AA–LB63D–TE

PATHWORKS for VMS

Server Installation Guide

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About This Guide

Purpose

The purpose of this manual is to help the system administrator install PATHWORKS for VMS server software after the network transport software is installed.

Audience

This manual is intended for the person who administers PATHWORKS for VMS. The manual assumes that the person can:

- Set up personal computers that run MS-DOS applications
- Use the VMS Operating System, including:
  - Digital Command Language (DCL)
  - EDIT/EDT editor.
  - AUTOGEN to configure and tune a VMS system
  - VMSINSTAL to install other layered products
- Set up a VMS system to run the DECnet transport
- Set up a VMS system to run UCX (ULTRIX Connection Software) if the configuration includes the optional TCP/IP transport

Organization

The following table can help you find information in this manual.

Chapter 1	Describes how to prepare for the installation of PATHWORKS for VMS.
Chapter 2	Describes how to install PATHWORKS for VMS using the VMSINSTAL utility.
Chapter 3	Describes the tasks you need to perform after installation. You need to perform these tasks before you can use PATHWORKS for VMS.
Chapter 4	Describes what you need to do to configure other servers in the VAXcluster system.
Appendix A	Provides a listing of the files and logical names created by the installation.
Appendix B	Provides a sample installation procedure.
Appendix C	Explains how to set up security for servers using the DECnet transport.
Appendix D	Provides an alternate method for copying release notes before installation.
Appendix E	Explains how to use the PCSA$CONFIG.COM command procedure.
Appendix F	Provides a worksheet and instructions for manually calculating system parameters.

Related Documents

The system administrator should have the following documents available:

- *Overview* for an explanation of terms and concepts
- *Server Release Notes* for important information about changes in the installation procedure

Note Server Release Notes *that provide the most up-to-date information on PATHWORKS for VMS are available on line. For information on how to read and print out these release notes, see Chapter 2.*

To extract the release notes from the kit prior to installing this product, see Appendix D.

For more information on topics mentioned in this manual, see:

Topic	Reference
AUTOGEN command procedure	*Guide to Setting Up a VMS System*
Providing file and disk services	*Server Administrator's Guide*
Security for virtual disk services	*Server Administrator's Guide*
Security for file services	*VMS System Manager's Manual* or *Guide to VMS System Security*
Tuning the server for better performance	*Server Administrator's Guide*
Using the Authorize utility	VMS documentation on system management and operations

Conventions

This manual uses the following conventions:

Convention	Meaning
Ctrl/*x*	While you hold down the Ctrl key, press another key or a pointing device button.
Esc *x*	Press the Esc key, release it, and then press another key or a pointing device button.
Return	Press the key that executes commands or terminates a sequence. This key is labeled Return, Enter, or ↵, depending on your keyboard.
''enter''	Type all required text, spaces, and punctuation marks; then press Return, Enter, or ↵, depending on your keyboard.
UPPERCASE	In VMS, DOS, and OS/2 syntax, uppercase letters indicate commands and qualifiers. You can enter commands and qualifiers in any combination of uppercase or lowercase, unless otherwise noted.
lowercase	Lowercase letters in VMS, DOS, and OS/2 syntax indicate parameters. You must substitute a word or value, unless the parameter is optional.

Convention	Meaning
teal blue type	In examples of dialog between you and the system, teal blue type indicates information that you enter. In online (Bookreader) files, this information appears in boldface.
boldface	Boldface type indicates a new term that appears in the glossary. In online (Bookreader) files, boldface indicates information you enter.
two-line commands	In VMS commands, a hyphen (-) at the end of a command line indicates that the command continues to the next line. If you type the hyphen and press Return, the system displays the _$ prompt at the beginning of the next line. Continue entering the command. If you do not type the hyphen, VMS automatically wraps text to the next line.
numbers	All numbers shown in this manual are in decimal form, unless otherwise noted.
. . .	A vertical ellipsis in an example indicates that not all the data is shown.
NOTE	Notes provide information of special importance.
CAUTION	Cautions provide information to prevent damage to equipment or software.
WARNING	Warnings provide information to prevent personal injury.

Terminology

The terms ‘‘personal computer’’ (PC) and ‘‘PC workstation’’ refer to standalone systems. The term ‘‘client’’ refers to a PC, connected to the network by PATHWORKS software, that can access resources on a server. A server is a system that offers services to clients.

The term ‘‘PATHWORKS’’ refers to PATHWORKS software. PATHWORKS is a trademark of Digital Equipment Corporation.

1

Preparing to Install PATHWORKS for VMS

This chapter discusses the requirements and preparations necessary for installing PATHWORKS for VMS.

Allow 15 to 30 minutes to complete the instructions in this chapter.

Table 1–1 is a checklist of the steps you need to follow to prepare for the installation procedure.

Table 1–1 Checklist for Preparing to Install

- ☐ Complete the following preinstallation tasks:
  - ☐ Check your hardware requirements.
  - ☐ Check your software requirements.
  - ☐ Log into the SYSTEM account.
  - ☐ Backup your system disk.
  - ☐ Check the device names for reserved names.
  - ☐ Check the system disk to ensure that sufficient disk space is available.
  - ☐ Disable disk quotas for SYSTEM accounts.
- ☐ For DECnet, complete the following preinstallation tasks.

  DECnet and TCP/IP for file and print services:
  - ☐ Start DECnet.
  - ☐ Define DECnet logical links.
  - ☐ Define the DECnet executor pipeline quota.
  - ☐ Enable remote boot services.
  - ☐ Set up local DECnet *(required to support only the TCP/IP transport).*
- ☐ For the TCP/IP transport, start UCX.

- ☐ When you are installing for the first time:
  - ☐ Decide on what disks you want to install the file and disk server software.

- ☐ When you are upgrading an existing installation:
  - ☐ Notify PATHWORKS users to log off the servers.
  - ☐ Check to make sure all PATHWORKS users have logged off.
  - ☐ Disconnect remaining PATHWORKS service connections.
  - ☐ Stop the file and disk servers.
  - ☐ Disable the automatic startup of the file and disk servers (if you have edited the SYSTARTUP_V5.COM procedure).

What You Need

This section describes the hardware and software requirements of PATHWORKS for VMS.

Prerequisite Hardware

Be sure that the network, including cables, clients, servers, and other hardware, is connected.

Prerequisite Software

VMS Version 5.3, or greater is required. The following VMS classes are required to install PATHWORKS for VMS:

- VMS required savesets
- Network support
- System programming
- Miscellaneous files
- Secure User Environment

The transports that you use determine what software is required:

Table 1–2 lists other required software and PAKs (Product Authorization Keys).

Table 1–2 Required Software

If you use:	PATHWORKS for VMS requires:
TCP/IP for file and print servicers only	UCX (Ultrix Connection Product) software, a UCX PAK, and DECnet software. No PAK is required for local DECnet. DECnet is needed for PCSA_MANAGER communications with the file server.
DECnet for file and print services only	DECnet software (provided with VMS). DECnet Phase IV PAK.
TCP/IP and DECnet for file and print services only	UCX (Ultrix Connection Product) software, a UCX PAK, and DECnet software (provided with VMS). DECnet Phase IV PAK.

Prerequisite Software for Upgrading an Existing Installation

If you already have a previous version of the product (PCSA VMS Services for PCs), you may be able to upgrade your installation directly to PATHWORKS for VMS Version 4.0. The following chart tells what interim software version needs to be installed before installing Version 4.0.

If you have:	Comment
PCSA Version 2.2	Must install Version 3.1 or 3.0 before installing Version 4.0
PCSA Version 3.0	No interim version necessary; install Version 4.0
PCSA Version 3.1	No interim version necessary; install Version 4.0

Preinstallation Tasks

Before installing PATHWORKS for VMS, review and complete the preinstallation tasks in the sections that follow.

Logging In to a Privileged Account

Install PATHWORKS for VMS from the SYSTEM account to ensure that you have sufficient privileges for installation.

Backing Up Your System Disk

Do a system backup.

Digital recommends that you do a system backup before installing any layered product on the operating system.

Use the backup procedures that have been established at your site.

Checking Device Names

Before you install PATHWORKS for VMS, check the names of your devices for any reserved names:

```
$   SHOW DEVICE LAST
Device                  Device           Error
 Name                   Status           Count
LAST0:                  Online               0
```

Device names that begin with LAST, LAD, LANS or LAC are reserved.

Do not define device labels that begin with LAST, LAD, LANS or LAC. For new installations, if you already have any device label beginning with LAST, LAD, LANS, or LAC, you must rename that device.

For example, you might prefix disk names with DISK$.

Determining Disk Space Requirements

You need 6,000 blocks of disk space to install the software.

The VMS server requires a larger amount of free disk space during installation than it requires after installation.

You need approximately 6,000 blocks of disk space on the system disk during installation.

To determine the number of free disk blocks on the current system disk, enter the following command at the DCL prompt:

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

Disabling Disk Quotas

The installation of PATHWORKS requires that disk quotas be disabled on the SYSTEM accounts (UIC [1,4] and UIC [1,1]).

NOTE *If the DISKQUOTA parameter remains enabled with a low limit during the startup procedure, the SYSTEM account can be left without enough disk space to create or extend the log files and the service database. The file server (PCFS_SERVER.EXE) must be able to create log files and extend the file service database for the file server to start and work properly.*

To disable disk quotas:

1. Enter the following command:

```
$   RUN SYS$SYSTEM:DISKQUOTA
DISKQUOTA>   DISABLE
DISKQUOTA>   EXIT
```

2. Check that the disk quotas have been disabled by entering this command:

```
$   SHOW QUOTA
%SYSTEM-F-QFNOTACT, disk quotas not enabled on this volume
```

DECnet Preinstallation Tasks

This section discusses:

- Starting DECnet
- Defining DECnet logical links
- Defining the DECnet executor pipeline quota
- Enabling Remote Boot Services
- Setting Up Local DECnet for TCP/IP

Starting DECnet

To determine whether DECnet is running, enter:

```
$   MCR NCP SHOW EXECUTOR
```

If DECnet is running, a screen similar to the following is displayed, indicating that the executor node STATE is ON:

```
Node Volatile Status as of  12-OCT-1990 08:03:56

Executor node = 9.884 (SERVR7)

State                     = on
Identification            = DECnet-VAX V5.4,  VMS V5.4
```

If DECnet has already been configured for this system, start DECnet by executing:

```
$   SYS$MANAGER:STARTNET
```

If DECnet is not running:

- Define the node if DECnet is going to be used for file and print services

  In this case, refer to the *VMS System Manager's Manual* for information on how to define nodes.

Defining DECnet Logical Links

To run the VMS file server, you may need to increase the maximum number of DECnet logical links. To determine and change the maximum number of DECnet logical links:

1. Determine the current maximum number of logical links, by setting your default to SYS$SYSTEM and entering:

   ```
   $   MCR NCP
   NCP>   SHOW EXECUTOR CHARACTERISTICS
   ```

   Information similar to the following is displayed. Look for the maximum links line:

   ```
   Node Volatile Characteristics as of 12-AUG-1990 21:30

   Executor node = 9.884 (SERVR7)
   ```

```
Identification            = DECnet-VAX V5.4,  VMS V5.4
Management version        = V4.0.0
Incoming timer            = 45
Outgoing timer            = 60
Incoming Proxy            = Enabled
Outgoing Proxy            = Enabled
NSP version               = V4.1.0
Maximum links             = 32
    .
    .
    .
```

2 Determine the number of logical links you need by using the formula from the following table that is appropriate for your configuration:

Configuration	Formula
Without PC DECwindows/Motif	NUMBER OF LINKS = 2n + x + y
With PC DECwindows/Motif	NUMBER OF LINKS = 3n + x + y

Parameter		Example:
n	Is the number of workstations that can connect to the file server.	20
x	Is the number of nodes in your VAXcluster. If the file server is not running in a VAXcluster, the number of nodes is 1.	3
y	Is the number of additional links required for other DECnet applications, such as DECwindows. See the application's installation documentation for this value.	6

For example, a network that supports DECwindows/Motif, and uses the numbers from the Example column, requires 69 logical links.

