VMS System Management*
- *Guide to VAX/VMS Software Installation*
- *VAX/VMS System Messages and Recovery Procedures Reference Manual*
- *VAX/VMS System Manager's Reference Manual*
- *Guide to Maintaining a VMS System*
- *VMS License Management Utility Manual*
- *DEClaser 2100 Printer Operator's Guide*
- *DEClaser 2200 Printer Operator's Guide*
- *DEClaser Printer PostScript Cartridge User's Guide*
- *LN03R ScriptPrinter Installation Guide*
- *LN03R ScriptPrinter Operator's Guide*
- *DECserver 100 Terminal Server Operator's Guide*
- *DECserver 200 Management Guide*
- *DECserver 500 Management Guide*
- *Guide to Terminal Server Manager*
- *VMS LAT Control Program (LATCP) Manual*

Conventions

The following conventions are used throughout this document:

Convention	Meaning
UPPERCASE	Uppercase characters indicate DCL commands, qualifiers, and parameters.
italics	Italic characters are used in command examples to indicate that you are to substitute a word or value of your choice.
bold	Bold characters are PostScript operators or error message prefix strings. For online display, bold is used in examples to show the characters that you should enter as part of the procedure.
`red`	In the printed book, red ink is used in examples to show the commands that you should enter as part of the procedure.
[ ]	Brackets indicate that the enclosed item is optional.
Ctrl/*x*	This symbol indicates a control key sequence. Press the key labeled Ctrl while you simultaneously press another key, represented by *x*.
Return	This symbol indicates that you should press the Return key.

1

Overview

This chapter provides an overview of Digital's PostScript printers and the software features of the DECprint Printing Services software, as follows:

- Printers supported by DECprint Printing Services software, Section 1.1
- Capabilities of the DECprint Printing Services software, Section 1.2
- Differences between installing DECprint Printing Services and installing existing printer system software, Section 1.3

1.1 Printers Supported by DECprint Printing Services

The DECprint Printing Services software supports the printers listed in Table 1–1.

Table 1–1 Supported Printers

Product Name	Printer Model Number	Maximum Pages per Minute	Simplex or Duplex	Comm. Interface
ScriptPrinter	LN03R	8	Simplex	Serial
LN03 Image	LN03Q	8	Simplex	Special
PrintServer 20	LPS20	20	Duplex	Ethernet
PrintServer 40	LPS40	40	Simplex	Ethernet
PrintServer 40 Plus	LPS40 Plus	40	Simplex	Ethernet
DEClaser 2150[1]	LN05R	8	Simplex	Serial
DEClaser 2250[1]	LN06R	8	Duplex	Serial

[1]DEClaser 2150 represents the DEClaser 2100 printer with the PostScript upgrade cartridge. DEClaser 2250 represents the DEClaser 2200 printer with the PostScript upgrade cartridge.

1.2 Capabilities of DECprint Printing Services Software

Digital's PostScript printers support PostScript printing, using laser printing technology to produce high-quality printouts. Through DECprint Printing Services, Digital's PostScript printers print DDIF bitonal image files, Adobe's PostScript page description language, and the ANSI/sixel, ReGIS, Tektronix 4010/4014, and PCL data syntaxes. Translator software converts these files into PostScript code.

Using DECprint Printing Services software, you can submit print jobs from the PRINT command line or by using the VMS system service $SNDJBC in an application program to print user files. The PRINT command line consists of the standard VMS DCL PRINT command with appropriate qualifiers. Several parameters for the /PARAMETERS qualifier are defined to extend printing functions. User notification of printer status is available through the /NOTIFY qualifier.

You can enhance the print job by including setup modules. PostScript setup modules allow you to redefine the PostScript environment; ANSI setup modules can send ANSI escape sequences to affect ANSI print jobs. For more information, refer to *DECprint Printing Services System Manager's Guide*.

DECprint Printing Services emulates the printing features of the LN03 printer, allowing customers to replace or upgrade their LN03 printers to PostScript printers without loss of print capabilities. To aid in this product migration, Digital offers the SoftFonts products for emulating LN03 font cartridges on PostScript printers. Refer to the *DECprint Printing Services User's Guide* for more information on the FONTS_USED parameter to the PRINT command.

The following sections describe each type of printer supported by DECprint Printing Services software and the special characteristics of each.

1.2.1 DEClaser 2150/2250 Printers

DEClaser printers

The DEClaser 2150 and 2250 printers are desktop printers for PostScript printing.

- The DEClaser 2150 printer is the base DEClaser 2100 printer with additional memory and the PostScript cartridge installed in the cartridge slot on the front of the printer.
- The DEClaser 2250 is the base DEClaser 2200 with additional memory and the PostScript cartridge installed in the cartridge slot on the front of the printer.

Both printers feature manual feeding of media and printing of envelopes using an envelope cassette. They are compatible replacements for a ScriptPrinter printer. As such, DEClaser 2150/2250 printers are equipped with a serial interface suitable either for direct hardware connection to the system or for connection to a DECserver device on the Ethernet.

The DEClaser 2200 printer provides these additional features over the DEClaser 2100 printer:

- Duplex (two-sided) printing
- Optional envelope feeder
- Two input tray slots

For information about using these features, refer to the *DECprint Printing Services User's Guide*.

For information about upgrading the DEClaser 2100 or 2200 printer to DEClaser 2150/2250, refer to the *DEClaser Printer PostScript Cartridge User's Guide*.

Installing Software for DEClaser Printers

To install the DECprint Printing Services software to support a DEClaser 2150 or DEClaser 2250 printer, follow the procedures described in the sections listed below:

1. To prepare for installing the DECprint Printing Services software to support a new DEClaser printer, follow the instructions in Chapter 2. Section 2.2 lists hardware requirements specific to the DEClaser printers.
2. Run VMSINSTAL to install the DECprint Printing Services software, as described in Chapter 3.
3. If your DEClaser 2150/2250 printer is connected to a DECserver port for network access, follow the instructions in Section 4.8.
4. To create and modify print queues and set up the printing software, refer to Chapter 5.

1.2.2 PrintServer Printers

PrintServer printers

The PrintServer 20, PrintServer 40, and PrintServer 40 Plus printers are high-speed network printers with multiple input trays and output trays. PrintServer 20 printers support duplex (two-sided) printing; the PrintServer 40 and PrintServer 40 Plus printers support simplex (one-sided) printing only.

Every PrintServer printer is a node on an Ethernet network and communicates with other nodes in the network. The nodes that access PrintServer printers using DECprint Printing Services software are referred to as ''PrintServer clients.'' The client nodes running DECprint Printing Services must also be running DECnet software to access the PrintServer printer.

The network node that performs boot services and printer management services for PrintServer printers is called the ''supporting host.'' The node that functions as the supporting host can also be a PrintServer client, but this is not a requirement. Refer to *Installation Guide: VAX PrintServer Supporting Host* for information about installing the PrintServer Supporting Host software. See the *Management Guide: VAX PrintServer Supporting Host* for information about PrintServer Supporting Host management.

Installing Software for PrintServer Printers

To install the DECprint Printing Services software on a PrintServer client system on the network, follow the instructions listed below:

1. Prepare for the software installation as described in Chapter 2. Specific PrintServer hardware requirements are described in Section 2.3.
2. Run VMSINSTAL to install the DECprint Printing Services software, as described in Chapter 3.
3. Before you start the DECprint Printing Services queue, make sure that the supporting host software is installed and that the printer has been booted (refer to the *Installation Guide: VAX PrintServer Supporting Host*). Enter the PrintServer node name and address in the DECnet node database. Refer to Section 4.3.
4. Follow the procedures for installing DECprint Printing Services to support PrintServer printers, as described in Section 4.3.
5. Create or modify print queues as described in Chapter 5, to customize the printer environment on the client system.

1.2.3 LN03 Image Printers

LN03 Image printers

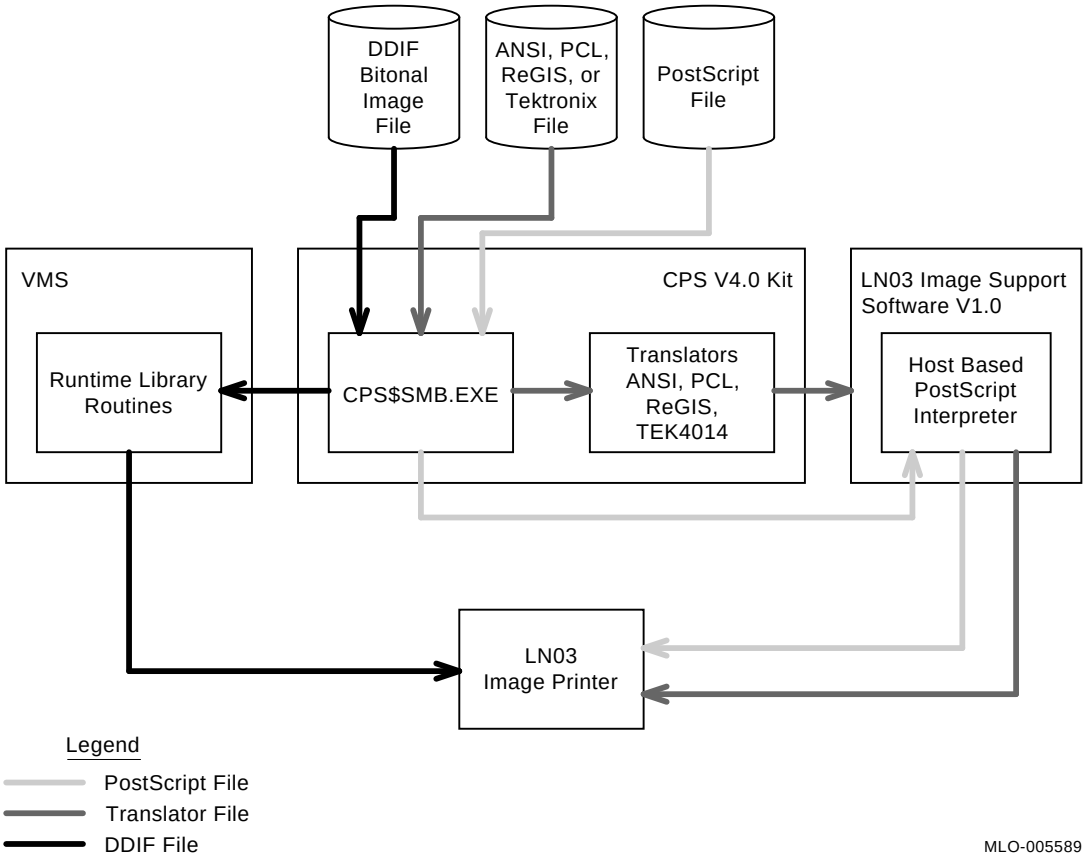
The LN03 Image printer is a desktop printer for image printing. It receives a bitmap over a high-speed interface to print an image. This printer is capable of printing image files much faster than the other printers supported by DECprint Printing Services. A PostScript interpreter produces bitmap information from PostScript code to print the data on the LN03 Image printer.

The LN03 Image printer software consists of the following components:

- LN03 Image Services software
- DECprint Printing Services software

Figure 1–1 illustrates the operations for printing each type of file data syntax on the LN03 Image printer.

Figure 1–1 LN03 Image Printer Software



As illustrated in Figure 1–1, the following types of file data syntax require processing by one or more software components:

- PostScript files
- Digital Document Interchange Format (DDIF) bitonal image files
- Files that require translation: ANSI, ReGIS, Tektronix 4010/4014, and Hewlett-Packard PCL data syntax.

The software components that allow these types of files to be printed on the LN03 Image printer are:

- VMS DECwindows applications programming software
- DECprint Printing Services software

- LN03 Image Support software

Installing Software for LN03 Image Printers

To install the DECprint Printing Services software to support an LN03 Image printer, follow these instructions:

1. Install the LN03 Image Support software before you install the DECprint Printing Services software.
2. Prepare the system by following the instructions in Chapter 2. Specific hardware requirements for an LN03 Image printer are described in Section 2.4.
3. Run VMSINSTAL to install the DECprint Printing Services software, as described in Chapter 3.
4. Follow the instructions for installing DECprint Printing Services software to support LN03 Image printers, as described in Section 4.4.

   You may need to adjust certain system parameters. The SYSGEN parameter values that you must change are listed in Table 4–2. Changing these parameters requires the system to be rebooted.
5. Before you start the queue, follow the directions in Chapter 5 to create or modify print queues and customize your printing system.

1.2.4 ScriptPrinter Printers

ScriptPrinter printers

The ScriptPrinter printer is a desktop printer for PostScript printing. It can serve as a local printer for a VMS system. ScriptPrinter printers are connected to the host system either by a DECserver port or by direct serial line interface.

Installing Software for ScriptPrinter Printers

To install a new ScriptPrinter printer, follow the instructions listed below:

1. Prepare for the software installation by reading Chapter 2 for serial printers. In particular, refer to Section 2.2.
2. Run VMSINSTAL to install the DECprint Printing Services software, as described in Chapter 3.
3. Follow the instructions for installing the DECprint Printing Services software to support ScriptPrinter printers described in Section 4.1. To install a ScriptPrinter printer on a DECserver port for network access, refer to Section 4.8.

4 Follow the instructions in Chapter 5 to initialize or modify print queues and to customize the printing system.

1.3 Printing System Compatibility

The DECprint Printing Services software replaces the VAX PrintServer Client Version 3.0 and the VAX ScriptPrinter Version 2.1 software products.

1.3.1 Upgrading PrintServer Client Software

PrintServer printers

PrintServer client installation for DECprint Printing Services requires you to run VMSINSTAL, create the printer startup file, and edit the system startup file. In order to use DECprint Printing Services Version 4.0, the supporting host system must be running PrintServer Supporting Host Version 3.0 and higher.

Sites upgrading from the PrintServer Client software should note that the new printer startup file CPS$STARTUP.COM replaces the LPS$STARTUP.COM file for PrintServer Client V3.0 software. CPS$STARTUP.COM allows you to define your queue structure. You include the PrintServer printer node name in the execution queue definition in CPS$STARTUP.COM.

The DECprint Printing Services software kit includes a template file for specifying generic and execution queues. The resulting startup file is preserved during subsequent software installations. Refer to Chapter 4 for instructions.