3 If the current number of logical links is lower than the number you need, change the number by entering:

```
NCP>   SET EXECUTOR MAXIMUM LINKS n
NCP>   DEFINE EXECUTOR MAXIMUM LINKS n
NCP>   EXIT
$
```

Parameter	Description
n	Is the number of logical links you need.

Defining the DECnet Executor Pipeline Quota

To ensure that the file server transfers large data files correctly and efficiently, you must set the DECnet executor pipeline quota to a value greater than, or equal to, 13,000. To set your quota:

1 Determine the current quota by setting your default to SYS$SYSTEM and entering:

```
$   MCR NCP
NCP>   SHOW EXECUTOR CHARACTERISTICS
```

Information similar to the following is displayed. Look for the Pipeline Quota line:

```
Node Volatile Characteristics as of  12-AUG-1990 21:30:20

Executor node = 9.884 (SERVR7)

Identification           = DECnet-VAX V5.4,  VMS V5.4
Management version       = V4.0.0
Incoming timer           = 45
Outgoing timer           = 60
Incoming Proxy           = Enabled
Outgoing Proxy           = Enabled
NSP version              = V4.1.0
Maximum links            = 32
Delay factor             = 80
Delay weight             = 5
Inactivity timer         = 60
Retransmit factor        = 10
Routing version          = V2.0.0
Type                     = nonrouting IV
Routing timer            = 600
Broadcast routing timer  = 180
```

```
Maximum address          = 1023
Maximum circuits         = 16
Maximum cost             = 1022
Maximum hops             = 30
Maximum visits           = 63
Maximum area             = 63
Mix broadcast nonrouters = 64
Mix broadcast routers    = 32
Maximum path splits      = 1
Area maximum cost        = 1022
Area maximum hops        = 30
Maximum buffers          = 100
Buffer size              = 576
Default access           = incoming and outgoing
Pipeline quota           = 10000
Alias maximum links      = 32
Path split policy        = Normal
Maximum Declared Objects = 31
```

Note *If the pipeline quota is already set to a value larger than 13,000, do not reset it.*

2 If the quota is too low, set the pipeline quota to 13,000, by entering:

```
NCP>   SET EXECUTOR PIPELINE QUOTA 13000
NCP>   DEFINE EXECUTOR PIPELINE QUOTA 13000
NCP>   EXIT
$
```

Enabling Remote Boot Services in DECnet

This section applies only to wide-area networks that use the DECnet transport.

To allow your VAX computer to boot a client over the network, you must enable remote boot services.

Note *When you enable remote boot services, be sure you are not using SETHOST to connect to the VAX computer. In the following procedure, you must set the DECnet circuit OFF, disconnecting SETHOST.*

To enable remote boot services once instead of each time you reboot the VAX computer:

1 Set your default to SYS$SYSTEM and enter:

```
$  MCR NCP
```

2 Determine the existing circuits by entering:

```
NCP>   SHOW KNOWN CIRCUIT
```

A list of circuits is displayed. For example:

```
Known Circuit Volatile Summary as of  22-JAN-1990 09:18:05

   Circuit     State    Loopback     Adjacent
                          Name      Routing Node

   QNA-0       on                   8.1030
```

3 To enable remote boot services, enter the following NCP commands, using any existing circuit identifier from the displayed list:

```
NCP>   SET CIRCUIT circuit-id STATE OFF
NCP>   SET CIRCUIT circuit-id SERVICE ENABLED
NCP>   SET CIRCUIT circuit-id STATE ON
NCP>   DEFINE CIRCUIT circuit-id SERVICE
ENABLED
NCP>   EXIT
```

Parameter	Description
circuit-id	Is the circuit identifier for the VAX computer's Ethernet controller (for example, QNA-0).

Setting Up Local DECnet for TCP/IP

For configurations using the TCP/IP transport:

Follow these special procedures to set up local DECnet if DECnet is going to be used for TCP/IP file and print services only.

In this case, you need to configure DECnet to run locally for communications between the PCSA Manager and the file server.

1 Refer to *VMS System Manager's Manual* for instructions on how to use the SYS$MANAGER:NETCONFIG command procedure to define your node as an end node.

NOTE *After defining your node, do not load the DECnet Phase IV End Node PAK.*

2 Start DECnet by executing this command:

```
$   @SYS$MANAGER:STARTNET
```

3 Verify that DECnet is running by executing:

```
$   SHOW NETWORK
VAX/VMS Network status for local node  1.111 TEST1 on
4-JAN-1991 08:05:21.06
```

Starting UCX Software for TCP/IP

For configurations using the TCP/IP transport:

To determine whether UCX is running, enter the following command:

```
$  SHOW LOGICAL UCX$INET_HOST
 "UCX$INET_HOST" = "SERVR1"
(LNM$SYSTEM_TABLE)
```

If UCX is not running, start it by entering:

```
$   @SYS$MANAGER:UCX$STARTUP
```

For more information, consult the UCX documentation.

First-time Preinstallation Tasks

For first-time installations:

If you are installing PATHWORKS for VMS for the first time, you need to consider the Planning Disk Usage section.

Planning Disk Usage

Consider providing services on different disks.

To decide on which disks to install file and disk services, you need do:

- Avoid using the system disk for any services that can be located on other disks. When the system disk does not have to process file server I/O requests, improved disk access can result.
- Allow for 27,000 blocks of disk space for the PATHWORKS for DOS Version 4.0 client software
- Consider the disk space needed for each client for remote booting. Refer to the chart for Kbyte and Mbyte conversions to blocks (each block is 512 bytes).

Default disk size is 1.2 Mbytes:

Disk Size	Default File Size	Minimum Allocation
360 Kbytes	720 blocks	12 blocks
720 Kbytes	1440 blocks	14 blocks
1.2 Mbytes	2400 blocks	29 blocks
1.44 Mbytes	2840 blocks	33 blocks
5 Mbytes	10240 blocks	66 blocks
10 Mbytes	20480 blocks	16417 blocks
20 Mbytes	40960 blocks	16417 blocks

Default disk size is 1.2 Mbytes:

Disk Size	Default File Size	Minimum Allocation
32 Mbytes	65535 blocks	16417 blocks
64 Mbytes	131072 blocks	16633 blocks
128 Mbytes	262144 blocks	32977 blocks
256 Mbytes	524288 blocks	65665 blocks
512 Mbytes	1048576 blocks	65921 blocks

The installation prompts you for the disk name (logical name) on which you want to locate the following PATHWORKS for VMS components:

- System/application software
- Personal accounts and common services
- LAD (local area disk) boot disks

Setting Process Account Quotas

PATHWORKS for VMS places no special requirements on process account quotas. Default SYSTEM process account quotas are sufficient for installing PATHWORKS for VMS.

Checking System Parameters

VMS system parameters are automatically checked during installation to support:

- 30 Workstations
- 256 Disk Services
- File server cache requirements
- Device Driver memory requirements

PATHWORKS for VMS relies on the AUTOGEN utility to adjust the VMS system parameters stored in the MODPARAMS.DAT data file. If adjustments are needed, the installation procedure informs you what adjustments are required.

See Appendix F for more information on how the parameters used in the installation are calculated.

Upgrade Preinstallation Tasks

If you are upgrading existing software:

If you are upgrading an existing server installation:

1. Notify all PCSA users to log off the server.
2. Determine whether all PCSA users are logged off the server by entering:

   ```
   $  ADMIN/PCSA SHOW FILE_SERVER CONNECTIONS
   $  ADMIN/PCSA SHOW DISK_SERVER CONNECTIONS
   ```

   If all PCSA users are logged off, the following message is displayed:

   ```
   No service connection
   ```

3. If any PCSA users remain connected, disconnect them from the server by entering:

   ```
   $  ADMIN/PCSA STOP FILE_SERVER CONNECTIONS
   $  ADMIN/PCSA STOP DISK_SERVER CONNECTIONS
   ```

4. Stop the file and disk servers.

   To check if you have file or disk server processes running:

   ```
   $   SHOW SYSTEM
   ```

   A list of current processes is displayed, the process identification (PID) number is displayed to the left of the process name. Look for the following processes:

   - PCFS_SERVER (file server)
   - LAD$KERNEL (disk server)

   To stop the file server process, PCFS_SERVER:

   ```
   $   STOP/ID=n
   ```

Parameter	Description
n	the PID (Process Identification) number of the process you want to stop.

   If you cannot stop a process, users may still be connected to the process.

   To stop the disk server process, LAD$KERNEL:

   ```
   $   PCSA_MANAGER
   PCSA_MANAGER>   STOP DISK CONNECTIONS
   PCSA-I_ISVRSTOPPED, all connections stopped...
   ```

5 Disable the automatic start of the file and disk servers (if you have edited your SYS$MANAGER:SYSTARTUP_V5.COM to automatically start the file and disk services).

For example, if SYSTARTUP_V5.COM starts the networking software, search for the following lines:

```
!
$ ! Startup PCSA Disk Server.
!
$  @SYS$STARTUP:LAD_STARTUP
!
$ ! Startup PCSA File Server.
!
$  @SYS$STARTUP:PCFS_STARTUP
!
$ ! Startup LAT.
!
$  @SYS$STARTUP:LTLOAD
```

Edit the lines displayed in bold to comment out the commands, as follows:

```
!
$ ! Startup PCSA Disk Server.
!
$ ! @SYS$STARTUP:LAD_STARTUP
!
$ ! Startup PCSA File Server.
!
$ ! @SYS$STARTUP:PCFS_STARTUP
!
$ ! Startup LAT.
!
$ ! @SYS$STARTUP:LTLOAD
```

Note *VMS defines SYS$STARTUP as a search list that includes both the startup directory and the SYS$MANAGER directory.*

Logging Out

If you are not completing the other steps of the installation at this time, log out of the privileged account:

```
$ LOGOUT
SYSTEM      logged out at dd-mmm-yyyy hh:mm:ss.ss
```

2

Installing PATHWORKS for VMS

VMSINSTAL is the standard installation procedure for VMS layered products. It consists of a series of questions and informational messages.m

This chapter describes how to use VMSINSTAL to install PATHWORKS for VMS.

Table 2–1 is a checklist of the steps you need to follow to install PATHWORKS for VMS.

Caution *Be sure you understand the information and complete the tasks described in Chapter 1 before you perform the installation tasks in this chapter.*

Table 2–1 Checklist for Installing PATHWORKS for VMS

☐	Start VMSINSTAL.
☐	Respond to installation questions.
☐	Follow up on error messages.

Starting VMSINSTAL

Allow 15 to 30 minutes to complete the instructions in this chapter.

To start the installation procedure:

1. Log into a privileged account on the server, such as the SYSTEM account, if you have not already done so.
2. Set the default directory by entering:

```
$  SET DEFAULT SYS$UPDATE
```

Note *If you are upgrading an existing installation, do not install a new version of the server software until all PATHWORKS users are disconnected from the server.*

3. Start VMSINSTAL by entering:

```
$  @VMSINSTAL PCSA040 device_name OPTIONS N
```

For information on other VMSINSTAL options, see the VMS System Manager's Manual.

Parameter	Description
PCSA040	Identifies the product.
device_name	Is the name of the device on which you plan to mount the media. For example, MTA0, MUA0, or MKA500 (depending on the media) is the device name for a tape drive.
OPTIONS N	Is an optional parameter that causes the installation procedure to prompt you about accessing online Release Notes during the installation. Because the online Release Notes can contain important information about changes to the installation procedure, Digital recommends that you specify OPTIONS N.