The existing LPS$STARTUP.COM file is not compatible with DECprint Printing Services Version 4.0. You can use the standard CPS$DELETE_LPS_CLIENT.COM file to delete the files that are not required for DECprint Printing Services. See Section 4.3.1.3 for more information.

1.3.2 Upgrading ScriptPrinter and LN03 Image Software

ScriptPrinter and LN03 Image printers

Sites currently running ScriptPrinter Version 2.1 software need only perform the VMSINSTAL procedure described in Chapter 3 and then stop and restart the print queues, to upgrade to DECprint Printing Services Version 4.0.

The ScriptPrinter Version 2.1 startup command file is compatible with DECprint Printing Services software. The CPS$STARTUP.COM file does not require modification, unless printers or queues are being changed. The new software introduces no significant new installation or startup considerations for existing ScriptPrinter sites.

Sites currently running versions of ScriptPrinter software lower than Version 2.1 (Versions 1.0, 1.1, and 2.0) must perform a complete installation as outlined in Section 1.2.4.

2

Preinstallation Requirements

This chapter describes the hardware environment and software requirements for installing DECprint Printing Services on the host system, as follows:

- Hardware requirements, Section 2.1
- Specific hardware requirements for ScriptPrinter and DEClaser printers, Section 2.2
- Specific hardware requirements for PrintServer printers, Section 2.3
- Specific hardware requirements for LN03 Image printers, Section 2.4
- Software prerequisites for installing DECprint Printing Services, Section 2.5
- Software distribution kit, Section 2.6

2.1 Hardware Requirements for All Printers

The following hardware requirements are common to sites using DECprint Printing Services to drive Digital's PostScript printers:

- The appropriate input device to hold the distribution media.

  The DECprint Printing Services software is distributed in the following forms of media:

  - 1600 BPI magnetic tape
  - TK50 COMPACTape cartridge
  - CDROM (compact disc read-only memory)

- Appropriate communications hardware for the printer configuration.
- Adequate disk space for installation and operation of the DECprint Printing Services software.

In addition, each type of printing device supported by DECprint Printing Services requires special hardware, as described in the following sections.

2.2 DEClaser 2150/2250 and ScriptPrinter Hardware Requirements

DEClaser and ScriptPrinter only

The DEClaser and ScriptPrinter printers are serial printers, which are connected to the host system either by a DECserver port or by direct serial line interface. Configuration of DECserver connections for serial printers is described in Section 4.8.

Note *CSA0 (printer port 0 on VAXstation II and VAXstation II/GPX systems) is not a supported interface for serial printers.*

For DEClaser printers, this interface requires an H8571-E adapter (refer to the DEClaser 2200 Printer Installation Guide*).*

2.3 PrintServer Hardware Requirements

PrintServer only

Before you can run DECprint Printing Services software on the client system to print files on a PrintServer printer, the PrintServer printer must be installed on the Ethernet.

2.4 LN03 Image Printer Hardware Requirements

LN03 Image only

The LN03 Image printer requires one of the following Q-bus interfaces:

- LNV21–AA dual-sized controller for BA123/BA23 enclosures (BC27H–15 cable)
- LNV21–SA or LNV21–SF quad-sized controller for BA213 enclosure (BC27P–15 cable)

2.5 Software Requirements

To install DECprint Printing Services software, the host system must be running VMS Version 5.3 or higher.

Serial printers on DECserver devices

For serial printers on DECserver devices, ensure that the LAT software is started before you start the print queues.

PrintServer

For PrintServer printers, ensure that the PrintServer printer is installed and booted with its software before you start the print queue. DECnet–VAX software (Version 5.3 or higher) must be running on the client system.

LN03 Image

For the LN03 Image printer, set system parameters as described in Section 4.4, and install the LN03 Image Support software kit before you start the print queue.

2.6 DECprint Printing Services Software Distribution Kit

Check the contents of the DECprint Printing Services Software Distribution Kit against the bill of materials. The distribution kit should contain:

- Software labeled VMS DECprint Printing Services software, Version 4.0.
- The DECprint Printing Services Software Documentation Kit.

3

Installing the Software

This chapter describes how to install DECprint Printing Services software on a VMS system, using the VMSINSTAL utility. If you are not familiar with the VMSINSTAL utility, read the *Guide to VAX/VMS Software Installation*.

The procedures described in this chapter include:

- Conventions for using the VMSINSTAL utility, Section 3.1
- Running VMSINSTAL for DECprint Printing Services, Section 3.2
- Procedures for starting the new printer software, Section 3.3
- Procedures for upgrading DECprint Printing Services software, Section 3.4
- Testing the DECprint Printing Services software, printer, and queues, Section 3.5

Perform the following steps before you begin the installation procedure:

1. Read the installation procedures, preparing the information you must supply as you install the software and define the print queues.
2. The installation procedure replaces the device control library CPS$DEVCTL.TLB. If you have a previous version of ScriptPrinter software and you have modified the CPS$DEVCTL.TLB library, extract any site-specific device control library modules from CPS$DEVCTL.TLB and copy them to a directory that is unaffected by the installation procedure. You should create your own device control libraries

for custom device control modules. Refer to Section 5.3.3.2 for more information.

3 Make a backup copy of the software distribution media.

4 Mount the distribution media on an appropriate input device.

5 Check that you have enough disk space:

- For installation: 4500 blocks (2.3 Mbytes)
- For permanent storage without the ALL–IN–1 compatibility kit : 2500 blocks (1.3 Mbytes)
- For permanent storage with the ALL–IN–1 compatibility kit: 4500 blocks (2.3 Mbytes)

6 Log in to the system manager's account.

3.1 VMSINSTAL Conventions

The VMSINSTAL procedure is interactive. The system prompts you for information and responds with instructions, statements, queries, and messages.

Instructions guide you through the procedure or provide you with information relevant to subsequent queries. Messages inform you of the status and progress of the installation procedure.

Queries are preceded by an asterisk (*) and may be followed by default responses enclosed in brackets ([ ]). Enter your response followed by Return. Press Return to enter the default response. If you are not sure of the response, enter a question mark (?). VMSINSTAL displays explanatory text and repeats the prompt.

VMSINSTAL messages are documented in the *Guide to VAX/VMS Software Installation*. Messages specific to the installation of DECprint Printing Services software are listed in Appendix E.

3.2 Installation Procedure

Note *This section does not reproduce all of the text you will see on your screen during the installation procedure. A sample VMSINSTAL procedure is shown in Appendix A.*

Invoke the VMSINSTAL procedure as follows:

```
$ @SYS$UPDATE:VMSINSTAL CPS040 device-id [OPTIONS N]
```

In this command line, you supply the following information:

CPS040	Refers to the DECprint Printing Services software save set.
device-id	Is the device on which the distribution media is mounted. This may be a tape or disk device.
[OPTIONS N]	Invokes the release notes option, allowing you to display or save a copy of the release notes. This portion of the command line is optional. If you omit this option, the Release Notes question (Section 3.2.1) is omitted from the VMSINSTAL dialog and the release notes are automatically copied to SYS$HELP.

Next, VMSINSTAL displays a banner line, the date and time, the statement that you can enter a question mark (?) at any time for help, and one or more warning messages if appropriate. You can continue the installation or exit to modify the conditions causing the warning messages.

If you are not currently logged in to the SYSTEM account, the following message is displayed:

```
VMSINSTAL-W-NOTSYSTEM, You are not logged in to the SYSTEM account.
```

If DECnet software is running, the following message is displayed:

```
%VMSINSTAL-W-DECNET, Your DECnet network is up and running.
```

If processes are running on the system while VMSINSTAL is running, the following type of message is displayed:

```
%VMSINSTAL-W-ACTIVE, The following processes are still active:
 process-name
```

When any of these messages are displayed, the following query allows you to terminate VMSINSTAL and correct the situation if necessary:

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

Enter YES to continue. DECnet software does not have to be stopped during the software installation procedure.

If you answer NO, the VMSINSTAL procedure is terminated immediately. If you enter a question mark (?), the following explanation is displayed:

```
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.
```

You are then asked:

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

Enter YES to continue or NO to exit VMSINSTAL to make a backup and run VMSINSTAL again.

If you enter a question mark (?) in response to this question, VMSINSTAL displays the following 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.
```

If the distribution media is mountable, VMSINSTAL then asks for confirmation that the distribution media has been mounted.

```
 Please mount the first volume of the set on device-id:
* Are you ready?
```

Enter YES when ready.

VMSINSTAL displays the name and version of the product being installed, the start time of the installation, and confirmation of the restoration of each save set on the distribution media.

```
The following products will be processed:

CPS V4.0

 Beginning installation of CPS V4.0 at 13:45

%VMSINSTAL-I-RESTORE, Restoring product saveset A
```

3.2.1 Choosing Release Notes Options

If you specified OPTIONS N in the VMSINSTAL command line, the following release notes options are displayed:

```
Release Notes Options:
       (1) Display release notes
       (2) Print release notes
       (3) Both of above
       (4) None of the above
```

You can enter the number corresponding to the option you prefer:

- If you enter 1, the release notes are displayed on your terminal and are copied to CPS040.RELEASE_NOTES in SYS$HELP.
- If you enter 2, the release notes are queued to SYS$PRINT for printing, and copied to CPS040.RELEASE_NOTES in SYS$HELP.

- If you enter 3, the release notes are displayed on your terminal, queued to SYS$PRINT, and copied to CPS040.RELEASE_NOTES in SYS$HELP.
- If you enter 4, the release notes are not printed, displayed, or copied to SYS$HELP.

After you enter the release note option, VMSINSTAL asks whether you want to continue the installation procedure:

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

If you did not include the OPTIONS N portion of the VMSINSTAL command line, VMSINSTAL does not display the release notes options. Instead the following message is displayed:

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

3.2.2 Purging Files

VMSINSTAL asks if you want to purge any files that are being replaced.

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

Enter YES if you want to save disk space or NO if you think the files may still be of use.

If you enter a question mark (?) in response to this query, the following message is displayed:

```
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.
```

VMSINSTAL checks to see if the amount of disk space required for the installation is available. If the space is not available, a message indicates the amount of disk space that is required, and the installation is aborted. Otherwise, the installation continues.

3.2.3 Selecting a Logical Definition for LPS$LAYUP

Next, the installation procedure looks for a logical definition of LPS$LAYUP in the system table in executive mode. If a definition exists, the following message is displayed:

```
%CPS-I-LAYUPDEF, LPS$LayUp is already defined
-CPS-I-LAYUPDEF, This installation will use its value
```

If an LPS$LAYUP definition does not exist, the procedure asks you to specify one. Press Return to select SYS$SYSROOT:[SYSHLP.EXAMPLES.CPS] as the default, or enter a disk directory specification.

```
* Full definition for LPS$LayUp [SYS$SYSROOT:[SYSHLP.EXAMPLES.CPS]]:

% VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.CPS]
```

3.2.4 Selecting ALL–IN–1 Compatibility Kit

In this question, the VMSINSTAL procedure allows you to install the ALL–IN–1 compatibility kit at a later time. The ALL–IN–1 compatibility kit allows you to take advantage of the advanced features of DECprint Printing Services for printing on Digital PostScript printers, as well as enhanced printing efficiency.

If you want this option, the following files are optionally copied to [SYSHLP.EXAMPLES.CPS]:

- PS-PRINTING-ALL-IN-1-COMPAT.SAV, which contains the software save set, including a PostScript file with instructions for installing the save set.
- PS-PRINTING-ALL-IN-1-COMPAT.TXT, an ASCII text file with instructions for installing the ALL–IN–1 compatibility kit.

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

Enter YES if you want the optional ALL–IN–1 compatibility kit. If you enter NO, the DECprint Printing Services software will not include this function. If you enter a question mark (?) in response to this query, the following explanation is displayed:

```
1900 blocks, provides scripts for PostScript printing
```

3.2.5 Installation Verification Procedure Check

VMSINSTAL checks to see if the queue manager is running on your system.

If the queue manager is not present, the Installation Verification Procedure (IVP) is not run, and the following messages are displayed on your screen:

```
%CPS-I-NOQUEMGR, System queue manager is not running
-CPS-I-NOQUEMGR, IVP will NOT run.  Installation continuing ...
```

The queue manager must be running if you want the installation to run an Installation Verification Procedure (IVP). (Refer to Section 3.2.7.)

If necessary, VMSINSTAL creates a disk directory for the IVP files:

```
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.CPS].
```

If the directory already exists, the following message is displayed:

```
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.CPS] already exists
```

VMSINSTAL also creates a disk directory for the example files:

```
%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.CPS]
```

If the directory already exists, the following message is displayed:

```
%CREATE-I-EXISTS, VMI$ROOT:[SYSHLP.EXAMPLES.CPS] already exists
```

Then VMSINSTAL displays the following message on your screen:

```
%CPS-I-NOQUES, No further questions will be asked.
```

As it restores each save set, VMSINSTAL reports on its progress:

```
VMSINSTAL-I-RESTORE, Restoring product saveset B ...
VMSINSTAL-I-RESTORE, Restoring product saveset C ...
```

This operation may require up to 20 minutes to complete.

3.2.6 Completing the Installation Procedure

VMSINSTAL then displays a message on your screen reminding you to perform the following procedures:

```
Please remember to copy SYS$StartUp:CPS$StartUp.Template to
SYS$StartUp.Com.  Then edit this file following the instructions to
create your queues.  Finally execute this file to establish and start
the queues.  Also remember to edit SYS$Manager:SyStartUp_V5.Com to
establish your queues at system startup time.

If you use LAT devices, this file should be executed after the
LAT devices are created.  If you use PrintServers, this file should
be executed after DECnet is running.  If you use both types of
printers, both of the above conditions should be satisfied before the
startup file is executed.
```

These procedures are described in Chapter 4 and Chapter 5.

VMSINSTAL now moves files from the temporary locations used during installation to their permanent directories.

```
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...
```

3.2.7 Installation Verification Procedure

The Installation Verification Procedure (IVP) verifies that the installation procedure was successful. The IVP runs automatically and queues the test files in [SYSTEST.CPS] to the temporary print queue CPS$IVP_TEST.

Note *The IVP does not produce any hardcopy output.*

The IVP creates a temporary print queue, CPS$IVP_TEST, submits print jobs to the temporary queue, and displays the following messages:

```
%CPS-I-IVP. Beginning IVP...
JOB CPS$IVP_POST (queue CPS$IVP_TEST, entry 61) started on CPS$IVP_TEST
JOB CPS$IVP_ANSI (queue CPS$IVP_TEST, entry 62) started on CPS$IVP_TEST
JOB CPS$IVP_REGIS (queue CPS$IVP_TEST, entry 63) started on CPS$IVP_TEST
JOB CPS$IVP_TEK4014 (queue CPS$IVP_TEST, entry 64) started on CPS$IVP_TEST
JOB CPS$IVP_PCL (queue CPS$IVP_TEST, entry 64) started on CPS$IVP_TEST
```

The test procedure automatically deletes the temporary queue after the IVP runs. You can print the IVP files later. (Refer to Section 3.5.)

VMSINSTAL issues an informational message when the IVP is completed:

```
        IVP successful for VMS DECprint Printing Services Software V4.0
```

VMSINSTAL issues its final messages:

```
        Installation of CPS V4.0 completed at 14:04

        VMSINSTAL procedure done at 14:08
$
```

When the VMSINSTAL procedure is complete, follow the instructions in the VMSINSTAL dialog, outlined below. The final steps of the installation procedure are described in Chapter 4.

3.3 Starting the DECprint Printing Services Printing System

To start a printer and print files, perform the following steps after you run VMSINSTAL.

1 Prepare the printer as described in the section appropriate to the printer being installed:

- ScriptPrinter printer, Section 4.1
- DEClaser printer, Section 4.2
- PrintServer printer, Section 4.3
- LN03 Image printer, Section 4.4

- ScriptPrinter or DEClaser printer with a DECserver connection, Section 4.8

2 Create the CPS$STARTUP.COM file from the distributed CPS$STARTUP.TEMPLATE file (see Chapter 5). This step is not necessary if you are upgrading from ScriptPrinter Version 2.1 software.

3 Edit the system startup file SYS$MANAGER:SYSTARTUP_V5.COM to include a call to CPS$STARTUP.COM, if the system startup file does not already include this call. (This change to the system startup file is not necessary if you are currently running ScriptPrinter Version 2.1 software.)

Look for the following command:

```
$ @SYS$STARTUP:CPS$STARTUP
```

If this command is not included in the system startup file, add it to the file after the command to start STARTNET.COM (for PrintServer printers) or LTLOAD.COM (for printers on DECserver devices).

Note that an existing PrintServer site may have a system startup file with the following command:

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

For PrintServer sites, delete this command and insert the correct call to CPS$STARTUP, as shown above.

4 After exiting from the editor, invoke the printer startup command file with the following command:

```
$  @SYS$STARTUP:CPS$STARTUP
```

3.4 Upgrading Printer Software

If you have an existing PostScript printer and DECprint Printing Services software, you can add and delete printers from your system, or add and delete execution or generic queues, without running VMSINSTAL. To upgrade your printer software, follow these steps:

1 Stop the queues you want to change, using the following command:

```
$  STOP/QUEUE/NEXT queue-name[:]
```

2 Make any changes needed to CPS$STARTUP.COM, adding and deleting the definitions for the desired execution and generic queues (see Chapter 5).

3 If you are deleting a queue, check to see that no jobs are waiting in the queue to be printed. Use the following commands to check the queue and to delete the queue:

```
$  SHOW/QUEUE/ALL queue-name[:]
$  DELETE/QUEUE queue-name[:]
```

4 Before starting DECprint Printing Services software, you should power cycle (turn off and then turn on) any serial printers. This clears resources and allows the reloading of new prologues.

5 Invoke the startup command file with the following command:

```
$  @SYS$STARTUP:CPS$STARTUP
```

The startup procedure then initializes and starts your queues.

3.5 Testing the Printers and Queues

After the installation is complete, you can test the printers.

Print the following Installation Verification Procedure (IVP) files from SYS$COMMON:[SYSTEST.CPS]:

- CPS$IVP_ANSI.DAT to test printing of ANSI files
- CPS$IVP_POST.DAT to test printing of PostScript files
- CPS$IVP_REGIS.DAT to test printing of ReGIS files
- CPS$IVP_TEK4014.DAT to test printing of Tektronix 4010/4014 files
- CPS$IVP_PCL.DAT to test printing of PCL files

Remember to use the appropriate DATA_TYPE parameter value, indicated in the file name following the underscore, for each of the files. For example, to print CPS$IVP_REGIS.DAT, use the following PRINT command:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=DATA_TYPE=REGIS-
/NOTIFY SYS$COMMON:[SYSTEST.CPS]CPS$IVP_REGIS.DAT
```

Sample commands and output are shown in Appendix C.

4

Postinstallation Procedures

This chapter describes printer-related operations to be performed after the DECprint Printing Services software is installed. These operations are required for sites that are installing the Common Print Symbiont (CPS) for the first time, and for installing new printers to be supported by DECprint Printing Services.

This chapter discusses the following procedures:

- Setting serial printer communication speeds, Section 4.1
- Setting up the DEClaser 2150/2250 printers, Section 4.2
- Setting up the PrintServer printer environment, Section 4.3
- Setting up the system parameters for LN03 Image printers, Section 4.4
- Changing the printer password, Section 4.5.
- Setting the printer name, Section 4.6.
- Setting serial printer timeout value, Section 4.7
- Configuring serial printers for network access, Section 4.8

4.1 Installing Serial Printers

Serial printers

Serial printers require you to set up the communication speed and timeout values for the printer device. (Hardware requirements for installing serial printers are described in Section 2.2.)

4.1.1 Changing the ScriptPrinter Communications Speed

ScriptPrinter

The settings of the two switchpacks, SP1 (left) and SP2 (right), on the back of the printer, determine the communication mode. Table 4–1 lists the expected settings for the software installation of the ScriptPrinter.

Table 4–1 Communication Switch Default Settings

Switch	Setting	Switch	Setting
SP1–1	Off	SP2–1	Off
SP1–2	On	SP2–2	Off
SP1–3	Off	SP2–3	Off
SP1–4	On	SP2–4	Off
SP1–5	Off	SP2–5	Off
SP1–6	Off	SP2–6	Off

These settings correspond to 9600 baud, XON/OFF flow control enabled, 8 bits, and no parity.

Press the top of the switch for On and the bottom of the switch for Off. Refer to the *LN03R ScriptPrinter Operator's Guide* for additional information about setting the communication DIP switches.

Once the ScriptPrinter printer is installed, you can determine its communication setting by pressing the self-test button on the back of the printer and reading the power-up summary sheet.

4.1.2 Baud Rate Limitations

Serial printers

When choosing a baud rate other than the default of 9600 baud, consider the following limitations:

- VMS drivers do not support baud rates of 3600 and 7200 baud.
- DMZ32 serial interfaces, Revision E or lower, require a speed of 4800 baud or less.
- The DECserver devices that can be used with DECprint Printing Services and the recommended communications speed for each are listed in the Software Product Description (SPD).

If you selected an improper speed, the printer will not operate.

For ScriptPrinter printers, you must power-cycle (turn off and then turn on) the printer to enable the new communications settings.

4.1.3 Changing the Default Settings

Serial printers

To run a serial printer at a different communications speed than the default rate of 9600 baud, proceed as follows:

1. Stop the execution queue that drives the printer.

   ```
   $ STOP/QUEUE/NEXT execution-queue-name
   ```

2. For ScriptPrinter printers, turn off the power to the printer.

ScriptPrinter

3. Set the printer to the appropriate baud rate. For a ScriptPrinter printer, use the communication DIP switches on the back of the printer to set the baud rate. Refer to the *ScriptPrinter Operator's Guide* for information about setting the communication DIP switches for your printer.

DEClaser 2150/2250

   Set the communications settings for the DEClaser 2150/2250 printers through the control panel on the front of the printer. The baud feature on the INTERFACE menu allows you to check and set the baud rate. Be sure to set the baud rate for the printer when the printer is in ANSI mode as well as in PostScript mode. Refer to the operator's guide for your printer for instructions.

Serial printers

4. Edit the execution queue definition for the printer configured in the printer startup file SYS$STARTUP:CPS$STARTUP.COM. Parameter **p6** is reserved for communications speed. This parameter is not required for printers on DECserver devices. When multiple hosts access the printer, be sure to make these adjustments on each host system.

ScriptPrinter

5. Turn on power to the printer. Wait for the printer to eject the power-up test page, and then check the test page to ensure that the desired settings are indicated on the test page.

Serial printers

6. Invoke CPS$STARTUP by issuing the following DCL command:

   ```
   $ @SYS$STARTUP:CPS$STARTUP
   ```

4.2 Requirements for Installing DEClaser Printers

DEClaser 2150/2250

You must change the factory default settings on the front control panel of the DEClaser 2150/2250 printer, so that the printer will operate with the DECprint Printing Services software. This section summarizes the front panel settings. Refer to the *DEClaser Printer PostScript Cartridge User's Guide* for help on operating the control panel and checking the PostScript cartridge.

Caution *You must turn the printer off before installing or removing the PostScript cartridge. Failure to do so can damage the cartridge.*

1. Make sure the PostScript cartridge is installed in slot A (the left slot) of your printer.
2. On I/F: Serial Comm menu, make sure the following features are set to the values listed below:
   - The correct baud rate is set
   - Parity is set to no
   - Flow Control is set to XON/XOFF
   - Data bits is set to eight
   - Stop bits is set to one
3. For the MISCELLANEOUS menu, make sure TIMEOUT=INF.
4. Set the printer communications speed with the printer in ANSI mode.

4.3 Requirements for Installing PrintServer Printers

PrintServer

The PrintServer 20, PrintServer 40, and PrintServer 40 Plus printers are network printers. They require the VMS DECnet software to be running on the VMS systems on which the DECprint Printing Services software is running. (The hardware required for installing PrintServer printers is described in Section 2.3.)

4.3.1 Installing a PrintServer Client System

The following procedures allow the DECprint Printing Services software to access PrintServer printers.

4.3.1.1 Including the PrintServer Node Name in CPS$STARTUP

In the procedure for editing CPS$STARTUP, include the printer node name in the execution queue definition, as described in Section 5.4.1. For printers in a VAXcluster configuration, include the scsnode-name of the system on which you are installing DECprint Printing Services. The DECnet database must have an entry for each PrintServer printer accessible from the system.

4.3.1.2 Defining the PrintServer Network Nodes The system manager can provide you with a registered DECnet node name and node address. Run the NCP program and add the printer node to the network database. Use the following commands to define a PrintServer network node:

```
$  MCR NCP
NCP>  SET NODE node-name ADDRESS node-address
NCP>  DEFINE NODE node-name ADDRESS node-address
NCP>  EXIT
$
```

In the NCP commands, you supply the following variables:

node-name	Printer node name
node-address	Printer node address

For example, type the following commands to add the printer ABLE (DECnet address 5.85) to the network database:

```
$  MCR NCP
NCP>  SET NODE ABLE ADDRESS 5.85
NCP>  DEFINE NODE ABLE ADDRESS 5.85
NCP>  EXIT
$
```

4.3.1.3 Deleting the PrintServer Startup File The existing LPS$STARTUP.COM file is no longer used and is not compatible with DECprint Printing Services. Delete this file after you edit CPS$STARTUP.COM. To delete this file, follow these procedures:

1. Stop existing print queues with the STOP/QUEUE/RESET command.
2. Delete existing PrintServer print queues.
3. Add new print queues to CPS$STARTUP.COM for PrintServer printers.
4. If you have any customized definitions in the LPS$STARTUP.COM file, copy the changes into SYS$STARTUP:CPS$STARTUP.COM.
5. Edit SYS$MANAGER:SYSTARTUP_V5.COM, removing the reference to SYS$MANAGER:LPS$STARTUP.COM.

6 Delete LPS$STARTUP.COM. You can delete this and other files that are no longer needed for PrintServer printing using the standard command file CPS$DELETE_LPS_CLIENT.COM. Refer to Section D.3 for more information.

4.4 Installing the LN03 Image Printer

LN03 Image Printer

To print with the LN03 Image printer, you must install the LN03 Image Support software before you start the DECprint Printing Services print queues. (The hardware required for installing and running an LN03 Image printer is described in Section 2.4.)

You must also adjust system parameters before running DECprint Printing Services to support LN03 Image printers, as described in this section. If the SYSGEN parameter values are insufficient, the CPS$STARTUP.COM file does not start the print queue and returns an error message that explains which SYSGEN parameter is too small and what the recommended value is.

The LN03 Image printer requires that the following SYSGEN parameters be set to at least the minimum values listed in Table 4–2.

Table 4–2 LN03 Image Printer SYSGEN Values

SYSGEN Parameter	Minimum Value
PROCSECTCNT	64
WSMAX	10000
VIRTUALPAGECNT	25000
NPAGEDYN	500000
NPAGEVIR	2000000

To check the values, enter the following commands:

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

Supply a parameter name for *parameter*.

If you need to change a SYSGEN value, Digital suggests that you modify SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT and then use the AUTOGEN command procedure to change the values.

For example, to change the WSMAX parameter, perform the following steps:

1. Edit SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT and add the following:

   ```
   MIN_WSMAX=10000
   ```

2. Issue the following AUTOGEN commands to install the new WSMAX parameter on the system when you reboot the system:

   ```
   $  @SYS$UPDATE:AUTOGEN SAVPARAMS GENPARAMS
   $  @SYS$UPDATE:AUTOGEN SETPARAMS REBOOT
   ```

Refer to the *Guide to VAX/VMS Software Installation* for more information on the AUTOGEN command procedure.

4.5 Changing the Printer Password

Serial printers only

Digital's PostScript printers have passwords to restrict certain capabilities. You can change the password for your printer from the default value. Be aware that after the password has been changed, some print jobs require an extra 30 seconds to print.

You specify the printer password in a file that you send to the printer in a print job. The standard files you can use to specify the printer password are:

- LPS$SET_PRINTER_NAME.PS, used for changing the printer name (see Section 4.6)
- LPS$SET_TIMEOUT.PS, used for changing the printer timeout value (see Section 4.7)

The default password for ScriptPrinter printers is (LN03R), with the parentheses required. The default password for DEClaser printers is 0, with no parentheses.