Note *You can interrupt the installation procedure at any time by pressing* Ctrl/Y. *The installation procedure deletes all the files it has created and exits. You can start the installation again.*

Responding to VMSINSTAL Questions

Default responses are displayed in brackets.

Each VMSINSTAL question you need to answer is marked with an asterisk (*) at the beginning of the line. Some questions show a default response in brackets. The PATHWORKS for VMS installation supports a configuration of 30 clients. Unless some aspect of your system differs from this configuration, as a general rule, you can accept the default.

Press Return to accept a default response.

To accept a default response, press Return. For example:

```
* Do you want to run the IVP after the installation [YES]?
```

The following sections list the questions in the order that they appear during the installation.

Note *Depending on the configuration of your VAX computer, the dialog that occurs during your installation can differ slightly from the examples that appear in this section.*

General VMSINSTAL Questions

The installation begins with a series of general questions.

For a sample installation script, see Appendix B.

1 Active Processes

```
%VMSINSTAL-W-ACTIVE, The following processes are still
active:
    .
    .
    .
* Do you want to continue anyway [NO]?
```

Answer YES to this question.

The active processes and the installation procedure do not interfere with each other.

2 System Backup

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

If you have not made a backup, or are not satisfied with the backup you made, enter NO to discontinue the installation. After you back up your system disk, restart the installation.

If you are satisfied with the backup of your system disk, press Return.

3 Mounting Media

```
Please mount the first volume of the set on  MUA0:.
* Are you ready? YES
%MOUNT-I-MOUNTED, PCSA mounted on _SERVR1$MUA0:
```

If your installation kit contains more than one volume, the installation prompts you to insert the additional volumes and asks you to indicate when you are ready to proceed with the installation.

Sample installation messages:

VMSINSTAL displays a message that the installation of PATHWORKS for VMS is beginning. The following example shows a series of messages displayed as the installation begins:

```
The following products will be processed:

  PCSA V4.0

    Beginning installation of PCSAV40 at hh:mm

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

The OPTIONS N parameter provides these release notes options.

4 Release Notes Options

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

Additional Release Notes Options:

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

* Select option [2]:
```

The installation prompts you about release notes only if you specified OPTIONS N when you started VMSINSTAL.

- If you select option 1 or 3, VMSINSTAL displays the Release Notes immediately on the console terminal.

  You can terminate the display at any time by pressing Ctrl/C.

- If you select option 2 or 3, the installation prompts you for the name of the print queue that you want to use:

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

  Enter a queue name, or press Return to send the file to the default output print device.

  File name and location of release notes:

  The file name for the release notes is PCSA040.RELEASE_NOTES. VMSINSTAL moves the release notes to SYS$HELP, whether or not you specified OPTIONS N.

5 Checking if DECnet is running

```
 %PCSA-I-CHK_NET, Checking if DECnet is running
```

The file server requires that DECnet be running.

6 Checking for Files that Interfere with the Installation

```
%PCSA-I-CHK_DIRS, Checking directories for files that interfere with PATHWORKS
%PCSA-I-PCFS_RUNNING, Checking if the File Server and Disk
server are running...
```

The installation prompts you as it checks for previously installed PCSA files that interfere with the installation and running of the server software. You can either continue the installation and remove the files afterwards, or stop the installation at this time and remove the files.

```
The following files were detected in the SYS$SPECIFIC directories.

SYS$SPECIFIC:[SYSEXE]PCFS_SERVER.EXE;1

    Remove the above files before running the PATHWORK servers.

    These files were also recorded in the
    SYS$MANAGER:PCSA$SYS_SPECIFIC.UNEXPECTED_FILES file


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

7 Running the Installation Verification Procedure (IVP)

```
* Do you want to run the IVP after the
installation [YES]?
```

- To run the IVP automatically after the installation procedure, press Return.
- To run the IVP independently of the installation procedure, enter NO. Instructions for running the IVP independently of the installation procedure are in Chapter 3.

See Appendix A for a list of PATHWORKS for VMS components.

8 Purging Files

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

Purging deletes the old versions of the files replaced by the installation and saves disk space. If you choose not to have the installation procedure purge files, you can purge the files manually after you complete the installation successfully.

Additional Questions for First-time Installations

If you are installing the VMS server for the first time, the installation requests the following information:

Wherever possible, refer to a disk by its system logical name such as SYS$SYSDEVICE instead of its physical device name such as 1DISK:

1 The client system device name.

```
* Disk Name for PCSA system/application software [SYS$SYSDEVICE]:
```

Enter the name of the device that will hold the PCSA client system and application software, or take the default name.

2 The device name for personal accounts and common services.

```
* Disk Name for USER accounts, COMMON services
  [SYS$SYSDEVICE]:
```

Enter the name of the device that holds personal accounts and common services.

3 The group number.

```
* Group number for PCSA software directories [360]:
```

Enter the group UIC for the PCSA users.

4 Disk server boot device.

```
* Disk Name for LAD BOOT disks [SYS$SYSDEVICE]:
```

Enter the name of the device to hold the disk server's network boot disks.

Additional Messages

When the installation questions have been answered, the installation continues.

- **Installation continues unattended message**

```
%PCSA-I-VERSION, Checking for VMS version 5.3 or greater
%PCSA-I-FREEBLKS, Checking for 5200 free blocks
%PCSA-I-CHK_PARAMS, Checking SYSGEN parameters

            All questions have been answered.
            The installation of PATHWORKS for VMS V4.0
            will continue unattended.


%VMSINSTAL-I-RESTORE, Restoring product save set B ...

%PCSA-I-DIRECTORY, Checking for [PCSA] on the system disk
%VMSINSTAL-I-SYSDIR, This product creates system directory [PCSA].

If you intend to execute this layered product on other nodes in your
VAXcluster, and you have the appropriate software license, you must
prepare the system-specific roots on the other nodes by issuing the
following command on each node (using a suitably privileged account):

        $ CREATE /DIRECTORY SYS$SPECIFIC:[PCSA]
   .
   .
   .
```

- **Postinstallation checklist message**

  This checklist advises you to configure your system as part of the postinstallation tasks described in Chapter 3

```
*********************************************************************
******************POST-INSTALLATION CHECKLIST**********************
*********************************************************************

Configure the file server

1) Type ADMIN/PCSA MENU
2) Select Utility Options ->Configure Server Parameters
3) Answer the configuration questions


Start the file server using the specified transport(s):

   For DECnet,          @SYS$STARTUP:PCFS_STARTUP
   For TCP,             @SYS$STARTUP:PCFS_STARTUP TCP
   For DECnet and TCP,  @SYS$STARTUP:PCFS_STARTUP DECNET/TCP

Start the disk server:  @SYS$STARTUP:LAD_STARTUP
```

- **Moving files to their target directories**

  If the installation procedure is successful so far, VMSINSTAL moves the new or modified files to their target directories and updates help files. If you asked for files to be purged, that work is done now. The following message is displayed:

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

- **Displaying IVP messages**

  If you chose to run the IVP automatically after the installation procedure, the following message is displayed:

  ```
  Starting Installation Verification Procedure
  for PATHWORKS for VMS V4.0 at  2-NOV-1990 17:20
  ```

- **Displaying a Completed Installation Message**

  When the installation is complete, the following message is displayed:

  ```
  IVP Completed Successfully at  2-NOV-1990 17:20
  ```

Error Messages and Conditions

If errors occur, the installation displays the following message:

```
%VMSINSTAL-E-INSFAIL, The installation of PCSA V4.0
has failed.
```

Possible conditions causing errors

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

- The operating system version is incorrect.
- A prerequisite software version is missing.
- Quotas necessary for successful installation are insufficient.

- System parameter values for successful installation are insufficient.
- Disk space is inadequate.

Installation requirements are described in Chapter 1 and system parameters in Appendix F.

If you are notified that any of these conditions exist, take the appropriate action described in the message.

System Parameter Error Messages

If your system parameters are not sufficient to complete the installation, you get messages similar to the following:

```
****************************************************************
*************** SYSTEM REBOOT REQUIRED *************************
****************************************************************

Your system parameter(s) are insufficient to complete the installation.

Complete the following steps to adjust your system parameters:

1) Run the PCSA$CONFIG command procedure by entering:
@SYS$STARTUP:PCSA$CONFIG

2) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT

3) Select OPTION 2 AUTOGEN and REBOOT your system

4) Reinstall PATHWORKS
```

In this case, a system reboot is required to define the ADMIN/PCSA verb.

This message is displayed when the installation detects that the system parameters need to be modified for PATHWORKS:

```
*********************************************************************
**************SYSTEM REBOOT REQUIRED AFTER INSTALLATION**************
*********************************************************************
PATHWORKS for VMS requires that system parameters be managed using
AUTOGEN and MODPARAMS.DAT. Some of your system  parameters used by
PATHWORKS need to be adjusted.

1) Run the PCSA$CONFIG command procedure by entering:
   @SYS$STARTUP:PCSA$CONFIG <RETURN>

2) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
3) Select OPTION 2 AUTOGEN and REBOOT your system

NOTE: Do not reinstall the kit. Complete the post-installation
      tasks listed in the installation guide.
```

In either case:

Execute PCSA$CONFIG by entering: @SYS$STARTUP: PCSA$CONFIG

1. Run the procedure PCSA$CONFIG.COM to assist you in updating your system parameters.

   When PCSA$CONFIG prompts you:

   a. Choose Option 1 to append the required system parameter changes in the PCFS$MODPARAMS.DAT file to the MODPARAMS.DAT file.

   b. Choose option 2 to set the system parameters by using AUTOGEN and rebooting the system to insure that the system parameters are changed.

2. If you see the following checklist item in the message, you need to begin the installation over again. In that case, run PCSA$CONFIG.COM and then reboot your system, before reinstalling PATHWORKS for VMS

   ```
   4) Reinstall PATHWORKS for VMS.
   ```

Logging Out

Log out of the privileged account:

```
$ LOGOUT
SYSTEM      logged out at dd-mmm-yyyy hh:mm:ss.ss
```

Next Steps

Now that you have installed the PATHWORKS for VMS software, perform the postinstallation tasks described in Chapter 3.

3

Postinstallation Tasks

Before you can use PATHWORKS for VMS, you must perform some postinstallation tasks.

Allow 15 to 30 minutes to complete the instructions in this chapter.

Table 3–1 is a checklist of the steps you need to follow for postinstallation tasks.

Table 3–1 Checklist for Postinstallation Tasks

☐	Run the IVP if you have not already done so.
☐	Configure the file and disk servers.
☐	Restart the file and disk servers.
☐	Enable the automatic startup of the file and disk servers.
☐	Make a final check of the system.

Running the IVP Independently of Installation

If you ran the IVP automatically with the installation procedure, it is unnecessary to run it again.

The Installation Verification Program (IVP) verifies the installation.

If you planned to run the IVP independent of the installation procedure, run it now by entering:

```
$  @SYS$TEST:PCFS$IVP.COM
```

The IVP checks to make sure that all files were copied successfully during the installation.

When the IVP successfully completes all tests, a message is displayed notifying you that the Installation Verification Procedure was completed successfully.

```
IVP Completed Successfully at  2-NOV-1990 17:20
        Installation of PCSA V4.0 completed at 17:20
```

If the IVP is unsuccessful, the following message is displayed:

```
The PATHWORKS for VMS V4.0 Installation Verification
Procedure failed.