4.6 Setting the Printer Name

Serial printers

In some cases, system messages reference a printer name. You can provide your printer with a unique name.

PrintServers only

For PrintServer printers, the printer name is set through the server management software (refer to the *Management Guide: VAX PrintServer Supporting Host* for instructions).

Serial printers only

For serial printers, the printer name is stored in nonvolatile memory, to be inserted into these error messages.

To set the printer name, edit a copy of the file LPS$SET_PRINTER_NAME.PS found in SYS$MANAGER to include the desired name and password. Select a printer name of 31 characters or less.

Then submit the file for printing as a PostScript job:

```
$ PRINT/QUEUE=queue-name-
/PARAMETER=(DATA_TYPE=POSTSCRIPT) LPS$SET_PRINTER_NAME.PS
```

Without the printer name set, a message contains the default printer name for *printer-type* in the following message. The default printer name is either LN03R or DEClaser.

```
%CPS-I-TRAYSUBST, Output will be delivered to the only tray on
printer-type
```

With the printer name set, the message contains the name you selected for your printer (''David's printer'', for example) and reads:

```
%CPS-I-TRAYSUBST, Output will be delivered to the only tray on
David's printer
```

Edit and submit a copy of LPS$SET_PRINTER_NAME.PS for each printer that requires a unique name.

4.7 Setting the Printer Timeout

PrintServer

For PrintServer printers, the timeout value is set through the server management software (refer to *Management Guide: VAX PrintServer Supporting Host*).

DEClaser

For DEClaser printers, the timeout value is set by the front panel controls, as documented in the operator's guide for your printer.

Serial printers

The printer aborts a print job if it does not receive data for a period of 40 seconds. Digital recommends that you change the timeout value to zero (0), which means no timeout.

This value may be changed with the **settimeouts** PostScript operator. The standard file SYS$COMMON:[SYSMGR]LPS$SET_TIMEOUT.PS can be used to change the timeout value to 0. Print the file using the DATA_TYPE=POSTSCRIPT parameter to change the timeout value to 0, preventing timeout conditions from the printer.

To submit the file for printing as a PostScript job, use the following command:

```
$ PRINT/QUEUE=queue-name/PARAMETER=(DATA_TYPE=POSTSCRIPT) LPS$SET_TIMEOUT.PS
```

When the print job is processed, a page is printed to indicate that the timeout was successfully changed.

Print the file on each printer to be supported by DECprint Printing Services software.

4.8 Making DECserver Connections for Serial Printers

Serial printers

Multiple systems on the same Ethernet can access the same serial printer if the following prerequisites are met:

- The printer is connected to a DECserver device.
- Every host system using the printer is running DECprint Printing Services software. Failure can occur if the printers are accessed by any means other than through DECprint Printing Services software.

Implementation of shared printer access has the following implications:

- There is no centralized accounting for the printer. Each system maintains separate accounting information for the printing performed by that system.
- Multiple systems running DECprint Printing Services software contend for the same printer.
- There is no centralized print queue for the printer, which means:
  - The SHOW QUEUE command does not display the queues for network printers.
  - The system does not provide print job scheduling or load-balancing among printers.

4.8.1 DECserver Connections

The serial PostScript printers can be configured as network printers through a DECserver connection to the Ethernet. For this configuration, you must make the following changes to the system startup procedure:

- Set the necessary DECserver port and server characteristics for the printer.

Note *DECprint Printing Services supplies a sample command file for this purpose. This command file sets the characteristics for a DECserver with the Terminal Server Manager (TSM) software, and records data in the TSM database. (TSM is a software product available separately from Digital.)*

The command file is:

```
SYS$COMMON:[SYSHLP.EXAMPLES.CPS]CPS$CONFIG-PRINTER-PORT.COM
```

This command file provides examples of characteristics for DECserver 100, DECserver 200, and DECserver 500 devices.

- Make the necessary changes to SYS$MANAGER:LTLOAD.COM. This command procedure starts the Local Area Transport (LAT) protocol and configures applications devices for remote printers.

4.8.2 DECserver Port Characteristics

Table 4–3 lists the DECserver port characteristics required for dedicated printing.

Table 4–3 Printer-Required DECserver Port Characteristics

Characteristic	DECserver Port
ACCESS	REMOTE
AUTOBAUD	DISABLED
AUTOCONNECT	DISABLED
AUTOPROMPT	DISABLED
BREAK	DISABLED
BROADCAST	DISABLED
FLOW CONTROL	XON
INPUT FLOW CONTROL[1]	ENABLED
OUTPUT FLOW CONTROL[1]	ENABLED
INACTIVITY LOGOUT	DISABLED
LOSS NOTIFICATION	DISABLED
MESSAGE CODES	DISABLED
QUEUING	ENABLED
VERIFICATION	DISABLED

[1]Characteristic not supported by the DECserver 500 server.

Note *On many versions of DECserver devices, QUEUING is not a port characteristic, but is a server characteristic whose default is ENABLED.*

Table 4–4 lists DECserver port characteristics that must match the DIP switch settings on the back of your printer.

Table 4–4 DECserver Port Characteristics

Character size	8
Parity	None
Input speed	9600
Output speed	9600

Also, check the queue limit, which must be 0, and the service groups described in Section 4.8.4.

To change DECserver terminal server and port characteristics, you need privileged status. Once you have privileged status, use the DEFINE PORT and SET PORT commands.

The DEFINE command changes the port's characteristics in the server's permanent database. These changes do not take effect until the next login for the port. SET commands take effect immediately, but only alter the port's characteristics for the current session.

For example, to change the INPUT SPEED and OUTPUT SPEED values on PORT_6 to 19200 baud (on a DECserver 200), issue the following commands from the console server manager:

```
LOCAL>  SET PRIVILEGED
PASSWORD>  password

LOCAL>  SET PORT 6 SPEED 19200
LOCAL>  DEFINE PORT 6 SPEED 19200
```

- For a detailed description of DECserver 100 commands and how to change them, refer to the *DECserver 100 Terminal Server Operator's Guide*.
- For DECserver 200 terminal server commands, refer to the *DECserver 200 Management Guide*.
- For DECserver 500 terminal server commands, refer to the *DECserver 500 Management Guide* for additional required DEFINE commands.

4.8.3 Editing the LAT Protocol Startup and Configuration File

The SYS$MANAGER:LTLOAD.COM file defines host node service characteristics. Before you start the print queues, make sure the LAT driver is running and ports are available.

Note *Commands referenced in this section are LATCP commands. For more information on LATCP commands, refer to the* VMS LAT Control Program (LATCP) Manual.

Edit LTLOAD.COM and add the following command to create an applications port on the host node (service node) that will support your printer:

```
CREATE PORT LTAd:/NOLOG/APPLICATION
```

In this command format, you supply the number of the applications port for *d*, which must be a unique number from 1–9999.

Note *LTA devices are not always dedicated to printers; they may be shared with other devices. Connections to the LTA device from the other devices are established dynamically among the lowest available ports. If you assign a higher port number to the printer, you can help secure the port for the printer and prevent interference from connections to other devices.*

In LTLOAD.COM, add the following command to associate the applications port with a remote port on a server:

```
SET PORT LTAd:/NODE=server_name/PORT=port_n_name/QUEUE/APPLICATION
```

In the command format, you supply the following values:

LTAd:	Name of the applications port
server_name	Name assigned to the DECserver device
port_n_name	DECserver port name

The following example associates applications port LTA9000: with the port named PORT_7 on a remote DECserver 200 named LN03RDS:

```
SET PORT LTA9000:/NODE=LN03RDS/PORT=PORT_7/QUEUE/APPLICATION
```

As an alternative, you can define the LAT connection for the printer in the CPS$STARTUP.COM file. You may prefer this method of definition if the DECserver is dedicated to printing services, since doing so makes it easier to solve problems with this configuration. However, if the DECserver also supports devices

other than printers, you may prefer to define the port in the LAT startup file.

4.8.4 LAT Groups

To make a successful LAT connection, the following lists of groups must have at least one LAT group in common:

- On the DECserver port, authorized groups and current groups
- On the service node, enabled groups

If you did not set up these groups correctly, you receive the following error message when a print job is submitted:

```
%CPS-E-LRJACCESSDENIED, Access denied
```

You can use LATCP commands to include the necessary LAT group designations. For additional information, refer to the *VMS LAT Control Program (LATCP) Manual*.

5

Initializing Print Queues

This chapter describes the procedures for creating, starting, and modifying print queues, as follows:

- Types of print queues, Section 5.1
- Starting the queue manager, Section 5.2
- Creating CPS$STARTUP.COM, Section 5.3
- Setting up execution queues, Section 5.4
- Setting up generic queues, Section 5.5
- Changing default queue parameters, Section 5.6
- Changing default queue qualifiers, Section 5.7

Note *The information in this chapter is necessary for completing the installation of the DECprint Printing Services software and for managing the resulting printing system. Therefore, the information is included in both the* DECprint Printing Services Software Installation Guide *and the* DECprint Printing Services System Manager's Guide.

5.1 Types of Print Queues

A print queue can be either an execution queue or a generic queue.

Execution queues schedule jobs for processing by the symbiont and deliver the print files to an output device. An execution queue is associated with a particular device.

Generic queues are not associated with a specific device. Rather, they point to the execution queues. Generic queues can be associated with more than one execution queue and can distribute print jobs among queues, or they can be used to associate specific DECprint Printing Services functions with a print job.

You can set default PRINT qualifier and parameter values for execution and generic print queues in the CPS$STARTUP.COM file. Define default queue qualifiers as described in Section 5.7. Define default queue parameters as described in Section 5.6.

5.2 Starting the System Queue Manager

The system job queue manager must be started before you can use any queue management commands, submit print jobs, or print files.

The START/QUEUE/MANAGER command is generally included in the system startup procedure. It starts the system queue manager that controls submission of the job, print queue startup, and scheduling of print jobs. You need to issue this command only if the command is not in the system startup procedure, or if the queue file becomes corrupted and a new queue file must be created. Check your system startup procedure for the exact command for starting the system queue manager.

5.3 Defining Print Queues

DECprint Printing Services requires every print queue to be defined in CPS$STARTUP.COM. The procedures in this chapter describe how to create and edit the CPS$STARTUP.COM file. For new installations, you must create CPS$STARTUP.COM. For DECprint Printing Services sites adding printers, you need only edit the existing CPS$STARTUP.COM file.

5.3.1 Copying the Printer Startup Command File

If you do not have an existing CPS$STARTUP.COM file, you must copy the template file and edit it to reflect your own queue structure. DECprint Printing Services software provides you with a template for a printer startup file, SYS$STARTUP:CPS$STARTUP.TEMPLATE.

Copy the printer startup template file using the COPY command, as follows:

```
$  COPY SYS$COMMON:[SYS$STARTUP]CPS$STARTUP.TEMPLATE -
SYS$COMMON:[SYS$STARTUP]CPS$STARTUP.COM
```

5.3.2 Editing the Printer Startup File

Edit the CPS$STARTUP.COM file to reflect your own queue structure. Define the following:

1. A logical name for the device control library. Refer to Section 5.3.3.
2. Execution print queues. Refer to Section 5.4.
3. Generic print queues. Refer to Section 5.5.

The printer startup template file contains a sample device control library definition, a sample execution queue definition, and two sample generic queue definitions. Find these sections of the template file and edit the queue definitions to match your print queue structure.

The following sections show portions of text from the CPS$STARTUP.TEMPLATE command file. Text preceded by an exclamation mark (!) to the end of the line denotes a comment, which the startup procedure does not execute.

Follow the examples and instructions provided in CPS$STARTUP.COM, using an editor of your choice to edit the file and define the queue structure for the system. Note that instructions follow the examples in the template file. When you remove comment flags to enable a command in this file, be sure to remove all occurrences of the comment flags ($!) in the command line, including those on the continued command line.

Note *Do not change the order of commands in CPS$STARTUP.COM. The first part of the printer startup command file is necessary to create the proper environment for running DECprint Printing Services software.*

*Do not modify any other CPS$*file-name*.COM files.*

The first part of the startup file includes a call to another file, CPS$REQUIRED.COM, as shown:

```
$ @sys$startup:cps$required
```

CPS$REQUIRED.COM does the following:

- Checks to see if the queue manager is running
- Checks privileges
- Defines the default form CPS$DEFAULT
- Defines the LPS$LAYUP logical name

The next few lines of the CPS$STARTUP.COM file define the string associated with the logical name PSM$ANNOUNCE. After the DEFINE/SYS/EXE command that defines PSM$ANNOUNCE, you can insert one or more commands to define forms.

The *DECprint Printing Services System Manager's Guide* describes the command for defining forms and the features you can set in a form definition.

5.3.3 Defining a Device Control Library Logical Name

The startup procedure defines the DECprint Printing Services device control library logical name. It is necessary to change this part of the CPS$STARTUP.COM file if you use site-specific setup modules that require additional device control library definitions.

Example 5–1 shows the section of the printer startup command file for defining a library logical name. The template shows an example of the library logical name definition for a device control library search list; the example definition is commented out. The example is followed by the standard library logical name definition for DECprint Printing Services software. You can edit the definition to add site-specific device control libraries to the search list, if necessary. (Refer to Section 5.3.3.1.)

Example 5–1 Library Logical Name Definition

```
$!+----------
$! Define your device control library logical name here.  The first
$! "define/system" (commented out) is an example of how to define a
$! search list of device control libraries.  Note that CPS$devctl
$! should always be first in the list.
$!
$! define /system /exec /nolog cps_lib cps$devctl, "ansi/data=ansi", -
$!      "ps/data=post"
$!
$
$ define /system /exec /nolog cps_lib cps$devctl
$
$!-----------
```

5.3.3.1 Defining a Library Search List If you have customized setup modules in your own libraries, you must include a library search list for the device control library definition in the CPS$STARTUP.COM file. Set up a library search order by including site-specific device control libraries after the CPS$DEVCTL library.