%VMSINSTAL-E-IVPFAIL, The IVP for DEC PATHWORKS V4.0 has
failed.
```

In this case, follow up with the corrective actions described in the Error Messages and Conditions section of Chapter 2.

Configuring the File Server

The file server does not start unless it is configured.

To configure the file server:

1. Run the menu, by issuing the command:

   ```
   $   ADMIN/PCSA MENU
   ```

2. Select the Utilities menu.

3. Choose the **Configure Server Parameters** option.

   All the configuration parameters are displayed as follows:

   ```
   Number of workstations    [  30]  File extent in blocks       [256]
   Cache size in pages       [1024]  Cache buffer size in bytes  [8192]
   Enable open file caching? [    N] File close delay in seconds[ 15]
   ```

4. Use the cursor keys to move between fields. Move the cursor on the parameter you want to change. Enter CTL-H for help about a selected parameter.

5 Enter the new values.

For example, to increase the number of workstations to 50, at the cursor, enter 50, as follows:

```
Number of workstations    [   50]
```

To quit without saving, press CTL-E

6 To save the new values, press CTRL/E.

7 If changes to the system parameters are required, then you see messages displayed similar to the following:

```
      ****************************************
      *    System parameters are insufficient  *
      ****************************************

 Run the PCSA$CONFIG.COM command procedure by typing:
     @sys$startup:pcsa$config.com

Select OPTION 1 to Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
Select OPTION 2 to AUTOGEN and REBOOT your system

Please read SYS$SPECIFIC:[PCSA]PCFS$STARTUP.LOG for details.
```

8 Follow the instructions to modify the system parameters in System Parameter Error Messages.

Configuring the Disk Server

Changing the number of disk services.

By default. the disk server allows for 256 disk services. Servers with many network key disks can require more than the default number of disk services. A **network key disk** is a disk service used to boot a user's client and is unique for each client.

Listing mounted disk services.

Determine how many disk services are mounted on the server by listing them. The display lists network key disks as well as other disk services and the access allowed for each service. Increase the maximum when the number of mounted services approaches the maximum.

To list the disk services:

1 Access the menu by issuing the command:

```
$   ADMIN/PCSA MENU
```

2 Select **Service Options**.

3 Select **List Services** from the Service Options menu.

4 Select **List Registered Disk Services** from the List Services menu. The following list is displayed:

```
Service name  Type  Server   Limit   Users   Acc    Rating    Status
------------  ------------   -----   -----   ---    ------    ------
01-11-11-11-11-11 (TEST01)
               BOOT APPLE     1       0    RW         1    MNT PERM
   Container File:  SYS$SYSDEVICE:[LADBOOT]TEST01.DSK;1
02-00-0A-FF-02-46 (STUFF2)
               BOOT ORANGE    1       0    RW         1    MNT PERM
   Container File:  SYS$SYSDEVICE:[LADBOOT]STUFF2.DSK;1
02-11-11-11-11-11 (STUFF3)
               BOOT GRAPE      1       0    RW        1    MNT PERM
   Container File:  SYS$SYSDEVICE:[LADBOOT]STUFF3.DSK;1
03-00-0A-FF-02-46 (STUFF4)
               BOOT RAZZY    1       0    RW          1    MNT PERM
   Container File:  SYS$SYSDEVICE:[LADBOOT]STUFF4.DSK;1

Press RETURN to continue...
```

Network key disks are displayed with:

- An Ethernet address: six pairs of hexadecimal numbers in the Service Name column separated by dashes.
- BOOT type in the Type column.

The list of registered disk services includes services added to the network with each of these options:

Increasing the number of disk services

To increase the number of services:

1 Choose Add Service option from the Application Disk menu.

2 Choose CREATE DISK.

3 Name the disk.

4 Choose the size of the disk or press RETURN to accept the default size of 10 Megabytes.

Changing maximum number of disk services

To change the maximum number of disk services:

1 Edit the startup data file ESS$LAD_STARTUP.DAT.

This data file defines the maximum number of disk services allowed on the server. The default value is 256. To change this value to another number, such as 500, enter:

```
MAXIMUM_SERVICES = 500 !maximum services
```

2 Stop the disk server by entering:

```
PCSA_MANAGER>  STOP DISK_SERVER
CONNECTIONS
```

3 For the change to take effect, restart the disk server by entering:

```
$  @SYS$STARTUP:LAD_STARTUP
```

4 If you increase the number of disk services, you may see a message that you now need to increase the required NPAGEDYN value.

Because the disk server is a VMS device driver, the resources for the disk server come from the system dynamic memory. NPAGEDYN is a VMS SYSGEN parameter that defines the amount of system dynamic memory.

5 If you need to increase the NPAGEDYN, when the server starts, it displays the following message:

```
Disk Server for PATHWORKS for VMS will not start
 8-JAN-1991 11:13:11.65 (Insufficient NPAGEDYN)

To adjust your NPAGEDYN SYSGEN setting
1) Run the PCSA$CONFIG command procedure by entering:
   @sys$startup:pcsa$config <RETURN>

2) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
3) Select OPTION 2 AUTOGEN and REBOOT your system
```

To change NPAGEDYN:

a Run the PCSA$CONFIG.COM command procedure by entering:

```
$  @SYS$STARTUP:PCSA$CONFIG
```

b Select OPTION 1 to append PCFS$MODPARAMS.DAT to MODPARAMS.DAT.

c Select OPTION 2 to run AUTOGEN and reboot your system.

For more information on the menu and on managing the system, see the *Server Administrator's Guide*.

Enabling the Server Startup Files

This section discusses:

- Manually starting the file and disk server.
- Editing the system startup file (SYSTARTUP_V5.COM) for automatically starting the servers.

Note *If you disabled DISKQUOTA on the SYSTEM account before installing the VMS server, remember to enable it again.*

Manually Starting the File and Disk Servers

Before rebooting, you can run command procedures to start any or all of the server software components manually:

1. Start the file server using the one of the specified transports.
   - For DECnet, use the command:

     ```
     @SYS$STARTUP:PCFS_STARTUP DECNET
     ```

     The startup file checks that you have sufficient memory. If you do not have sufficient memory, you see an error message similar to the following:
   - For TCP, use the command:

     ```
     @SYS$STARTUP:PCFS_STARTUP TCP
     ```
   - For DECNET and TCP, use the command:

     ```
     @SYS$STARTUP:PCFS_STARTUP DECNET/TCP
     ```
2. To start the disk server, use the command:

   ```
   @SYS$STARTUP:LAD_STARTUP
   ```

NOTE *For automatic startup, add these lines to the SYSTARTUP_V5.COM of your system.*

Editing SYSTARTUP_V5.COM for System Startup

Edit the SYS$STARTUP:SYSTARTUP_V5.COM file (the site-specific system startup file) to start any or all of the following software components automatically, whenever your system is booted:

- PATHWORKS for VMS file server
- PATHWORKS for VMS disk server
- Local area transport (LAT) if you want to use the PCSA VT320 terminal emulator or the SETHOST terminal emulator with the VMS server

To enable an automatic startup:

1. If this is a first-time installation, add lines to SYSTARTUP_V5.COM to perform the startup commands.

Note *Search for the lines that start DECnet or the TCP/IP transport in SYSTARTUP_V5.COM , and be sure to place the lines that start the file and disk servers after the lines that start the transports.*

If your installation is an upgrade, remove the comment character from each line in SYSTARTUP_V5.COM that you had previously commented out.

When edited, the lines in SYSTARTUP_V5.COM are:

```
$  !
$  ! Startup PCSA Disk Server.
$  !
$  @SYS$STARTUP:LAD_STARTUP

$  !
$  ! Startup PCSA File Server.
$  !
$  @SYS$STARTUP:PCFS_STARTUP
$  !
$  ! Startup LAT.
$  !
$  @SYS$STARTUP:LTLOAD
```

Note *To start the disk server, add only the LAD_STARTUP command. To start the file server, add only the PCFS_ STARTUP command. If you do not want to use the VT320 or SETHOST terminal emulators, omit the LTLOAD command.*

2 Add the name of the transport you are using to the line that starts the file server. If a transport is not specified, the DECnet transport is used by default.

You have these options:

Add the transport DECNET, TCP, or DECNET/TCP to the PCFS command.

- If you have DECnet transport, you add:

  ```
  $   @sys$startup:pcfs_startup     DECNET
  ```

- If you have TCP/IP transport, you add:

  ```
  $     $@sys$startup:pcfs_startup     TCP
  ```

- If you have both DECnet and TCP/IP transports, you add:

  ```
  $      @sys$startup:pcfs_startup     DECNET/TCP
  ```

Parameter	Description
specified_transport	DECNET, TCP, or DECNET/TCP.

Final Check of the System

After you install the server software, you must:

1. Enable disk quotas if you disabled them before installation.

   If you disabled disk quotas before installing the VMS server, enable them now by entering:

   ```
   $   RUN SYS$SYSTEM:DISKQUOTA
   DISKQUOTA>  ENABLE
   DISKQUOTA>  EXIT
   $
   ```

2. Verify that all changes made to any parameter setting were maintained after the reboot.

Next Steps

This section describes what you need to do next if you have a:

- VAXcluster system
- Standalone system

VAXcluster Systems

If you have a VAXcluster system you need to:

- Perform the preinstallation tasks for DECnet for each cluster node, as described in Chapter 1.
- Configure the VAXcluster system as described in Chapter 4.

Standalone Systems

If you have a standalone system (one that is not part of a Local Area VAXcluster):

1. Make changes to the default network configuration established by VMSINSTAL, if needed.
2. Make sure the clients meet installation requirements.

   See the Installation Module in the *Client Installation and Configuration Guide for the ULTRIX Server*.
3. Install client software on the clients.

   See the Installation Module in the *Client Installation and Configuration Guide for the ULTRIX Server*.

4

Configuring a VAXcluster System

If you have a VAXcluster system, there are additional postinstallation tasks you must perform at each of the other servers on the VAXcluster system.

Table 4–1 is a checklist of the steps you need to follow to configure a VAXcluster system.

Table 4–1 Checklist for VAXclusters

☐	Complete the DECnet preinstalltion checks, as described in Chapter 1.
☐	Modify nodes if you have a VAXcluster.
☐	Modify logical definitions of your VAXcluster.
☐	Determine the steps you need to complete next.

Modifying Nodes on a VAXcluster

If you install the VMS server on a VAXcluster, the system parameters on the node you installed on are checked. To check all the other nodes, perform these steps:

1. Log in to the system of the node you install the kit on.
2. Execute the command procedure PCSA$CONFIG.COM in SYS$STARTUP.

   ```
   @SYS$STARTUP:PCSA$CONFIG.COM
   ```

3. Select Option 3, Configure Cluster Nodes

When OPTION 3 is selected, the PCSA$CONFIG.COM command procedure:

Use SYS$STARTUP: PCSA$CONFIG.COM to modify each node separately

- Creates a SYS$SPECIFIC:[PCSA] directory
- Checks directories for files that interefere with PATHWORKS for VMS
- Defines and sets DECnet objects
- Checks system parameters to support 30 workstations
- Defines the ADMINISTER DCL verb (ADMIN/PCSA)

You can manually update the nodes on the cluster by performing the following operations on each node.

1. Login to the system account and execute the following command to create the PCSA account

   ```
   $   CREATE/DIR SYS$SPECIFIC:[PCSA]/OWNER=[1,1]
   ```

2. Manually search the SYS$SPECIFIC directories for files listed in APPENDIX A. If files are found, remove them. These file interfere with the running of PATHWORKS for VMS

3 Define the DECnet objects PCFS PCSARMI, PCXSERVER, and PCSA$MAIL by entering:

```
$  MCR NCP
NCP>  SET OBJECT PCFS NUMBER 64 PROXY NONE
NCP>  SET OBJECT PCSA$RMI NUMBER 0-
  _   FILE SYS$SYSTEM:PCSA_RMI.COM USER
PCSA$RMI
PASSWORD password
NCP>  SET OBJECT PCX$SERVER NUMBER 0 -
  _   FILE SYS$SYSTEM:PCX$SERVER.COM
NCP>  SET OBJECT PCSA$MAIL NUMBER 0 FILE -
  _   FILE SYS$SYSTEM:PCSA$MAIL_SERVER.EXE
NCP>  DEFINE OBJECT PCFS NUMBER 64 PROXY
NONE
NCP>  DEFINE OBJECT PCSA$RMI NUMBER 0 -
  _   FILE SYS$SYSTEM:PCSA_RMI.COM USER
PCSA$RMI PASSWORD password
NCP>  DEFINE OBJECT PCX$SERVER NUMBER 0 -
  _   FILE SYS$SYSTEM:PCX$SERVER.COM
NCP>  DEFINE OBJECT PCSA$MAIL NUMBER 0 FILE
-
  _   FILE SYS$SYSTEM:PCSA$MAIL_SERVER.EXE
NCP>  EXIT
$
```

Parameter	Description
password	Is the password for the PCSA$RMI account.

Obtain the password for PCSA$RMI by entering the following command from a fully privileged SYSTEM account on the node where you installed the VMS server:

```
$   MCR NCP SHOW OBJECT PCSA$RMI
```

This information is displayed:

```
Object Volatile Summary as of 29-JAN-1990 17:38:41

 Object   Number  File/PID                  User Id     Password

PCSA$RMI       0  SYS$SYSTEM:PCSA_RMI.COM   PCSA$RMI
1717477882142333
```

4 Execute the ADMIN/PCSA MENU command.

a Configure the system using the **Configure Server Parameters** option from the Utilities option menu.

b Specify your workload and complete the installation instructions as indicated.

5 Make sure that the ADMINISTER DCL verb (ADMIN/PCSA) command is defined in the shared DCL tables by entering:

```
$   ADMIN/PCSA
PCSA_MANAGER>
```

If the command is missing from the shared tables, an error message is displayed instead of the PCSA prompt.

Define the PCSA command on each node by entering:

```
$  INSTALL :== $ INSTALL/COMMAND
$  INSTALL
INSTALL>  REPLACE SYS$SHARE:DCLTABLES
INSTALL>  EXIT
$
```

Next Steps

Now that you have configured your VAXcluster system, you must:

1 Make changes to the default network configuration established by VMSINSTAL, if needed.

2 Make sure the clients meet installation requirements.

See the Installation Module in the *Client Installation and Configuration Guide with Diskettes*.

3 Install client software on the clients.

See the Installation Module in the *Client Installation and Configuration Guide with Diskettes*.

4 Select network connection, and file and print services, if desired.

A

VMS Server V4.0 Files and Logical Names

The following files are installed on the VMS server during an installation of PATHWORKS for VMS software:

```
[PCSA.CONTENTS_A]KITINSTAL.COM;1
[PCSA.CONTENTS_A]PCSA$CONFIG.COM;1
[PCSA.CONTENTS_A]PCSA$PARAMS.COM;1
[PCSA.CONTENTS_A]PCSA040.RELEASE_NOTES;1
[PCSA.CONTENTS_B]CFG_US.DAT;1
[PCSA.CONTENTS_B]ESS$LADCP.EXE;1
[PCSA.CONTENTS_B]ESS$LADCP.HLB;1
[PCSA.CONTENTS_B]ESS$LADDRIVER.EXE;1
[PCSA.CONTENTS_B]ESS$LAD_STARTUP.COM;1
[PCSA.CONTENTS_B]ESS$LAD_STARTUP.DAT;1
[PCSA.CONTENTS_B]ESS$LASTCP.EXE;1
[PCSA.CONTENTS_B]ESS$LASTCPHELP.HLB;1
[PCSA.CONTENTS_B]ESS$LASTDRIVER.EXE;1
[PCSA.CONTENTS_B]ESS$LAST_STARTUP.COM;1
[PCSA.CONTENTS_B]ESS$LAST_STARTUP.DAT;1
[PCSA.CONTENTS_B]LAD$KERNEL.EXE;1
[PCSA.CONTENTS_B]LAD$SERVICE_DATABASE.FDL;1
[PCSA.CONTENTS_B]LAD.OLB;1
[PCSA.CONTENTS_B]LADCDRIVER.EXE;1
[PCSA.CONTENTS_B]LAD_LOGICALS.COM;1
[PCSA.CONTENTS_B]LAD_STARTUP.COM;1
[PCSA.CONTENTS_B]LASTSYM.STB;1
[PCSA.CONTENTS_B]LAST_BUILD_OPTIONS.OPT;1
[PCSA.CONTENTS_B]NBNS.EXE;1
[PCSA.CONTENTS_B]NETBIOS.EXE;1
[PCSA.CONTENTS_B]NETBIOSSHR.EXE;1
[PCSA.CONTENTS_B]NETIO.H;1
[PCSA.CONTENTS_B]PCDISK.EXE;1
[PCSA.CONTENTS_B]PCDISKHLP.HLB;1
[PCSA.CONTENTS_B]PCDISKSHR.EXE;1
[PCSA.CONTENTS_B]PCFS$CACHE_STATISTICS.FDL;1
[PCSA.CONTENTS_B]PCFS$COLLECTOR.EXE;1
[PCSA.CONTENTS_B]PCFS$IVP.COM;1
[PCSA.CONTENTS_B]PCFS$IVP.DAT;1
[PCSA.CONTENTS_B]PCFS$SERVICE_DATABASE.FDL;1
[PCSA.CONTENTS_B]PCFS$STARTUP_PARAMS.DAT;1
[PCSA.CONTENTS_B]PCFS_LOGICALS.COM;1
[PCSA.CONTENTS_B]PCFS_MAIL.EXE;1
[PCSA.CONTENTS_B]PCFS$COLLECTOR.EXE;1
[PCSA.CONTENTS_B]PCFS$IVP.COM;1
[PCSA.CONTENTS_B]PCFS$IVP.DAT;1
[PCSA.CONTENTS_B]PCFS$SERVICE_DATABASE.FDL;1
```

```
[PCSA.CONTENTS_B]PCFS$STARTUP_PARAMS.DAT;1
[PCSA.CONTENTS_B]PCFS_LOGICALS.COM;1
[PCSA.CONTENTS_B]PCFS_MAIL.EXE;1
[PCSA.CONTENTS_B]PCFS_MAILSHR.EXE;1
[PCSA.CONTENTS_B]PCFS_MAIL.EXE;1
[PCSA.CONTENTS_B]PCFS_MAIL.EXE;1
[PCSA.CONTENTS_B]PCFS$IVP.DAT;1
[PCSA.CONTENTS_B]PCFS$SERVICE_DATABASE.FDL;1
[PCSA.CONTENTS_B]PCFS$STARTUP_PARAMS.DAT;1
[PCSA.CONTENTS_B]PCFS_LOGICALS.COM;1
[PCSA.CONTENTS_B]PCFS_MAIL.EXE;1
[PCSA.CONTENTS_B]PCFS_MAILSHR.EXE;1
[PCSA.CONTENTS_B]PCFS_SERVER.EXE;1
[PCSA.CONTENTS_B]PCFS_STARTUP.COM;1
[PCSA.CONTENTS_B]PCMS_SERVER.SAV;3
[PCSA.CONTENTS_B]PCSA$BOOT_DATABASE.FDL;1
[PCSA.CONTENTS_B]PCSA$MAIL_SERVER.EXE;1
[PCSA.CONTENTS_B]PCSA.CLD;1
[PCSA.CONTENTS_B]PCSA_CLAIM_NAME.EXE;1
[PCSA.CONTENTS_B]PCSA_MAILSHR.EXE;1
[PCSA.CONTENTS_B]PCSA_MANAGER.COM;1
[PCSA.CONTENTS_B]PCSA_MANAGER.EXE;1
[PCSA.CONTENTS_B]PCSA_MANAGER.HLB;1
[PCSA.CONTENTS_B]PCSA_RMI.COM;1
[PCSA.CONTENTS_B]PCX$SERVER.COM;1
[PCSA.CONTENTS_B]PCX$WINMGR.EXE;9
[PCSA.CONTENTS_B]SDA.COM;2
```

The following logicals are installed on the VMS server during an installation of PATHWORKS for VMS software:

```
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$SERVICE_DATABASE SYS$COMMON:[PCSA]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$LOG_FILES SYS$SPECIFIC:[PCSA]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$SYSTEM  SYS$SYSDEVICE:[PCSA.]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$APPLICATION SYS$SYSDEVICE:[PCSA.]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$USER SYS$SYSDEVICE:
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$COMMON SYS$SYSDEVICE:
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCFS$SPOOL SYS$SYSDEVICE:[PCFS_SPOOL.]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
LAD$SERVICE_DATABASE
SYS$COMMON:[PCSA]LAD$SERVICE_DATABASE.DAT
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
LAD$LOG_FILES SYS$SPECIFIC:[PCSA]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
LAD$SYSTEM_DISKS SYS$SYSDEVICE:[PCSA.LAD]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
LAD$BOOT_DISKS SYS$SYSDEVICE:[LADBOOT]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
LAD$APPLICATION_DISKS SYS$SYSDEVICE:[PCSA.LAD]
$ DEFINE/SYSTEM/EXECUTIVE/NOLOG
PCSA$BOOT_DATABASE SYS$COMMON:[PCSA]
```

B

Sample Installation Procedure

This appendix shows logs for:

- First-time installations
- Upgrade installations

Depending on your particular configuration, your installation may vary from these samples.

Sample Installation

The following is a sample first-time installation on a system that is new to PATHWORKS for VMS software.

```
$ @vmsinstal pcsa040 mua0: OPTIONS N

        VAX/VMS Software Product Installation Procedure V5.3


It is 4-JAN-1991 at 10:37.

Enter a question mark (?) at any time for help.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
        USER1
        DECW$WM_1
        USER1_SM1
        DECW$TE_1
        _TWA5:
        _TWA6:
        _TWA7:
* Do you want to continue anyway [NO]? yes
* Are you satisfied with the backup of your system disk [YES]?

Please mount the first volume of the set on  MUA0:.
* Are you ready? yes
%MOUNT-I-MOUNTED, PCSA mounted on _LJPV4$MUA0:
The following products will be processed:
  PCSA V4.0