Include a command line of the following form to define a device control library search list:

```
$ DEFINE/SYSTEM/EXEC/NOLOG logical-name search-list
```

In the command line, you specify the following information:

logical-name The name you assign to the library search list. Use this logical name in the definition for the execution queue in this same file (see parameter **p3** in Section 5.4).

search-list The list of libraries to be searched. For each library that includes the /DATA_TYPE qualifier, enclose the library name and the qualifier in quotation marks. If you do not use the /DATA_TYPE qualifier, you do not need to enclose the library name in quotation marks. The default data type for a library is PostScript.

Example

The following example defines MY_LIB as the library logical name. The following libraries contain PostScript modules:

- CPS$DEVCTL, the standard device control library
- PS1
- PS2

Another library, ANSI1, contains ANSI setup modules.

The library search order is:

CPS$DEVCTL, PS1, ANSI1, PS2

Always include the printer standard device control library first in the list. For example:

```
$ DEFINE/SYS/EXEC/NOLOG MY_LIB -
CPS$DEVCTL,"PS1/DATA_TYPE=POST","ANSI1/DATA_TYPE=ANSI",PS2
```

Note *You must stop and start all execution queues to use a new logical definition of the device control library. If you change only the contents of a library, it is not necessary to stop and start the queues.*

5.3.3.2 Preserving Custom Device Control Modules

The installation of DECprint Printing Services software creates a new version of the supplied device control library CPS$DEVCTL.TLB in SYS$LIBRARY. If you answered YES to purging in the installation procedure in Section 3.2.2, existing device control libraries have been purged.

Digital recommends that, in order to add device control modules, you create a new library and refer to it in the library search list. This will simplify the process of upgrading your printing software by preserving your site-specific modules.

PrintServer only

When you upgrade existing PrintServer Client software to DECprint Printing Services, the existing device control library (LPS$DEVCTL.TLB) is ignored. Check the existing device control library at this point for custom definitions. You cannot modify device control library modules named LPS$$*name* for use with DECprint Printing Services. Copy any custom device control library definitions to a custom device control library, and add that library definition to the DEFINE command in CPS$STARTUP.COM.

Note *Do not change the standard device control modules in the standard CPS$DEVCTL library, because these changes will be lost when DECprint Printing Services is upgraded.*

5.4 Setting Up Execution Queues

You should create an execution queue for each PostScript printer. To create your own execution queue structure, call CPS$EXECUTION_QUEUE.COM once for each queue, supplying your selections for parameters **p1** to **p8** in the place provided in the CPS$STARTUP.COM file. Table 5–1 shows the parameter values for setting up execution queues.

Table 5–1 Parameter Values for Execution Queues

Parameter	Value
p1 (required)	Name of execution queue.
p2 (required)	Name of device that the execution queue drives. Refer to Section 5.4.1.

(continued on next page)

Table 5–1 (Cont.) Parameter Values for Execution Queues

Parameter	Value
p3 (optional)	Library logical name: the name of the standard device control library or a logical name of a library search list (default is CPS$DEVCTL).
p4 (optional)	Execution queue parameter defaults. Refer to Section 5.6.
p5 (optional)	Value to override or add to the default qualifiers. Refer to Section 5.7.
p6 (optional)	For serial printers, communication speed; default is 9600 baud. For all other printers, this parameter is ignored.
p7 (optional)	Qualifiers for the SET DEVICE command. For example, to set a printer to SPOOLED status, include ''/SPOOLED=(*queue-name, disk-device-name*)''. This parameter is valid for serial printers only.
p8 (optional)	Verify on/off. Enables SET VERIFY for the command procedure. The default setting is NOVERIFY, to save log file space and console log space. If **p8** contains 1, then SET VERIFY is enabled. (Refer to *VMS DCL Dictionary* for more information about SET [NO]VERIFY.)

5.4.1 Specifying the Device Name for Parameter p2

In parameter **p2**, you specify the node name and device name of the printer that the execution queue drives.

The format of the device name depends on the device and whether or not the host system is part of a VAXcluster configuration.

On a system that is not part of a VAXcluster, the device name should be in one of the following forms:

- T*xyn*: for a serial printer on a local serial line
- LTA*n*: for a serial printer on a DECserver port
- LDAn: for an LN03 Image printer
- *node-name*:: for a PrintServer device, where the *node-name* is the DECnet node name of the PrintServer

On a system that is part of a VAXcluster, you must add the scsnode-name of the system to which the device you are specifying is physically attached. The device name should be in one of the following forms:

- *scsnode*::T*xyn:* for a serial printer on a local serial line.
- *scsnode*::LTA*n:* for a serial printer on a DECserver port
- *scsnode*::LDA*n:* for an LN03 Image printer
- *scsnode::node-name::* for a PrintServer device, where the *node-name* is the DECnet node name for the PrintServer.

Note *Using the single colon and double colon conventions in the device specification is important for distinguishing between the name of a physical device (single colon) and a node name (double colon).*

Device Characteristics and Parameter p2

CPS$EXECUTION_QUEUE.COM sets device characteristics for LAT devices and serial communications devices. Parameter **p2** provides the device name for the SET TERMINAL and SET DEVICE commands in this command file. If **p2** is a logical name, the command file translates this name. To prevent translation of logical names, provide an underscore (_) prefix for your device name in **p2**.

5.4.2 Execution Queue Examples

Example 5–2 shows how to use the parameters from Table 5–1 to set up an execution queue for a ScriptPrinter printer, which, by default, prints jobs with two pages on one side of a sheet of paper (NUMBER_UP=2), and uses the form type MYFORM.

Example 5–2 Setting Up a ScriptPrinter Execution Queue

```
$ @SYS$STARTUP:CPS$EXECUTION_QUEUE -
❶   2UP -              ! P1 - Execution queue name
❷   FOO::TTB4: -       ! P2 - Device name
❸   CPS_LIB -          ! P3 - Logical name for your library search list
❹   "NUMBER_UP=2" -    ! P4 - Defines a default queue parameter
❺   "/DEFAULT=(FLAG,FORM=MYFORM,NOFEED)" -
                       ! P5 - Value to override/add to default qualifiers
❻   "" -               ! P6 - Communication speed
❼   "/SPOOL=(2UP,DISK1$:) " -
                       ! P7 - Set device qualifier
❽   ""                 ! P8 - Verify on/off
```

❶ Parameter **p1** is the name of the execution queue 2UP where the print jobs execute.

❷ Parameter **p2**, FOO::TTB4:, specifies the device TTB4 on node FOO that this execution queue drives. (For a printer in a VAXcluster configuration, FOO is the scsnode-name.)

❸ Parameter **p3** provides the value CPS_LIB as the logical name for the library search list. You define the search list and associate it with CPS_LIB elsewhere in the same CPS$STARTUP command file.

❹ Parameter **p4**, "NUMBER_UP=2", is the default parameter value for the execution queue.

❺ Parameter **p5**, "/DEFAULT=(FLAG,FORM=MYFORM,NOFEED)", adds the printing of a flag page before each file and defines the default form for jobs in this execution queue.

❻ Parameter **p6**, "" (null string), does not change the default communication speed of 9600 baud. To change the communication speed to 19200 baud, for example, replace the null string ("") with 19200. (This parameter applies to serial printers only.)

❼ Parameter **p7**, /SPOOL=(2UP,DISK1$:), changes the NOSPOOLED default SET DEVICE characteristic to SPOOLED. This function applies to serial printers only.

❽ Parameter **p8**, the value for SET VERIFY, is unchanged.

Example 5–3 shows how to use the parameters from Table 5–1 to set up an execution queue for a PrintServer 20 printer, which, by default, prints jobs on two sides of a sheet of paper (SIDES=2).

Example 5–3 Setting Up a PrintServer Execution Queue

```
$ @SYS$STARTUP:CPS$EXECUTION_QUEUE -
❶   LPS20$BULL09 -     ! P1 - Execution queue name
❷   BULL09:: -         ! P2 - Device name (PrintServer node name)
❸   CPS_LIB -          ! P3 - Logical name for your library search list
❹   "SIDES=2" -        ! P4 - Defines a default queue parameter
❺   "" -               ! P5 - Value to override/add to default qualifiers
❻   "" -               ! P6 - Communication speed
❼   "" -               ! P7 - Set device qualifier
❽   ""                 ! P8 - Verify on/off
```

❶ Parameter **p1** is the name of the execution queue 2UP where the print jobs execute (LPS20$BULL09).

❷ Parameter **p2**, BULL09:: specifies the printer node name.

❸ Parameter **p3** provides the value CPS_LIB as the logical name for the library search list. You define the search list and associate it with CPS_LIB elsewhere in the same CPS$STARTUP command file.

❹ Default parameter value (SIDES=2)

Parameters **p5** through **p8** are not used.

5.5 Setting Up Generic Queues

To define the generic queue structure, fill in your selections for the parameters listed in Table 5–2 in the place provided in the startup file.

Table 5–2 Parameter Values for Generic Queues

Parameter	Value
p1 (required)	Name of the generic queue
p2 (required)	Names of the execution queues to which the generic queue can send jobs. You must supply at least one execution queue name for each generic queue definition.
p3 (optional)	Generic queue parameter defaults.
p4 (optional)	Value to override or add to the default qualifiers.

(continued on next page)

Table 5–2 (Cont.) Parameter Values for Generic Queues

Parameter	Value
p5 (optional)	Verify on/off; controls DCL command SET VERIFY.
p6	Reserved for Digital.
p7	Reserved for Digital.
p8	Reserved for Digital.

Generic Queue Example

Example 5–4 shows how to use the parameters listed in Table 5–2 to set up a generic queue for ReGIS print jobs. This generic queue feeds print jobs to either of two ScriptPrinter execution queues.

Example 5–4 Setting Up a Generic Queue

```
$ @SYS$STARTUP:CPS$GENERIC_QUEUE -
❶  LN03R_REGIS -             ! P1 - Generic queue name
❷  "LN03R_TTB4,LN03R_TTB7" - ! P2 - Execution queue names
❸  "DATA_TYPE=REGIS"         ! P3 - Default queue parameter
```

❶ Parameter **p1**, LN03R_REGIS, names the generic queue to which you can send your ReGIS print jobs.

❷ Parameter **p2** names two execution queues, LN03R_TTB4 and LN03R_TTB7, to which the generic queue sends ReGIS print jobs for execution.

❸ Parameter **p3**, "DATA_TYPE=REGIS" provides ReGIS as the PRINT/PARAMETERS default data syntax for the generic queue.

Parameters **p4** and **p5** are not used.

5.6 Defining the Default Parameters for a Queue

Any PRINT parameter can be set either from the PRINT command or associated by default with a queue. PRINT parameters are documented in the *DECprint Printing Services User's Guide*.

You can edit the DECprint Printing Services startup file to create default parameters for each queue. Default queue parameters are used when the print job prints on the specified queue, unless the user specifies different parameter values in the PRINT command

line. The parameter values specified in the PRINT command line override the default queue parameters.

For example, you can set up a generic queue for printing ReGIS files for printer TTB4 by adding the following definition to SYS$STARTUP:CPS$STARTUP.COM:

```
@sys$startup:cps$generic-queue -    ! ReGIS queue
      REGIS_TTB4 -                  ! P1 - Generic queue name
      TTB4 -                        ! P2 - /GENERIC = execution queues
      "DATA_TYPE=REGIS"             ! P3 - Default queue parameters
```

During the execution of CPS$STARTUP.COM, CPS$GENERIC_QUEUE.COM defines the systemwide logical name LPS$REGIS_TTB4_PARAMETER with DATA_TYPE=REGIS.

Then execute the printer startup command file:

```
$  @SYS$STARTUP:CPS$STARTUP.COM
```

5.6.1 Syntax for Parameters Associated with a Queue

Parameters specified as default queue parameters in CPS$STARTUP.COM must follow the same rules as parameters entered with the PRINT/PARAMETERS command. However, parameters that contain special characters or delimiters are enclosed in extra double quotation marks. You do not use extra double quotation marks in the queue definition.

For example, in the following PRINT command, you must enclose the FONTS_USED parameter and arguments in double quotation marks:

```
$  PRINT/PARAMETER=(PAGE_ORIENTATION=LANDSCAPE,-
"FONTS_USED=(CGTIMES8-10-12_MCS,CGTRIUM8-10-12_MCS)",NUMBER_UP=2)
```

In the following generic queue definition, however, you should not enclose the FONTS_USED parameter and arguments in additional double quotation marks:

```
@sys$startup:cps$generic_queue -      ! ANSI queue
     ANSI_TTB4 -                      ! P1 - Generic queue name
     TTB4 -                           ! P2 - /GENERIC = execution queues
     "PAGE_ORIENTATION=LANDSCAPE,"+ -
     "FONTS_USED=(CGTIMES8-10-12_MCS,CGTRIUM8-10-12_MCS),NUMBER_UP=2"
                                      ! P3 - Default queue parameters
```

CPS$GENERIC_QUEUE.COM creates the systemwide logical name LPS$ANSI_TTB4_PARAMETER. This logical name has the following default print parameters:

- PAGE_ORIENTATION=LANDSCAPE
- FONTS_USED=(CGTIMES8-10-12_MCS,CGTRIUM8-10-12_MCS)
- NUMBER_UP=2

5.6.2 Syntax Errors in Parameters Associated with a Queue

If you enter a parameter in CPS$STARTUP.COM incorrectly, the jobs will print but that parameter and following parameters are not processed; the previous parameters are unaffected. The printing system generates an error message that is displayed on the user's screen and printed on the job trailer page for every print job sent to the associated queue. Those parameters that are not processed take the standard default settings (see Section 5.6.3).

Example of Syntax Error and Associated Error Message

In the following example, there is an extra ''L'' in the argument to the PAGE_ORIENTATION parameter. Therefore, the printing system ignores the second and third parameters, PAGE_ORIENTATION and SHEET_COUNT. Only the value of DATA_TYPE=TEK4014 is processed by the printing system.

```
@SYS$STARTUP:CPS$TEK$PRINT -          ! Tektronix 4010/4014 queue
    TEK4014_TTB4 -                    ! P1 - Generic queue name
    TTB4 -                            ! P2 - /GENERIC = execution queues
    "DATA_TYPE=TEK4014,PAGE_ORIENTATION=LLANDSCAPE,SHEET_COUNT=5"
                                      ! P3 - Default queued parameters
```

For every print job for this queue, an error message similar to the following is displayed on the user's terminal and printed on the job trailer page in the message section:

```
10-APR-1989 15:21 %LPS-E-PARSYNERR, Syntax error in the /PARAMETERS
qualifier at or near PAGE_O=LLANDSCAPE)
```

5.6.3 Order of Defaulting for Parameters

The default parameters for a generic queue supersede the defaults defined for the execution queue. However, if there is a syntax error in the translation of the generic queue's logical name, the execution queue's logical name is translated and overrides the values set by the generic queue. The symbiont also uses the execution queue default parameters when the print job is submitted directly to the execution queue or to a generic queue that has no logical name associated with it.