        Beginning installation of PCSA V4.0 at 10:39

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

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

```
   Additional Release Notes Options:

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

* Select option [2]: 4
* Do you want to continue the installation [NO]? yes
%VMSINSTAL-I-RELMOVED , The product's release notes have been successfully move.
%PCSA-I-CHK_NET, Checking if DECnet is running
%PCSA-I-CHK_DIRS, Checking directories for files that interfere with PATHWORKS

%PCSA-I-CHK_SERVERS, Checking if the servers are running on this system...
* Do you want to run the IVP after the installation [YES]?
* Do you want to purge files replaced by this installation [YES]?
* Disk Name for PCSA system/application software [SYS$SYSDEVICE]:
* Disk Name for User accounts, COMMON services [SYS$SYSDEVICE]:
* Group number for PCFS software directories [360]:
* Disk Name for LAD BOOT disks [SYS$SYSDEVICE]:
%PCSA-I-VERSION, Checking for VMS version 5.3 or greater
%PCSA-I-FREEBLKS, Checking for 5200 free blocks
%PCSA-I-CHK_PARAMS, Checking SYSGEN parameters

            All questions have been answered.
            The installation of PATHWORKS for VMS V4.0
            will continue unattended.


%VMSINSTAL-I-RESTORE, Restoring product save set B ...

%PCSA-I-DIRECTORY, Checking for [PCSA] on the system disk
%VMSINSTAL-I-SYSDIR, This product creates system directory [PCSA].

    If you intend to execute this layered product on other nodes in your
    VAXcluster, and you have the appropriate software license, you must
    prepare the system-specific roots on the other nodes by issuing the
    following command on each node (using a suitably privileged account):

        $ CREATE /DIRECTORY SYS$SPECIFIC:[PCSA]
%PCSA-I-OLDLADS, Checking for old LAD and LAST components
%PCSA-I-CRE_RBDB, Creating the Remote Boot Service Database
%PCSA-I-CRE_ACF, Creating the File Service Database
%PCSA-I-CRE_LAD_ACF, Creating the Local Area Disk Service Database
%PCSA-I-INITIAL, Creating the initial Server directory structure
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  SYS$SYSDEVICE:.
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  SYS$SYSDEVICE:.
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  SYS$SYSDEVICE:.
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  SYS$SYSDEVICE:.
%VMSINSTAL-I-SYSDIR, This product creates system disk directory  SYS$SYSDEVICE:.
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named PCFS$ACCOUNT.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier PCFS$ACCOUNT value: [000360,000001] added to rights data base
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCFS$ACCOUNT.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCFS$ACCOUNT.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCFS$ACCOUNT.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named PCSA$RMI.
%UAF-I-ADDMSG, user record successfully added
%UAF-I-RDBADDMSGU, identifier PCSA$RMI value: [000360,000002] added to rights data base
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCSA$RMI.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCSA$RMI.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCSA$RMI.
%UAF-I-MDFYMSG, user record(s) updated
%VMSINSTAL-I-ACCOUNT, This installation updates an ACCOUNT named PCSA$RMI.
%UAF-I-MDFYMSG, user record(s) updated
```

```
%VMSINSTAL-I-ACCOUNT, This installation adds an identifier named PCFS$READ.
%UAF-I-RDBADDMSG, identifier PCFS$READ value: %X80010144 added to rights data base
%VMSINSTAL-I-ACCOUNT, This installation adds an identifier named PCFS$UPDATE.
%UAF-I-RDBADDMSG, identifier PCFS$UPDATE value: %X80010145 added to rights data base
%VMSINSTAL-I-ACCOUNT, This installation adds an identifier named NETBIOS$ACCESS.
%UAF-I-RDBADDMSG, identifier NETBIOS$ACCESS value: %X80010146 added to rights data base
%VMSINSTAL-I-ACCOUNT, This installation adds an identifier named PCFS$USER.
%UAF-I-RDBADDMSG, identifier PCFS$USER value: %X80010147 added to rights data base
%PCSA-I-CRE_PARAMS, Creating Service Parameter Database
%PCSA-I-CRE_PCFS_LOG, Creating PCFS_LOGICALS.COM
%PCSA-I-CRE_LAD_LOG, Creating LAD_LOGICALS.COM
%PCSA-I-INS_DCL, Installing DCL command: ADMINISTER/PCSA
%PCSA-I-DEF_OBJS, Defining DECnet objects PCFS,PCSA$RMI,PCX$SERVER,and PCSA$MAIL
%PCSA-I-SPECIFY, Specifying target directories for the appropriate files
 ******************************************************************************
 ************************POST-INSTALLATION CHECKLIST************************
 ******************************************************************************

     Configure the file server

     1) Type ADMIN/PCSA MENU
     2) Select Utility Options ->Configure Server Parameters
     3) Answer the configuration questions


     Start the file server using the specified transport(s):

        For DECnet,          @SYS$STARTUP:PCFS_STARTUP
        For TCP,             @SYS$STARTUP:PCFS_STARTUP TCP
        For DECnet and TCP,  @SYS$STARTUP:PCFS_STARTUP DECNET/TCP

     Start the disk server:  @SYS$STARTUP:LAD_STARTUP
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

        Starting Installation Verification Procedure
        for PATHWORKS for VMS V4.0 at  4-JAN-1991 11:48

        IVP Completed Successfully at  4-JAN-1991 11:48
        Installation of PCSA V4.0 completed at 11:48

        VMSINSTAL procedure done at 11:49
```

Sample Upgrade Installation

The following is a sample installation on a system that has a prior version of PATHWORKS for VMS installed.

```
$ @vmsinstal pcsa040 sys$manager

        VAX/VMS Software Product Installation Procedure V5.3


It is 4-JAN-1991 at 20:43.

Enter a question mark (?) at any time for help.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
        USER1
        DECW$WM_1
        USER1_SM1
        DECW$TE_1
        _TWA5:
        _TWA6:
        _TWA7:
* Do you want to continue anyway [NO]? yes
* Are you satisfied with the backup of your system disk [YES]?

The following products will be processed:
  PCSA V4.0

        Beginning installation of PCSA V4.0 at 20:43
```

```
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED , The product's release notes have been successfully moved
 to SYS$HELP.
%PCSA-I-CHK_NET, Checking if DECnet is running
%PCSA-I-CHK_DIRS, Checking directories for files that interfere with PATHWORKS
%PCSA-I-CHK_SERVERS, Checking if the servers are running on this system...
* Do you want to run the IVP after the installation [YES]?
* Do you want to purge files replaced by this installation [YES]?
%PCSA-I-CHK_PCFS_LOG, Checking PCFS_LOGICALS.COM for old values...

        Your current settings for PCFS$BUFFER_SIZE, PCFS$CACHE_SIZE,
        and PCFS$CACHE_OPEN_FILES may not be sufficient.

        Check the SYS$COMMON:[SYS$STARTUP]PCFS_LOGICALS.COM file and
        adjust your settings using the Configure Server Parameters option
        in the PCSA_MANAGER menu.

%PCSA-I-UPDATE_PCFS_LOG, Updating PCFS_LOGICALS.COM ...
%PCSA-I-CHK_LAD_LOG, Checking LAD_LOGICALS.COM for old values...
%SEARCH-I-NOMATCHES, no strings matched
%PCSA-I-VERSION, Checking for VMS version 5.3 or greater
%PCSA-I-FREEBLKS, Checking for 5200 free blocks
%PCSA-I-CHK_PARAMS, Checking SYSGEN parameters

            All questions have been answered.
            The installation of PATHWORKS for VMS V4.0
            will continue unattended.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...

%PCSA-I-DIRECTORY, Checking for [PCSA] on the system disk
%PCSA-I-OLDLADS, Checking for old LAD and LAST components
%PCSA-I-PCSA$LADMSG, Renaming LADDRIVER.EXE to .OLD
%PCSA-I-PCSA$LASTMSG, Renaming LASTDRIVER.EXE to .OLD
%PCSA-I-PCSA$LASTMSG, Renaming LASTCPHELP.HLB to .OLD
%PCSA-I-PCSA$LASTMSG, Renaming LASTCP.EXE to .OLD
%PCSA-I-PCFS_SERV_UPDATE, Converting the File Service Database ...
%PCSA-I-CONVLAD, Converting LAD$SERVICE_DATABASE ...
%PCSA-I-RENLAD, Renaming existing LAD$SERVICE_DATABASE.DAT to .OLD ...
%PCSA-I-INS_DCL, Installing DCL command: ADMINISTER/PCSA
%PCSA-I-DEF_OBJS, Defining DECnet objects PCFS,PCSA$RMI,PCX$SERVER,and PCSA$MAIL
%PCSA-I-SPECIFY, Specifying target directories for the appropriate files
******************************************************************************
************************POST-INSTALLATION CHECKLIST************************
******************************************************************************

     Configure the file server

    1) Type ADMIN/PCSA MENU
   2) Select Utility Options ->Configure Server Parameters
   3) Answer the configuration questions

     REBOOT your system to remove old LAD and LAST drivers from memory


Start the file server using the specified transport(s):

    For DECnet,          @SYS$STARTUP:PCFS_STARTUP
    For TCP,             @SYS$STARTUP:PCFS_STARTUP TCP
    For DECnet and TCP,  @SYS$STARTUP:PCFS_STARTUP DECNET/TCP

     Start the disk server:  @SYS$STARTUP:LAD_STARTUP
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

        Starting Installation Verification Procedure
        for PATHWORKS for VMS V4.0 at  4-JAN-1991 20:50

        IVP Completed Successfully at  4-JAN-1991 20:51
        Installation of PCSA V4.0 completed at 20:51

        VMSINSTAL procedure done at 20:51
```

C

Setting Up Security for DECnet

Setting up security is not a VMS server installation or postinstallation task. You set up security on the services you offer from the VMS server. If you are installing PATHWORKS for VMS Version 4.0, you set up services after you install the client software.

Setting Up Server Security

This section provides a very brief description of the type of security that is available to you when you set up disk and file services.

This section applies only to networks that use the DECnet transport.

You can restrict the number of simultaneous client connections to each service. By setting these restrictions, you limit access to DOS applications to ensure compliance with vendor licensing agreements.

You set up differently for disk and file services:

- You provide security for virtual disk services when you mount and offer those services. After you install the client software, you are ready to offer specific virtual disk services.

  You can control access to disk services by assigning passwords to users and by assigning read-only or read/write privileges to users. See *Guide to Setting Up a VMS System* and *VMS System Manager's Manual* for instructions.

- You can provide security for file services by controlling the User Authorization File (UAF) and Access Control List (ACL). You specify privileges assigned to each user for each service. Only users who provide the correct username-password combination can then access that service.

See *Server Administrator's Guide* for instructions on assigning passwords and privileges.

In addition, the file server supports VMS break-in detection and evasion procedures. To enable the file server to report any break-in attempt it detects, enter:

```
$   SET AUDIT/ALARM/ENABLE=(BREAKIN=ALL)
```

See the *Guide to VMS System Security* for detailed information on file protection features and system break-in evasion and detection.

Setting Up User Privileges

The VMS account of each user who needs to use the VMS server must have the TMPMBX and NETMBX privileges. Use the VMS authorize utility to determine whether users have the privileges they require.

To verify and change user account privileges:

1. Run AUTHORIZE by entering:

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

2. At the AUTHORIZE prompt (UAF>), use the SHOW command with an account name to check a particular account. For example, to display information about user account USER1, enter:

   ```
   UAF>  SHOW USER1
   ```

   A screen similar to the following is displayed:

```
Username:  User1                     Owner:  User1
Account:                             UIC:    [300,1] ([USER1])
CLI:      DCL                        Tables: DCLTABLES
Default:  SERVR5$DUB0:[USER1]
LGICMD:   LOGIN
Login Flags:  Defcli
Primary days:   Mon Tue Wed Thu Fri
Secondary days:                      Sat Sun
No access restrictions
Expiration:          (none)    Pwdminimum:  8   Login Fails: 0
Pwdlifetime:        180 00:00  Pwdchange:  22-AUG-1989 11:15
Last Login: 22-AUG-1989 09:32 (interactive), (none)(non-
interactive)
Maxjobs:         0  Fillm:        60  Bytlm:        36000
Maxacctjobs:     0  Shrfillm:      0  Pbytlm:           0
Maxdetach:       0  BIOlm:        18  JTquota:       1024
Prclm:          10  DIOlm:        18  WSdef:          256
Prio:            4  ASTlm:        80  WSquo:          512
Queprio:         0  TQElm:        50  WSextent:      2048
CPU:        (none)  Enqlm:       200  Pgflquo:      20000
Authorized Privileges:
  TMPMBX NETMBX
Default Privileges:
  TMPMBX NETMBX
Identifier                  Value         Attributes
  WRKGROUP                  %X8001000C    NORESOURCE NODYNAMIC
```

3 To change a privilege, use the MODIFY command at the UAF> prompt, using this format:

```
UAF>  MODIFY account-name
/DEFPRIV=privilege
```

Parameter	Description
account-name	Is the name of the user account.
privilege	Is the privilege you are granting to the account.

For example, to add the privileges TMPMBX and NETMBX to user account USER1 and exit from the utility, enter:

```
UAF>  MODIFY USER1
/DEFPRIV=(TMPMBX,NETMBX)
UAF>  EXIT
```

When you exit from the utility, the VMS system displays messages indicating whether or not changes were made.

4 Ask the user to log out and log in again for the new privileges to take effect.

D

Copying Release Notes Before Installation

This procedure takes about 20 minutes in addition to the time of running VMSINSTAL.

You can print out the Release Notes prior to starting the installation by copying them from the installation save set on the installation kit media and printing them.

NOTE

This procedure of copying the release notes from the kit before installation is presented as an alternate method.

Otherwise, you can print and display the release notes during installation from VMSINSTAL before deciding whether to proceed with an installation.

To print out the release notes prior to running VMSINSTAL:

1 Enter the following commands at the system prompt.

```
$ MOUNT device: PCSA
$ COPY device:PCSA040.A */LOG
$ BACKUP/SELECT=PCSA040.RELEASE_NOTES
PCSA040.A/SAVE */LOG
$ PRINT/QUE=valid_que PCSA040.RELEASE_NOTES
```

Parameter	Description
valid_que	Is ASCII (text) queue.
device	Is the name of the device where the media is mounted.

2 Dismount the tape and read the notes.

E

How to Use PCSA$CONFIG.COM Options

The SYS$STARTUP:PCSA$CONFIG options can assist you in setting the system parameters. The PCSA$CONFIG options are:

- Append PCFS$MODPARAMS.DAT changes to MODPARAMS.DAT
- AUTOGEN and reboot your system
- Configure cluster nodes

Sample Use of Option 1

Option 1 appends changes to your MODPARAMS.DAT file.

The output for a sample run of Option 1 is as follows:

```
 PATHWORKS for VMS Configuration procedure

This procedure will help you configure your machine and/or cluster
to run PATHWORKS for VMS

  1) Append PCFS$MODPARAMS.DAT changes to MODPARAMS.DAT

  2) AUTOGEN and REBOOT your system

  3) Configure Cluster Nodes

     - Create SYS$SPECIFIC:[PCSA] directory
     - Check directories for interfering files
     - Define/Set DECnet objects
     - Check system parameters
     - Define ADMIN/PCSA

  4) Exit

Select an option number?: 1

  Option 1: Append PCFS$MODPARAMS.DAT changes to MODPARAMS.DAT

Type SYS$SPECIFIC:[SYSEXE]PCFS$MODPARAMS.DAT?(<Y>/N): Y

MIN_SPTREQ = 3725 !Needed by PATHWORKS for VMS V4.0  8-JAN-1991 11:13
Enter <return> to continue:
```

```
Type SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT?(<Y>/N):
SCSNODE="SERVR1"
Enter <return> to continue:

Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT?(<Y>/N):
%APPEND-S-APPENDED, SYS$SPECIFIC:[SYSEXE]PCFS$MODPARAMS.DAT;2 appended to
SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT;10 (1 record)
Enter <return> to continue:

Type SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT?(<Y>/N):
SCSNODE="SERVR1"
MIN_SPTREQ=3725 !Needed by PATHWORKS for VMS V4.0 8-JAN-1991 11:13
Enter <return> to continue:

EDIT/EDT SYS$SPECIFIC:[SYEXE]MODPARAMS.DAT?(<Y>/N):

Opening SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT for editing...

Input file does not have standard text file format
    1       SCSNODE="SERVR1"
*exit
SYS$SPECIFIC:[SYSEXE]MODPARAMS.DAT;11 6 lines
```

Sample Use of Option 2

Option 2 is used to autogen and your reboot your system after you have appended changes to your MODPARAMS.DAT file. The output for a sample run of Option 2 is as follows:

```
Select an option number?: 2

Option 2: AUTOGEN and REBOOT your system
          by issuing the following command:
          @SYS$UPDATE:AUTOGEN GETDATA REBOOT NOFEEDBACK

Do you really want to AUTOGEN node SERVR1 (Y/<N>: Y

Enter <return> to display the main menu:

%AUTOGEN-I-BEGIN, GETDATA phase is beginning.
```

Sample Use of Option 3

Option 3 assists you in checking the parameters for the cluster nodes in a local area VAXcluster.

The output for a sample run of Option 3 is as follows:

```
$ set process/priv=all
$ @sys$startup:pcsa$config


 PATHWORKS for VMS Configuration procedure

This procedure will help you configure your machine and/or cluster
to run PATHWORKS for VMS

  1) Append PCFS$MODPARAMS.DAT changes to MODPARAMS.DAT

  2) AUTOGEN and REBOOT your system

  3) Configure Cluster Nodes
```

```
     - Create SYS$SPECIFIC:[PCSA] directory
     - Check directories for interfering files
     - Define/Set DECnet objects
     - Check system parameters
     - Define ADMIN/PCSA

  4) Exit

Select an option number?: 3

Option 3: Configure Cluster Nodes

Enter the node the kit was installed on
or QUIT to return to the main menu: SERVR1


%SYSMAN-I-ENV, current command environment:
        Individual nodes: SERVR1
        Username USER1     will be used on nonlocal nodes


Enter RETURN> to continue:


- Define/Set DECnet objects


Option 3: Configure Cluster Nodes

On the specified nodes:
- Create SYS$SPECIFIC:[PCSA] directory
- Check  directories for interfering files
- Define/Set DECnet objects
- Check System Parameters
- Define ADMIN/PCSA

Enter ALL for all nodes
   or Specific Nodes  For example, NODE1,NODE2,NODE3
   or QUIT to return to main menu: ALL
```

NOTE *Ignore any suggested changes to the installation node. The installation program has already verified the installation node.*

```
%SYSMAN-I-ENV, current command environment:
        Clusterwide on local cluster
        Username USER1     will be used on nonlocal nodes

%SYSMAN-I-OUTPUT, command execution on node SERVR1


Checking if the file and disk servers are running...

 The File Server is running ...


 The Disk Server is running ...


Please stop the above server(s)
System checks cannot be completed on node SERVR1

%SYSMAN-I-OUTPUT, command execution on node SERVR2
$ set noverify

Checking if the file and disk servers are running...

Checking SYS$SPECIFIC directories for files
that interfere with the installation and
running of PATHWORKS for VMS
```

```
    A check of the system shows that these files were found in
    SYS$SPECIFIC directories.
    PATHWORKS for VMS will not function properly until these files are
    removed.
    The unexpected files are:
SYS$SPECIFIC:[SYSLIB]PCDISKSHR.EXE;12
    These files are recorded in the
    SYS$MANAGER:PCSA$SYS_SPECIFIC.UNEXPECTED_FILES file
%SYSMAN-I-OUTPUT, command execution on node SERVR2
$ set noverify

Checking if the file and disk servers are running...

Checking SYS$SPECIFIC directories for files
that interfere with the installation and
running of PATHWORKS for VMS

Setting DECnet objects      ...
PCFS       object defined/set...
PCSA$RMI   object defined/set...
PCX$SERVER object defined/set...
PCSA$MAIL  object defined/set...

Checking system parameters  ...
*********************************************
********** SYSTEM REBOOT REQUIRED ************
*********************************************
Your SYSGEN parameter(s) need to be adjusted

1) Login into the SYSTEM account on node SERVR2
2) Run the PCSA$CONFIG command procedure by entering:
   @SYS$STARTUP:PCSA$CONFIG.COM <RETURN>
3) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
4) Select OPTION 2 AUTOGEN and REBOOT your system

%SYSMAN-I-OUTPUT, command execution on node SERVR3
$ set noverify

Checking if the file and disk servers are running...

Checking SYS$SPECIFIC directories for files
that interfere with the installation and
running of PATHWORKS for VMS

Setting DECnet objects      ...
PCFS       object defined/set...
PCSA$RMI   object defined/set...
PCX$SERVER object defined/set...
PCSA$MAIL  object defined/set...

Checking system parameters  ...
*********************************************
********** SYSTEM REBOOT REQUIRED ************
*********************************************
Your SYSGEN parameter(s) need to be adjusted

1) Login into the SYSTEM account on node SERVR3
2) Run the PCSA$CONFIG command procedure by entering:
   @SYS$STARTUP:PCSA$CONFIG.COM <RETURN>
3) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
4) Select OPTION 2 AUTOGEN and REBOOT your system

%SYSMAN-I-OUTPUT, command execution on node SERVR4
$ set noverify

Checking if the file and disk servers are running...

Checking SYS$SPECIFIC directories for files
that interfere with the installation and
running of PATHWORKS for VMS
```

```
Setting DECnet objects      ...
PCFS       object defined/set...
PCSA$RMI   object defined/set...
PCX$SERVER object defined/set...
PCSA$MAIL  object defined/set...

Checking system parameters  ...
*******************************************
********** SYSTEM REBOOT REQUIRED ***********
*******************************************
Your SYSGEN parameter(s) need to be adjusted

1) Login into the SYSTEM account on node SERVR4
2) Run the PCSA$CONFIG command procedure by entering:
   @SYS$STARTUP:PCSA$CONFIG.COM <RETURN>
3) Select OPTION 1 Append PCFS$MODPARAMS.DAT to MODPARAMS.DAT
4) Select OPTION 2 AUTOGEN and REBOOT your system
```

F

System Parameters for Installation

Appendix F explains the system parameters needed for the installation of PATHWORKS for VMS and how they are calculated.

NOTE *The parameters settings described in this appendix are based on formulas that are subject to change. Check the latest Release Notes or Update Release Notes for the latest formulas and parameter settings.*

Additional system parameters are required run the file server. These system parameters are documented in the PATHWORKS for VMS Release Notes.

Worksheet

The worksheet in Table F–1 provides spaces for you to record the current value and calculate the required value of each parameter affected by the installation. These calculations are explained in the sections that follow.

Table F–1 Worksheet: System Parameter Values for Installation

Parameter	Current Value	Minimum	Required Value
GBLPAGES			
GBLSECTIONS			
MAXBUF			
SCSNODE			
SCSSYSTEMID			
SYSMWCNT			

Checking Current Values

The VMS System Generation Utility (SYSGEN) allows you to tailor your system for a specific hardware and software configuration. Use the SYSGEN utility to determine the current value of each parameter and record that value on the worksheet in Table F–1.

Use the SYSGEN utility as follows:

1 Invoke the SYSGEN utility by entering:

```
$  SET DEFAULT SYS$SYSTEM
$  RUN SYSGEN
SYSGEN>
```

2 To determine the *current* value of each system parameter, enter:

```
SYSGEN>  SHOW parameter_name
```

Parameter	Description
parameter_name	Is the name of a specific SYSGEN parameter.

For example, to check the current value for MAXBUF, enter:

```
SYSGEN>  SHOW MAXBUF
```

3 Read the value from Current column. This column shows the current value of MAXBUF, which is the maximum number of bytes that can be transferred in one buffered input/output (I/O) request.

4 Record this value in the Current Value column of the worksheet.

5 Return to the VMS prompt by entering:

```
SYSGEN>  EXIT
$
```

Calculating Required Values

This section provides formulas you can use for checking system parameters affected by the installation.

You can record your system's required values on the worksheet in Table F–1:

- GBLPAGES

You need a minimum of 800 free, contiguous global pages

GBLPAGES is the number of global pages (global page table entries) allocated when the system boots. However, the value required for the VMS server is a minimum of 800 *free, contiguous* global pages, in addition to the number of global pages needed by the DCL table.

When PATHWORKS for VMS is installed, it adds a new command to the DCL tables. Adding this command requires the operating system to load a new DCL table, which results in the allocation of global pages.

To calculate the required value for GBLPAGES:

1. Determine the number of free, contiguous global pages (GBLPAGES) on your system, by entering:

```
$   WRITE SYS$OUTPUT F$GETSYI("CONTIG_GBLPAGES")
```

The screen displays a number, for example:

```
400
```

2. Determine the number of global pages (GBLPAGES) used by the current DCL table by entering:

```
$   INSTALL LIST SYS$LIBRARY:DCLTABLES /GLOBAL
```

In this example, the screen displays the following information:

```
DISK$VMSRL5:<SYS0.SYSCOMMON.SYSLIB>.EXE
   DCLTABLES;12     Open Hdr Shar          Lnkbl
  System Global Sections
DCLTABLES_001  (06000000)  PRM SYS
Pagcnt/Refcnt=336/336
```

The formula requires 800 or greater free and contiguous pages

3. Subtract the number of global pages used by the current DCL table from the number of free, contiguous global pages available on your system. The result must be 800 or greater, as indicated in the following formula:

```
(n - m) >= 800
```

Parameter	Description
n	Is the number of free contiguous global pages.
m	Is the number of GBLPAGES used by the current DCL table.