Parameters set by the /PARAMETERS qualifier to the PRINT command override any defaults set for the queue. The symbiont selects default values for parameters, from highest to lowest priority, as follows:

1. Parameters specified in the PRINT command.
2. For the DATA_TYPE parameter, tagged files specify the data type.
3. Generic queue defaults specified in the CPS$STARTUP.COM file.
4. Execution queue defaults specified in the CPS$STARTUP.COM file.
5. Standard DECprint Printing Services defaults parameter values:
   - DATA_TYPE=ANSI
   - INPUT_TRAY=printer-specific
   - LAYUP_DEFINITION=no default layup definition file
   - MESSAGES=NOMESSAGES
   - NUMBER_UP=0
   - OUTPUT_TRAY=printer-specific
   - PAGE_LIMIT=no limit
   - PAGE_ORIENTATION=PORTRAIT
   - PAGE_SIZE=(same as SHEET_SIZE)
   - SHEET_COUNT=1
   - SHEET_SIZE=Refer to the *DECprint Printing Services User's Guide* for the defaulting rules.
   - SIDES=printer-specific
   - TAB=NOTAB

Those standard default parameter values that are printer-specific can be set through means other than DECprint Printing Services software. PrintServer printers are affected by server management software; DEClaser printers are controlled through the printer control panel.

5.7 Changing the Default Qualifiers for a Queue

By default, the printer startup command procedure creates print queues with the following qualifiers:

- /SEPARATE=(BURST,TRAILER,NORESET)
- /DEFAULT=(NOFEED)
- /FORM=CPS$DEFAULT

You can redefine the default values associated with these qualifiers in the startup command file, CPS$STARTUP.COM. Include the values you require in parameter **p5** of the execution queue definition (see Example 5–2).

For example, you can define the following default qualifiers:

- /SEPARATE=(FLAG)
- /DEFAULT=(FEED)
- /FORM=MYFORM

To define these default qualifier values, use the following qualifier in CPS$STARTUP.COM at **p5**:

```
/DEFAULT=(FLAG,FEED,FORM=MYFORM)
```

After you edit CPS$STARTUP.COM and exit from the editor, you must stop the print queues. Then start the print queues as described in Section 3.3.

A

Sample Installation Session

Example A–1 shows a sample installation of the VMS DECprint Printing Services Software, Version 4.0.

Example A–1 Sample Installation

```
@sys$update:vmsinstal cps040 kits$:

       VAX/VMS Software Product Installation Procedure V5.3

It is 21-FEB-1991 at 11:24

Enter a question mark (?) at any time for help.

%VMSINSTAL-W-DECNET, Your DECnet network is up and running.

%VMSINSTAL-W-ACTIVE, The following processes are still active:
        Gazelle
        Hyacinth
        Jaguar

* Are you satisfied with the backup of your system disk [YES]?  Y
The following products will be processed:

   CPS V4.0

        Beginning installation of CPS V4.0 at 11:31

%VMSINSTAL-I-RESTORE, Restoring product saveset 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]? Y

%CPS-I-LAYUPDEF, LPS$LayUp is already defined
-CPS-I-LAYUPDEF, This installation will use its value
```

(continued on next page)

Example A–1 (Cont.) Sample Installation

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

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSTEST.CPS].
%CREATE-I-EXISTS, VMI$ROOT:[SYSTEST.CPS] already exists

%VMSINSTAL-I-SYSDIR, This product creates system disk directory
VMI$ROOT:[SYSHLP.EXAMPLES.CPS].
%CREATE-I-EXISTS, VMI$ROOT:[SYSHLP.EXAMPLES.CPS] already exists

%CPS-I-NOQUES, No further questions will be asked
%VMSINSTAL-I-RESTORE, Restoring product saveset B ...
%CPS-I-TRNNOTREP, The ANSI translator in the kit was NOT installed
Software installer:

        Please remember to copy SYS$StartUp:CPS$StartUp.Template to
        SYS$StartUp:CPS$StartUp.Com.  Then edit this file following
        the instructions to create your queues.  Finally execute
        this file to establish and start the queues.  Also remember
        to edit SYS$Manager:SyStartUp_V5.Com to establish your queues
        at system startup time.

        If you use LAT devices, this file should be executed after the
        LAT devices are created.  If you use PrintServers, this file
        should be executed after DECnet is running.  If you use both
        types of printers, both of the above conditions should be
        satisfied before the startup file is executed.

%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target
directories...

%CPS-I-IVP, Beginning IVP...
Job CPS$IVP_POST (queue CPS$IVP_TEST, entry 359) started on
                                                    CPS$IVP_TEST
Job CPS$IVP_ANSI (queue CPS$IVP_TEST, entry 360) started on
                                                    CPS$IVP_TEST
Job CPS$IVP_REGIS (queue CPS$IVP_TEST, entry 361) started on
                                                    CPS$IVP_TEST
Job CPS$IVP_TEK4014 (queue CPS$IVP_TEST, entry 362) started on
                                                    CPS$IVP_TEST
Job CPS$IVP_PCL (queue CPS$IVP_TEST, entry 362) started on
                                                    CPS$IVP_TEST

 IVP successful for VMS DECprint Printing Services Software V4.0
 Installation of CPS V4.0 completed at 12:43

 VMSINSTAL procedure done at 12:44
```

B

Sample Startup Command File

Example B–1 shows the printer startup file template:

Example B–1 Sample Printer Startup Command File

```
$! CPS$Startup.Com is the startup file that is executed to startup CPS.  It is
$! template driven to allow you to fully specify the queue structure yet at the
$! same time allow Digital to update the software without disturbing your
$! customizations.
$!
$! Version:  V4.0
$!
$! The first part of the file is mandatory and MUST be executed FIRST.  The
$! second part is for your customizations.
$
$! Protect against environment running in.
$ set symbol /scope=(nolocal, noglobal)
$
```

(continued on next page)

Example B–1 (Cont.) Sample Printer Startup Command File

```
$ @sys$startup:cps$required
$ if .not. $status then exit
$
$!
$! Modify definition of PSM$ANNOUNCE here. Just remember it will effect
$! all queues on the system.
$!
$! def/sys/exe  psm$announce "DECprint printing services system"
$!+----------
$! Define your device control library logical name here.  The first
$! "define/system" (commented out) is an example of how to define a
$! search list of device control libraries.  Note that CPS$devctl
$! should always be first in the list.
$!
$! define /system /exec /nolog cps_lib cps$devctl, "ansi/data=ansi", -
$!      ps/data=post"
$!
$
$ define /system /exec /nolog cps_lib cps$devctl
$
$!-----------
$
$!+----------
$! If a printer is connected via a DECserver (LAT), you may want to consider
$! defining the application port here instead of in Sys$manager:ltload.com
$! to keep everything in one place.  Here is an example of a port definition:
$!
$! run sys$system:latcp
$! crea port lta1 /application /nolog
$! set port lta1 /node=YOUR_DECSERVER_NAME_HERE /port=port_3 /application -
$! /queue
$!-----------
$
```

(continued on next page)

Example B–1 (Cont.) Sample Printer Startup Command File

```
$!+----------
$! Enter your queue structure below this line
$!----------
$
$! Here is a sample queue structure:  One execution queue on device Tzz0:,
$! and two generic queues (one ANSI, one PostScript).  Modify these
$! commands and add additional ones to reflect your desired queue structure.
$
$ on error then continue
$ @sys$startup:cps$execution_queue -
      cps -                             ! P1 - Execution queue name
      tzz0: -                           ! P2 - Serial Device name or
                                        ! PrintServer node name
      cps_lib -                         ! P3 - Logical name for library(ies)
      ""-                               ! P4 - Default queue parameters
      ""-                               ! P5 - Default queue qualifiers
      ""-                               ! P6 - Communication speed
                                        ! (serial devices only)
      ""-                               ! P7 - Device characteristics
      ""                                ! P8 - Verify on/off
$
$ on error then continue
$ @sys$startup:cps$generic_queue -      ! ANSI queue
        cps_ansi -                      ! P1 - Generic queue name
        cps -                           ! P2 - Execution queue name(s)
        "data=ansi" -                   ! P3 - Default queue parameters
        ""-                             ! p4 - reserved
        ""                              ! P5 - Verify on/off
```

(continued on next page)

Example B–1 (Cont.) Sample Printer Startup Command File

```
$
$ on error then continue
$ @sys$startup:cps$generic_queue -      ! PostScript queue
        cps_ps -                       ! P1 - Generic queue name
        cps -                          ! P2 - Execution queue name(s)
        "data=post" -                  ! P3 - Default queue parameters
        ""-                            ! p4 - reserved
        ""                             ! P5 - Verify on/off
$
$ exit
$! Parameter definition and example for execution and generic queues.
$!
$! CPS$execution_queue.com:
$!
$! P1 is the queue name.
$!
$! P2 is the device name for /On.  For example:
$!     txa0:               ! For a ScriptPrinter on a serial line
$!     lta1:               ! For a ScriptPrinter on a DECserver port
$!     lda1:               ! For the LN03 Image Printer
$!     foo::txa4:          ! Txa4 on node foo - for clusters
$!          iguana::            ! PrintServer node name (must not be
$!                              ! used on a cluster)
$!          foo::iguana::       ! PrintServer node name for clusters
$!
$! P3 is the logical name for the /library qualifier.  If you want to
$!    have a library list to pick up your custom library, you must define
$!    a logical name that defines the libraries.  See cps_lib in this file
$!    for an example.
```

(continued on next page)

Example B–1 (Cont.) Sample Printer Startup Command File

```
$!
$! P4 is used to define the queue defaults for /Parameter.  For example,
$!    a queue might be default to make 2 copies with room to punch holes.
$!    Here is what would be supplied to do make that the queue default:
$!     "sheet_count=2, layup_def=lps$holes"
$!
$! P5 is used to override, or specify other qualifiers to init/que.  Here
$!    are some examples:
$!     /wsquota=10000  ! Needed for the LN03 Image Printer
$!     "/form=my_form /schedule=size"
$!
$! P6 is used to specify the device speed for a serial line.  Note that
$!    it has no effect for LAT devices.  The default is 9600.  If you
$!    have a DMZ32, you should set the speed to 4800.
$!
$! P7 is used to specify other device characteristics.  For example, if
$!    you want the device spooled, you would say:
$!     /spooled=(my_queue, my_disk)
$!
$! P8 is used to set VERIFY on/off; Specify "1" to set VERIFY on.
$!
$! CPS$Generic_queue.com:
$!
$! P1 is the queue name.
$!
$! P2 is list of execution queues for /GENERIC.  For example:
$!     "queue1, queue2"
$!
$! P3 is used to define the queue defaults for /Parameter.  For example,
$!    a queue might be default to make 2 copies with room to punch holes.
$!    Here is what would be supplied to do make that the queue default:
$!     "sheet_count=2, layup_def=lps$holes"
$!
$! P4 is used to override, or specify other qualifiers to init/que.
$!
$! P5 is used to set VERIFY on/off; Specify "1" to set VERIFY on.
```

C

Installation Verification Output

The Installation Verification Procedure (IVP) for the DECprint Printing Services software does not print on paper. However, IVP files are written to SYS$COMMON:[SYSTEST.CPS]. You can print these files on your printer to verify correct queue configuration and printer operation.

Instructions on how to print these files are included with each example in this appendix.

The following figures are copies of the printed output files from the Installation Verification Procedure (IVP). Check your printer output carefully against these copies. The flag and trailer pages are not included here, because they vary according to the user specifications and system performing the printing. Resolve any differences in the data output with your Digital Customer Services representative.

Figure C–1 is a reproduction of the ANSI data syntax test file. Print this file using the following command:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=(DATA_TYPE=ANSI)/NOTIFY -
SYS$COMMON:[SYSTEST.CPS]CPS$IVP_ANSI.DAT
```