If the result is 800 or greater, you do not need to change this parameter value.

4 If (n - m) is less than 800, continue with:

```
x + (800 – (n – m))
```

Parameter	Description
x	Is the number of GBLPAGES in the ''Current'' column of the screen displayed by the SYSGEN SHOW command.

For example, if your system has 400 contiguous free global pages, the DCL table uses 336 global pages, and the current SYSGEN value of GBLPAGES is 11,900:

```
400 – 336 = 64

800 – 64  = 736

11,900 + 736 = 12,636
```

Because 64 is less than 800, you need (800 - 64), or 736, global pages in addition to the current number. The *required* value of GBLPAGES in this example is 12,636. Calculate the required value for your system and record it on the worksheet in Table F–1.

Note *For good system management, always keep at least 500 free global pages on your system. If you increase GBLPAGES by only the amount required for the PATHWORKS for VMS, you may not have any free global pages left on your system.*

The formula requires 14 GBLSECTIONS that are not currently in use.

- GBLSECTIONS

  GBLSECTIONS is the number of global section descriptors allocated when the system boots. The value required is 14 GBLSECTIONS that are not currently in use. To calculate the required value for GBLSECTIONS:

  1 Determine the number of GBLSECTIONS currently in use by entering:

  ```
  $   INSTALL LIST /GLOBAL /SUMMARY
  ```

  In this example, the screen displays the following information:

  ```
  Summary of Local Memory Global Sections
  150 Global Sections Used, 9654/10346
  Global Pages Used/Unused
  ```

2 Use the following formula:

```
n – m >= 14
```

Parameter	Description
n	Is the number of GBLSECTIONS in the ''Current'' column of the screen displayed by the SYSGEN SHOW command.
m	Is the number of GBLSECTIONS currently in use.

If the result is 14 or greater, you do not need to change this parameter value.

3 If (n - m) is less than 14, continue with:

```
m + (14 – (n – m))
```

For example, if your system has 150 GBLSECTIONS, and 143 of them are currently in use:

```
150 – 143 = 7

14 – 7 = 7

150 + 7 = 157
```

Because 7 is less than 14, you need (14 - 7), or 7, additional global sections. The *required* value of GBLSECTIONS in this example is 157. Calculate the required value for your system and record it on the worksheet in Table F–1.

Note *For good system management, always keep at least 100 free global sections on your system. If you increase GBLSECTIONS by only the amount required for the PATHWORKS for VMS , you will not have any free global sections left on your system.*

- MAXBUF

  MAXBUF is the maximum size of buffered I/O transfer for use with the local area system transport control program (LASTCP) and other utilities.

  The required value for MAXBUF is a minimum of 2300.

- SCSNODE is the Systems Communications Service system name. It should be the same as the DECnet node name for the server. To find the DECnet node name, enter:

```
$   MCR NCP SHOW EXECUTOR

Node Volatile Summary as of 10-JAN-1991 11:42:35

Executor node = 9.1 (SERVR1)

State                     = on
Identification            = DECnet-VAX V5.3-2,  VMS V5.3-2
Active links              = 4
```

The name must be a maximum of six ASCII characters.

NOTE *If SCSNODE is already defined, do not change it. If you do , existing printer and batch queues may stop working because the job controller uses SCSNODE when associating execution queues to systems. Your START/QUEQUE commands for execution queues should include the /ON qualifier.*

- SCSSYSTEMID is unique identifier of each system.. It should be the same as DECnet node name for the server.

  Calculate the required value of SCSSYSTEMID by using the formula:

  ```
  (n * 1024) + nn
  ```

Parameter	Description
n	is the DECnet area number.
nn	is the DECnet-VAX node number.

To obtain your DECnet address and node number, enter for example:

```
$   MCR NCP SHOW SERVR2


Executor node = 8.760 (SERVR2)

State                     = on
Identification            = DECnet-VAX V5.3-2,  VMS V5.3-2
Active links              = 4
```

The number preceding the decimal is the DECnet address number; for example, 8. The number following the decimal is the DECnet-VAX node number; for example, 760. Your DECnet address, 8.760, is applied to the formula:

```
(8 * 1024) + 760 = 8952
```

The required value for SCSSYSTEMID in this example is 8952. Calculate the required value for your system and record it on the worksheet in Table F–1.

- SYSMWCNT

  SYSMWCNT sets the quota for the size of the system working set. For every 128 pages you add to GBLPAGES, you must increase the value of the SYSGEN parameter SYSMWCNT by 1.

  To calculate the required value for GBLPAGES, use the formula:

```
n + (m / 128) + 1
[(m/128) is rounded off.]
```

Parameter	Description
n	Is the current value of SYSMWCNT.
m	Is the number of GBLPAGES you are adding.

  For example, if you increase GBLPAGES by 300 pages and the current value of SYSMWCNT is 753:

```
753 + (300 / 128) + 1
753 + 2 + 1 = 756
```

  The required value of SYSMWCNT in this example is 756. Calculate the required value for your system and record it on the worksheet in Table F–1.

Glossary

access (v.)

To use a resource, such as a printer, directory, or disk drive.

access control (n.)

The mechanism for validating the right to use a resource or service, such as a connection, logon, or file access, stored on or connected to a server. A user name and password combination is the most common means of access control.

access control entry (ACE) (n.)

In an access control list (ACL), one identifier and its associated access rights to a service or resource. See also *access control list.*

access control list (ACL) (n.)

In the VMS environment, a list that defines users' access rights to use a resource or service.

account (n.)

An account allows users access to a computer. It includes the user's name, other identifiers, a list of services and privileges the user is allowed, and files belonging to the user.

boot media (n.)

The diskette, hard disk, or virtual disk that contains the startup files. See also *key diskette* and *network key disk.*

common file service (n.)

A file service used to store files that many users can share and update. An example of a common file service is PCCOMMON.

configuration (n.)

The set of hardware, hardware options, and software on a computer or network.

configure (v.)

To select, install, and modify hardware and software for a computer or network.

DECnet (n.)

Digital networking software that runs on server and client nodes in both local area and wide area networks. With DECnet, different types of computers that have different operating systems can be connected and users can access information and services on a remote computer over the network connections.

A networking protocol. *See also, TCP/IP.*

DECnet link (n.)

A virtual or logical connection between a client and a server or between two nodes in the network.

DECnet node database (n.)

The file that contains information about the network nodes with which a personal computer communicates.

default (n.)

The value assumed by a program if not supplied by a user.

device (n.)

A hardware component that performs a specific function. A keyboard is an input device; a printer is an output device; a terminal is an input/output device. See also *logical device*.

device name

Identification of a physical device (for example MUA0) or a logical name (for example, SYS$OUTPUT) that is equated to a physical device name.

default disk

The disk from which the system reads and to which the system writes, by default, all files that you create. In the installation you either specify a disk for the file and disk servers or accept the default.

disk server (n.)

A network program that allocates space on a VMS disk where DOS users can store, create, and maintain DOS files. This space is called a *virtual disk*. Disk services are available only on VMS servers accessed with DECnet transport. See also *virtual disk.*

file server (n.)

A network program that lets a client connect to available file and printer services.

file service (n.)

Directories, subdirectories, and files on a file server. Users can use network commands from a client to access a file service and then store and retrieve data. A file service provides read/write access to applications and services for many users simultaneously.

group (n.)

In system administration, a collection of users who share the same access to file services. Once users have VMS accounts, they can be assigned to a group. With groups, the system administrator can assign and modify access for all users in the group with one command.

group code number (n.)

A number or set of numbers used by the LAT protocol to identify network resources and to control access to those resources. Group codes can be used to assign LAT resources to a specific set of users and to balance the load between computers offering identical services.

LAT (n.)

Local Area Transport. A communications protocol that operates on a local area network (LAN) to permit communication between nodes and other devices such as terminals, printers, and modems. See also *SETHOST*.

LATCP (n.)

LAT Control Program. A utility that allows you to manage LAT services from the client.

LAT node (n.)

A computer that has LAT software and can offer services, access services, or both. A LAT node can be either a terminal server or a service node.

LAT service(n.)

Any service offered on the LAT; for example, a terminal service is the most common type.

logical (adj.)

Nonphysical. For example, logical can refer to a name in the software that represents a hardware device. See also *logical device.*

logical device (n.)

A software name that identifies a hardware device for use by an application or program.

logical name

Substitute character string used to refer to files or devices by other than their original names.

logical name table

A table that contains a set of logical names and their equivalence names for a particular process, a particular group, or the system.

mount (v.)

To make a virtual disk available as a disk service to users on a network.

network key disk (n.)

A virtual disk that downline loads an operating system and network startup information to a client over the network. A network key disk is a type of boot media that can be created. See also *boot media* .

parameter (n.)

A variable that is given a specific value that is passed to a program or command before execution. For example, the parameter can provide a file specification, option, or device name.

process identification (PID)

A 32-bit binary value that uniquely identifies a process. Each process has a process identification and a process name.

router (n.)

A server or a node that can send and receive data packets and direct the packets to other nodes.

save set

The format that the BACKUP utility stores files in. PATHWORKS for VMS is shipped in this format.

server (n.)

A computer running PATHWORKS for VMS software that offers file, printer, or disk services to clients.

service (n.)

The availability of files, devices, or disks that let clients access resources on the network or on a server. A service enables a client to use resources on a printer, on the network, or on a server. See also *file service*, *printer service*, and *virtual disk service*.

swap file (n.)

A temporary file created by the virtual memory manager. When the memory requirements of an application exceed the physical memory on the personal computer, the virtual memory manager moves data that is not being accessed to a temporary swap file on one of your personal computer drives.

system startup file (n.)

A file that runs automatically when the operating system starts all the system software defined in the file.

TCP/IP

Transmission Control Protocol/Internet Protocol. A set of protocols that govern the transport of information between computers and networks of dissimilar types. The Internet is a group of networks that includes regional networks, military networks, and local networks at universities and commerical institutions. An alternative to DECnet transport protocols. *See also DECnet.*

transport (n.)

Network software that routes user data to its destination and controls the flow of data.

user authorization file (UAF) (n.)

A VMS file that contains information about each user's access rights. See also *access control list.*

user identification code (UIC) (n.)

A name and/or number that identifies a specific account, the account owner, and a group to which the owner or account belongs. The UIC specifies the type of access (read, write, execute, or delete) for files, mail, and common system commands the owner of the account is permitted. See also *access control*.

user name (n.)

The name a user types when logging in to the system. A combination of the user name and password uniquely identifies a user account to the system. See also *password*.

virtual disk (n.)

Space the disk server program sets aside on a VMS disk. The virtual disk, actually a VMS container file, functions like a DOS-formatted disk. Users can connect to the virtual disk through a DOS drive and can store, create, and maintain DOS files.

virtual disk service (n.)

The availability of a virtual disk to clients over the network. At a client, users can make use of a virtual disk service with network commands and can then store and retrieve data. A disk server makes a virtual disk service available to clients.

VMS server (n.)

A VAX or MicroVAX computer running PATHWORKS for VMS, the VMS operating system and PATHWORKS for VMS server software that offers network resources such as files, routers, remote printing, and applications to clients.

volume name (n.)

In VMS mass storage media such as a disk pack or magnetic tape. The identifier for the volume which is the largest logical unit of file structure for the contents of the media.

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