Figure C–1 Printed IVP Output—ANSI Data Page

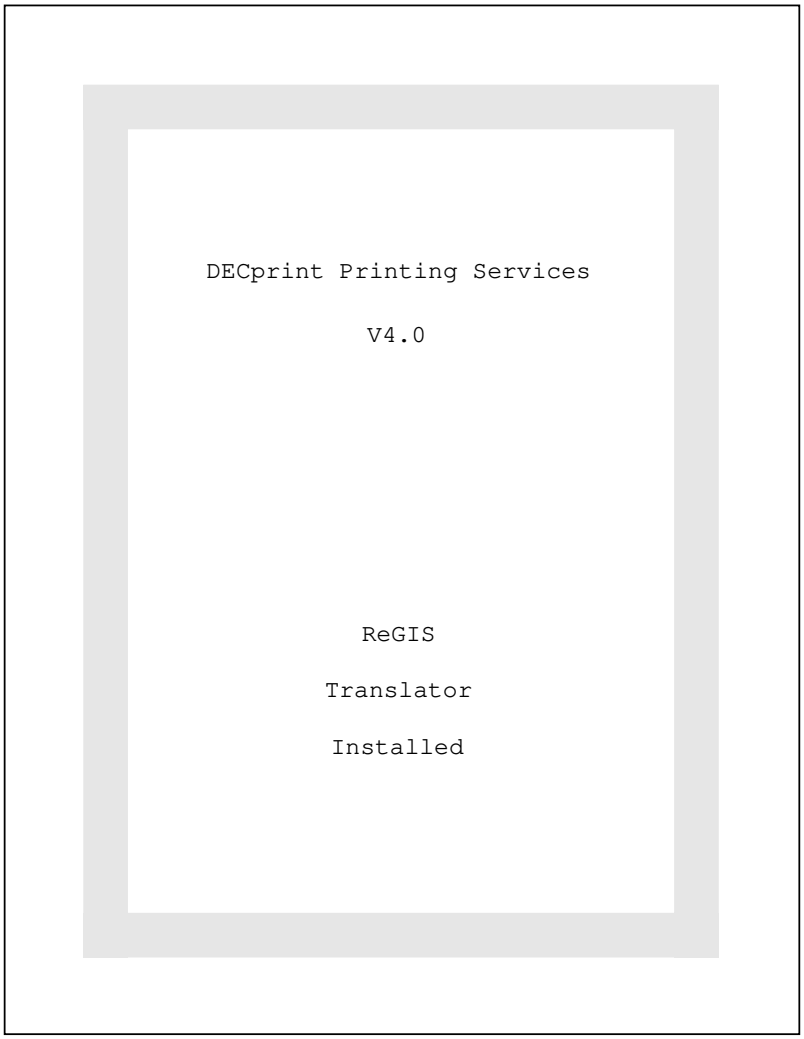
```
                    DECprint Printing Services Software

                                CPS V4.0


The following files were provided as a result of this installation:


File name:                          Directory
------------------------------------------------------------------------
CPS$SMB.EXE                         SYS$SYSTEM
CPS$MSG.EXE                         SYS$MESSAGE
CPS$DEVCTL.TLB                      SYS$LIBRARY

CPS$EXECUTION_QUEUE.COM             SYS$STARTUP
CPS$GENERIC_QUEUE.COM               SYS$STARTUP
CPS$REQUIRED.COM                    SYS$STARTUP
CPS$STARTUP.TEMPLATE                SYS$STARTUP

TRN$ANSI_PS.EXE                     SYS$SHARE
TRN$DDIF_PS.EXE                     SYS$SHARE
TRN$REGIS_PS.EXE                    SYS$SHARE
TRN$TEK4014_PS.EXE                  SYS$SHARE
TRN$PCL_PS.EXE                      SYS$SHARE

CPS040.RELEASE_NOTES                SYS$HELP

CPS$IVP.COM                         SYS$COMMON:[SYSTEST]
CPS$IVP_ANSI.DAT                    SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_REGIS.DAT                   SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_TEK4014.DAT                 SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_POST.DAT                    SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_PCL.DAT                     SYS$COMMON:[SYSTEST.CPS]

LPS$SINGLEHOLES.LUP                 SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$DOUBLEHOLES.LUP                 SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$HOLES.LUP                       SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$NUP.LUP                         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$STATUSDICT.PS                   SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
COLOR-PRINTER-FULL-PAGE.LUP         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]

CPS$COMMON_PORT_SETTING.COM         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$CONFIG_PRINTER_PORT.COM         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS100-PORT-SETTINGS.COM         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS200-PORT-SETTINGS.COM         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS500-PORT-SETTINGS.COM         SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$GET-DS100-PORT-GROUPS.COM       SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$SET-DS-GROUPS.COM               SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$SET-DS100-GROUPS.COM            SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
PS-PRINTING-ALL-IN-1-COMPAT.SAV     SYS$COMMON:[SYSHLP.EXAMPLES.CPS]*
PS-PRINTING-ALL-IN-1-COMPAT.TXT     SYS$COMMON:[SYSHLP.EXAMPLES.CPS]*
CPS$DELETE-LPS-CLIENT.COM           SYS$COMMON:[SYSUPD]

LPS$SET_TIMEOUT.PS                  SYS$MANAGER
LPS$SET_PRINTER_NAME.PS             SYS$MANAGER

* Optional files for ALL-IN-1 compatibility kit

 The system help library was also modified as a result of this installation.
```

MLO-005405

Figure C–2 is a reproduction of the ReGIS data syntax test file. Print this file using the following command:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=(DATA_TYPE=REGIS)/NOTIFY -
SYS$COMMON:[SYSTEST.CPS]CPS$IVP_REGIS.DAT
```

Figure C–2 Printed IVP Output—ReGIS Data Page

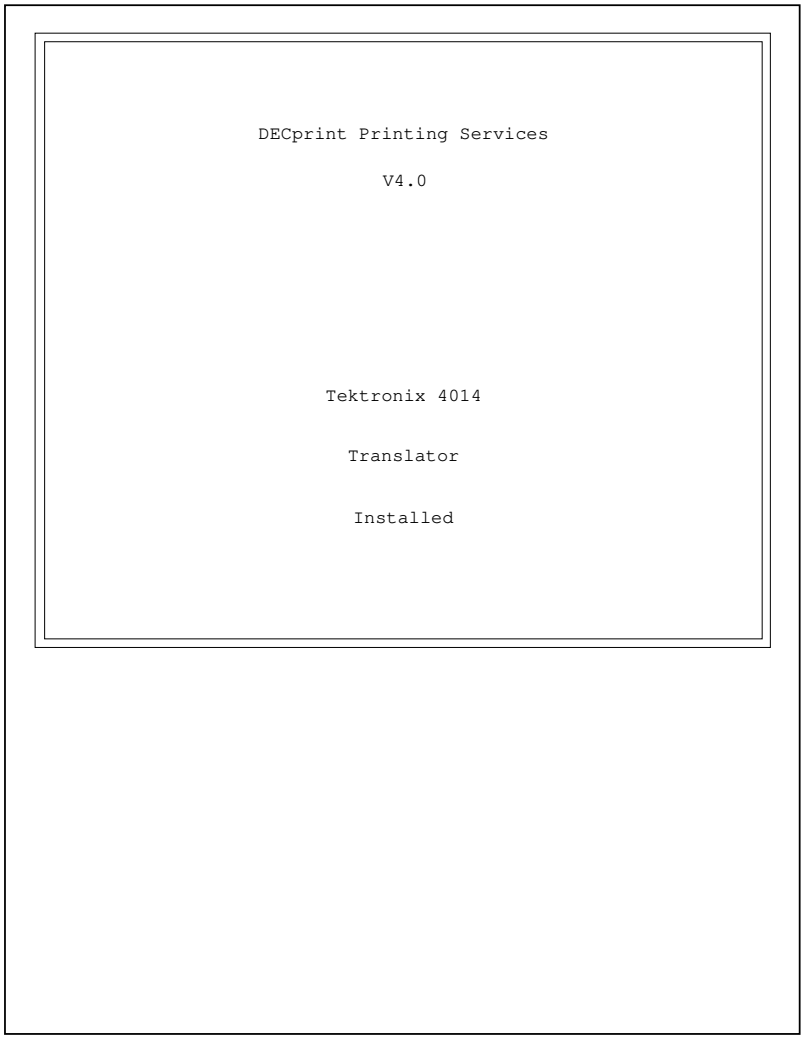


MLO-005406

Figure C–3 is a reproduction of the TEK4014 data syntax test file. Print this file using the following command:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=(DATA_TYPE=TEK4014)/NOTIFY -
SYS$COMMON:[SYSTEST.CPS]CPS$IVP_TEK4014.DAT
```

Figure C–3 Printed IVP Output—TEK4014 Data Page

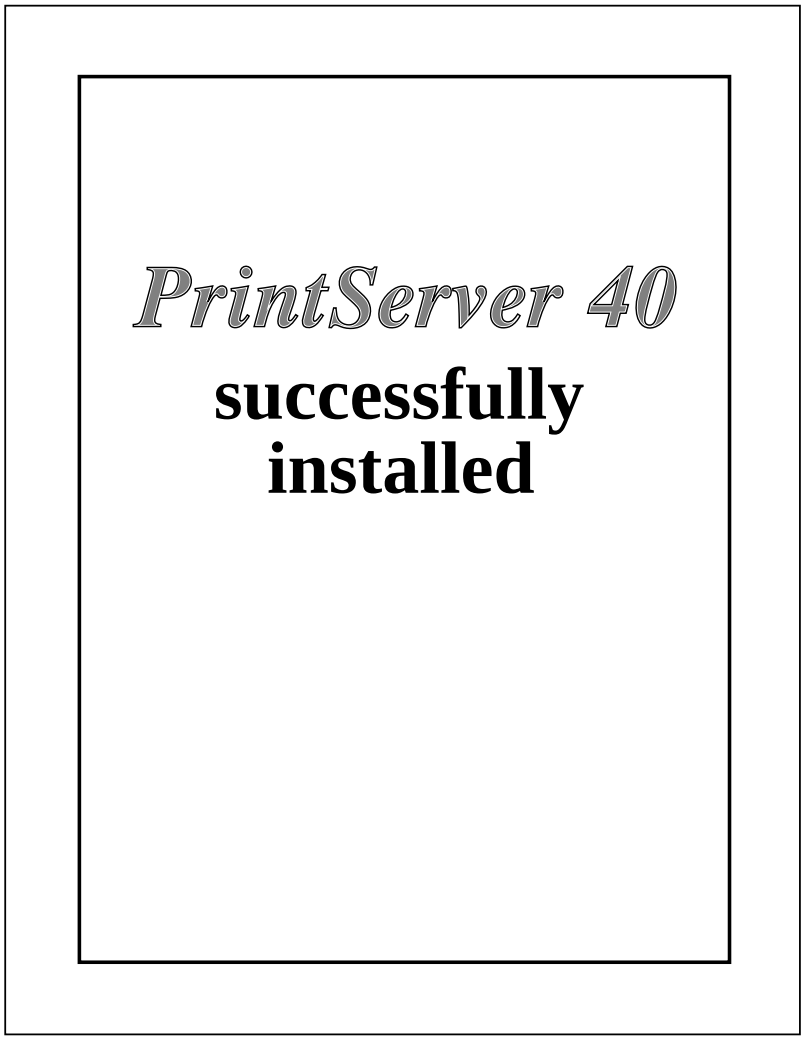


MLO-005407

Figure C–4 shows a PostScript data syntax test file. The content of this page depends on the printer model. Print it as follows:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=(DATA_TYPE=POSTSCRIPT)/NOTIFY -
SYS$COMMON:[SYSTEST.CPS]CPS$IVP_POST.DAT
```

Figure C–4 Printed IVP Output—PostScript

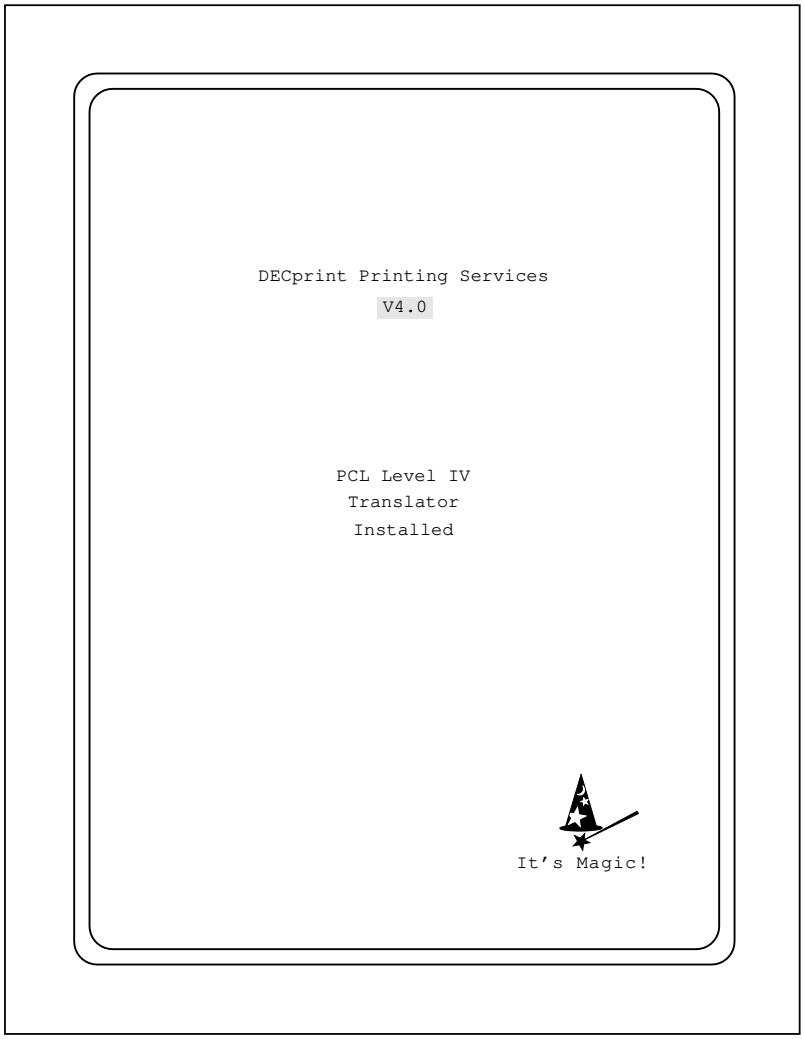


MLO-005408

Figure C–5 is a reproduction of Hewlett-Packard Company's PCL data syntax test file. Print this file using the following command:

```
$  PRINT/QUEUE=queue-name/PARAMETERS=(DATA_TYPE=PCL)/NOTIFY -
SYS$COMMON:[SYSTEST.CPS]CPS$IVP_PCL.DAT
```

Figure C–5 Printed IVP Output—HP PCL



MLO-005588

D

New Files and Libraries

During the installation of the DECprint Printing Services software, new files and libraries are added to the system. This appendix lists the following files:

- New files added during installation, Section D.1
- The new device control library, Section D.2
- The files you must delete when upgrading PrintServer client software, Section D.3

D.1 New Files

For systems with a printing system that is not upgrading from ScriptPrinter Version 2.1, Table D–1 lists the files added to the specified directories during the installation procedure.

Table D–1 New Files

File Name	Directory
CPS$SMB.EXE	SYS$SYSTEM:[SYSEXE]
CPS$MSG.EXE	SYS$MESSAGE:[SYSEXE]
CPS$DEVCTL.TLB	SYS$COMMON:[SYSLIB]
CPS$EXECUTION_QUEUE.COM	SYS$STARTUP
CPS$GENERIC_QUEUE.COM	SYS$STARTUP
CPS$REQUIRED.COM	SYS$STARTUP

(continued on next page)

Table D–1 (Cont.) New Files

File Name	Directory
CPS$STARTUP.TEMPLATE	SYS$STARTUP
TRN$ANSI_PS.EXE	SYS$SHARE
TRN$DDIF_PS.EXE	SYS$SHARE
TRN$REGIS_PS.EXE	SYS$SHARE
TRN$TEK4014_PS.EXE	SYS$SHARE
TRN$PCL_PS.EXE	SYS$SHARE
CPS$IVP.COM	SYS$COMMON:[SYSTEST]
CPS$IVP_ANSI.DAT	SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_REGIS.DAT	SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_TEK4014.DAT	SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_POST.DAT	SYS$COMMON:[SYSTEST.CPS]
CPS$IVP_PCL.DAT	SYS$COMMON:[SYSTEST.CPS]
LPS$SINGLEHOLES.LUP	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$DOUBLEHOLES.LUP	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$HOLES.LUP	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$NUP.LUP	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$COLOR_PRINTER_FULL_ PAGE.LUP	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS040.RELEASE_NOTES	SYS$COMMON:[SYSHLP]
CPS$HELP.HLP	SYS$COMMON:[SYSHLP]
CPS$COMMON_PORT_SETTINGS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$CONFIG_PRINTER_PORT.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS100-PORT-SETTINGS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS200-PORT-SETTINGS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$DS500-PORT-SETTINGS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$GET-DS100-PORT-GROUPS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$SET-DS-GROUPS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$SET-DS100-GROUPS.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
CPS$SAVE-DS500-PORT.COM	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
LPS$SET_TIMEOUT.PS	SYS$COMMON:[SYSMGR]
LPS$SET_PRINTER_NAME.PS	SYS$COMMON:[SYSMGR]

(continued on next page)

Table D–1 (Cont.) New Files

File Name	Directory
Optional Files for ALL–IN–1 Compatibility Kit	
PS-PRINTING-ALL-IN-1-COMPAT.SAV	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]
PS-PRINTING-ALL-IN-1-COMPAT.TXT	SYS$COMMON:[SYSHLP.EXAMPLES.CPS]

The system help library was also modified as a result of this installation.

D.2 Device Control Library

The device control library supplied in the DECprint Printing Services Software Distribution Kit contains PostScript modules used to control the operation of the PostScript printers. This library (CPS$DEVCTL.TBL) is located in the SYS$COMMON:[SYSLIB] directory, defined as SYS$LIBRARY. The library contains the following modules:

LPS$DECMCSENCODING
LPS$ERRORHANDLER
LPS$FINDFONT_ISOLATIN1_DECMCS_V40
LPS$ISOLATIN1ENCODING
LPS$$CHECKPROLOGUE
LPS$$EXITSERVERLOOP
LPS$$FLUSHPAGES
LPS$$GETSHEETCOUNT
LPS$$LN03_SETCONTEXT
LPS$$LN03_SETINPUTTRAY
LPS$$LN03_SETOUTPUTTRAY
LPS$$LN03Q_INITPSDEVICE
LPS$$LN03Q_LOADSERVER
LPS$$LN03Q_SETPAPERSIZE
LPS$$LN03R_INITPSDEVICE
LPS$$LPS_GETSHEETINFO
LPS$$LPS_JOBJOG
LPS$$LPS_LOADDICT
LPS$$LPS_SETCONTEXT
LPS$$LPS_SETINPUTTRAY
LPS$$LPS_SETOUTPUTTRAY
LPS$$LOADDICT
LPS$$NEWSHEET
LPS$$PRINTERTYPE
LPS$$SETNUMBERUP
LPS$$SETPAGELIMIT

LPS$$SETPAGEORIENTATION
LPS$$SETPAGESIZE
LPS$$SETSHEETCOUNT
LPS$$SETSHEETSIZE
LPS$$SETSIDES
LPS$$SYSTEMPAGES
LPS$$VMSTATUS

D.3 Files for PrintServer Software Upgrade Procedure

PrintServer printers

Table D–2 lists files that were provided as a result of VAX PrintServer Client V3.0 installation. You can delete these files after you install DECprint Printing Services. The following command file is an example file that deletes the files listed in Table D–2:

SYS$UPDATE:CPS$DELETE-CPS-CLIENT.COM

Table D–2 PrintServer Client Files to Delete

File Name	Directory
LPS$SMB.EXE	SYS$SYSTEM
LPS$MSG.EXE	SYS$MESSAGE
LPS$DEVCTL.TLB	SYS$SHARE
LPS$STARTUP.COM	SYS$MANAGER or SYS$STARTUP
TRN$LAYUPDEF_PS.EXE	SYS$SHARE
LPS$FONT_METRICS.TLB	SYS$SHARE
LPSVC030.RELEASE_NOTES	SYS$HELP
LPS$IVP.COM	SYS$SYSROOT:[SYSTEST]
LPS$IVP_ANSI.DAT	SYS$SYSROOT:[SYSTEST.LPSVC]
LPS$IVP_REGIS.DAT	SYS$SYSROOT:[SYSTEST.LPSVC]
LPS$IVP_TEK4014.DAT	SYS$SYSROOT:[SYSTEST.LPSVC]
LPS$IVP_LAYUPDEF.DAT	SYS$SYSROOT:[SYSTEST.LPSVC]

Table D–3 lists files common to PrintServer Client software and DECprint Printing Services software. Do not delete these files.

Table D–3 PrintServer Client Files to Retain

File Name	Directory
TRN$ANSI_PS.EXE	SYS$SHARE
TRN$REGIS_PS.EXE	SYS$SHARE
TRN$TEK4014_PS.EXE	SYS$SHARE
LPS$SINGLEHOLES.LUP	LPS$LAYUP
LPS$DOUBLEHOLES.LUP	LPS$LAYUP
LPS$HOLES.LUP	LPS$LAYUP
LPS$NUP.LUP	LPS$LAYUP

E

System Messages

This chapter describes the DECprint Printing Services messages in the following sections:

- Overview of messages, Section E.1
- Print job messages, Section E.2

E.1 System Message Overview

DECprint Printing Services system messages are classified into two categories, based on their destination. Some messages are sent to the host system operator; others go to the user.

To receive user messages, use the /NOTIFY qualifier with the PRINT command. The messages are sent in response to either your print request or a system condition that affects your print request.

To receive operator messages, you need OPER (operator) privileges and must execute the REPLY/ENABLE=PRINTER command. You then receive the operator messages that apply to your host system.

Note *To ensure that you receive operator messages, make sure OPCOM is running. Start OPCOM by issuing the command:*

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

Start OPCOM before executing the REPLY/ENABLE=PRINTER command.

E.1.1 Message Format

DECprint Printing Services system messages have one of the following formats:

%fac-s-ident, text
-fac-s-ident, text

Code	Meaning
fac	The facility code; which should be CPS or LPS
%	The prefix to all primary messages
–	The prefix to all continuation messages
s	The severity level of the message
ident	An abbreviation of the message text
text	The expanded text of the message

E.1.2 Severity Level

The severity levels of DECprint Printing Services system messages are as follows:

Code	Meaning
S	Success — successful completion of the request.
I	Informational — may or may not require user action.
W	Warning — request may not have completed and may require user action.
E	Error — system encountered an error that may be recoverable.
F	Fatal — system encountered a fatal error and cannot continue processing this request.

E.2 Message Descriptions

The following message descriptions are alphabetized by the *ident* portion of the message code. The message prefix, facility designation, and severity code are not shown. If you receive a message with a facility designation other than CPS or LPS, refer to the *VAX/VMS System Messages and Recovery Procedures Reference Manual* for the message description.

If the **User Action** calls for submitting an SPR (Software Performance Report), refer to the *Introduction to VMS System Management* for instructions.

ACTIVE, The following processes are still active:

Explanation: VMSINSTAL has detected other processes running on the system; they are displayed on lines following this message. The existence of other processes may interfere with VMSINSTAL in unexpected ways.

User Action: VMSINSTAL allows you to exit in order to log out the processes, if necessary.

BADSPEC, File spec AI1TXT cannot be parsed

Explanation: The ALL–IN–1 compatibility kit requires a file PS-PRINTING-ALL-IN-1-COMPAT.TXT, which does not exist.

User Action: After the VMSINSTAL procedure is finished, provide adequate disk space to restore all product save sets (at least 4500 disk blocks). Restart the installation procedure.

CLEANING_UP, Restoring system and network, DO NOT USE CTRL/Y.

Explanation: System parameters that were changed up to the point of failure are being restored to their original values.

User Action: Do not use Ctrl/Y; it may prevent the complete restoration of system parameters.

DECNET, Your DECnet network is up and running.

Explanation: The DECnet network software is up and running on the system.

User Action: No action is required.

EXISTS, *directory* already exists

Explanation: The VMSINSTAL procedure creates appropriate disk directories for DECprint Printing Services software restored from the distribution media. This message indicates that the appropriate disk directories are already defined.

User Action: No action is required.

INSNPAGEVIR, NPAGEVIR *current-npagevir* insufficient, need at least *required-npagevir*

Explanation: The value *current-npagevir* is insufficient for the operation of the LN03 Image printer.

User Action: Using SYSGEN, change the NPAGEVIR value to at least the value recommended in *required-npagevir* and reboot the system.

INSPAGEDYN, PAGEDYN *current-pagedyn* insufficient, need at least *required-pagedyn*

Explanation: The value *current-pagedyn* is insufficient for the operation of the LN03 Image printer.

User Action: Using SYSGEN, change the PAGEDYN value to at least the value recommended in *required-pagedyn* and reboot the system.

INSPROCSECTCNT, PROCSECTCNT *current-procsectcnt* insufficient, need at least *required-procsectcnt*

Explanation: The value *current-procsectcnt* is insufficient for the operation of the LN03 Image printer.

User Action: Using SYSGEN, change the PROCSECTCNT value to the value recommended in *required-procsectcnt* and reboot the system.

INSVIRTUALPAGECNT, VIRTUALPAGECNT *current-virtualpagecnt* insufficient, need at least *required-virtualpagecnt*

Explanation: The value *current-virtualpagecnt* is insufficient for the operation of the LN03 Image printer.

User Action: Using SYSGEN, change the VIRTUALPAGECNT value to the value recommended in *required-virtualpagecnt* and reboot the system.

INSWSMAX, WSMAX *current-wsmax* insufficient, need at least *required-wsmax*

Explanation: The value *current-wsmax* is insufficient for operation of the LN03 Image printer.

User Action: Using SYSGEN, change the WSMAX value to the value recommended in *required-wsmax* and reboot the system.

INVRES, Invalid response, please type YES or NO.

Explanation: The only responses accepted for this prompt are YES and NO. A response other than one of these was entered.

User Action: Enter YES or NO.

IVLOGNAM, invalid logical name

Explanation: The command line to start VMSINSTAL contained an invalid logical name for *device-id*.

User Action: This message terminates the VMSINSTAL procedure. Check the logical that you specified in the VMSINSTAL command line and be sure to use the appropriate *device-id*.

IVP, Beginning IVP . . .

Explanation: VMSINSTAL is running the Installation Verification Procedure to check the software installation.

User Action: No action is required.

LAYUPDEF, This installation will use its value

Explanation: The installation uses the existing logical name for LPS$LAYUP.

User Action: None; informational message only.

MOVEFILES, Files will now be moved to their target directories . . .

Explanation: The VMSINSTAL procedure is copying distributed software to the appropriate disk directories.

User Action: No action is required.

NOFILE, New file *file-name* does not exist

Explanation: The distributed *file-name* has not been restored to the appropriate disk directory.

User Action: As a result of a previous error, the required files cannot be copied to the disk directory. Exit VMSINSTAL and correct the cause of the problem. Run VMSINSTAL again to obtain the missing files.

NO_QUEMAN, This product requires the queue management facility to install.

Explanation: The queue manager could not be found. The installation procedure is aborted.

User Action: Start the queue manager. For information refer to *VAX/VMS System Manager's Reference Manual* or *Guide to Maintaining a VMS System*.

NOQUEMGR, IVP will NOT be run. Installation continuing . . .

Explanation: The queue manager is not running on your system. The installation will continue, but the Installation Verification Procedure cannot run.

User Action: You can run VMSINSTAL again to test the IVP, or you can submit the files for printing after the software is installed (refer to Section 3.5).

NOQUES, No further questions will be asked

Explanation: The VMSINSTAL procedure will be completed from this point without requiring input from your terminal.

User Action: No action is required.

NOSAVESET, Saveset *n* cannot be restored.

Explanation: The saveset indicated by *n* cannot be restored to disk.

User Action: This message is accompanied by other messages that explain the cause of this problem. If disk space is insufficient, the VMSINSTAL procedure will not be completed successfully. Ensure that at least 7500 disk blocks are available for installing this product and start the VMSINSTAL procedure again.

NO_SPACE, This product requires *decimal-number* blocks of disk space to install.

Explanation: There are not enough free disk blocks to install this software. The installation procedure is aborted.

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

NOTSYSTEM, You are not logged in to the SYSTEM account.

Explanation: You are running VMSINSTAL from a process that does not have SYSTEM privileges.

User Action: The lack of SYSTEM privileges may cause problems with file ownership during the installation process. You should exit VMSINSTAL and log in to a SYSTEM account before attempting to run VMSINSTAL.

OPENOUT, error opening *file-spec* as output

Explanation: Files cannot be restored from the distribution media to the disk.

User Action: Previous messages were displayed to indicate a problem with the VMSINSTAL procedure. After the VMSINSTAL procedure exits, check the disk space quota to ensure that at least 7500 disk blocks are available for restoring the distributed software. Run VMSINSTAL again when the prerequisites are fulfilled.

RELMOVED, The product's release notes have been successfully moved to SYS$HELP.

Explanation: The release notes for this software have been moved into SYS$HELP.

User Action: No action is required.

RESTORE, Restoring product saveset *n*

Explanation: VMSINSTAL has begun restoring the software from the distribution media.

User Action: No action is required.

SYSDIR, This product creates system disk directory *directory*.

Explanation: The VMSINSTAL procedure has created the specified directory for restoring the software.

User Action: No action is required.

UNEXPECTED, Installation terminated due to unexpected event.

Explanation: The VMSINSTAL procedure is terminated because of problems. The cause of this message is probably indicated in previous messages from the VMSINSTAL procedure.

User Action: Determine the cause of the error and correct the problem. Ensure that enough disk space is available for restoring the software. Then run VMSINSTAL again to install the software.

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