This guide explains how to install and configure the PATHWORKS for OpenVMS (Advanced Server) software, including the standalone License Server and external authentication software, and the Upgrade utility.

Revision/Update Information: This guide supersedes the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Installation and Configuration Guide, Version 6.0B.

Operating System: OpenVMS Alpha Version 6.2, 7.2-1, 7.2-2, 7.3
OpenVMS VAX Version 6.2, 7.2, 7.3

Software Version: PATHWORKS V6.1 for OpenVMS (Advanced Server)
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ZK6555

The PATHWORKS for OpenVMS (Advanced Server) documentation set is available on CD-ROM.

This document was prepared using DECdocument, Version 3.3-1b.
# Contents

**Preface** .................................................... xi

1 Before You Install PATHWORKS Advanced Server

1.1 About the PATHWORKS for OpenVMS Software Kit ................. 1–1

1.1.1 About the PATHWORKS for OpenVMS (NetWare) Server ........ 1–2

1.2 If You Are Upgrading from PATHWORKS (LAN Manager) ........... 1–2

1.3 Installing DECprint Software .................................. 1–2

1.4 About Licensing ............................................. 1–3

1.4.1 License Requirements .................................. 1–3

1.4.2 About the License Server ................................ 1–3

1.5 About External Authentication ................................ 1–4

1.6 Reading the Release Notes ................................... 1–5

1.6.1 How to Access the Release Notes ........................... 1–5

1.7 Using the Installation Checklist ............................... 1–6

1.8 Requirements for Installing PATHWORKS Advanced Server Software ........................................... 1–6

1.8.1 Hardware Requirements .................................... 1–6

1.8.2 Software Requirements ................................... 1–6

1.8.3 Supported Client Software ................................ 1–7

1.8.4 Memory Requirements .................................... 1–7

1.9 Preinstallation Tasks ......................................... 1–7

1.9.1 Step 1: Check the Part Listing ............................. 1–9

1.9.2 Step 2: Check the Network Hardware ....................... 1–9

1.9.3 Step 3: Log In to the SYSTEM Account .................... 1–9

1.9.4 Step 4: Check the Required Software ....................... 1–9

1.9.5 Step 5: Print and Read the Release Notes .................... 1–10

1.9.6 Step 6: Check System Parameters ......................... 1–10

1.9.7 Step 7: Check ENQLM Process Quota ....................... 1–13

1.9.8 Step 8: Back Up the System ............................... 1–14

1.9.9 Step 9: Check Disk Space Requirements .................... 1–14

1.9.10 Step 10: Check the Queue Manager ....................... 1–14

1.9.11 Step 11: Check Time Zone and TDF ....................... 1–15
1.9.12 Step 12: Check DECnet Status ........................................ 1–15
1.9.12.1 Checking DECnet (Phase IV) Status ................................ 1–16
1.9.12.2 Checking DECnet-Plus Status .................................... 1–16
1.9.13 Step 13: Check TCP/IP Status ...................................... 1–16
1.9.14 Step 14: Check for Existing OpenVMS Server Images and Files ................................................................. 1–17
1.9.15 Step 15: Check OpenVMS Cluster Configuration ............ 1–18
1.10 Next Step ........................................................................ 1–19

2 Installing the PATHWORKS Advanced Server

2.1 About the Installation Procedure ........................................ 2–1
2.1.1 What is VMSINSTAL? .................................................... 2–1
2.1.2 PATHWORKS Advanced Server Installation Kit ............... 2–2
2.1.3 What VMSINSTAL Does .............................................. 2–2
2.2 Installing the Server .......................................................... 2–2
2.2.1 Before You Start VMSINSTAL ...................................... 2–2
2.2.2 How to Respond to Prompts .......................................... 2–5
2.2.3 How to Start VMSINSTAL ............................................ 2–5
2.2.4 What To Do After the Installation Completes ................. 2–17
2.3 Troubleshooting Installation Problems ................................. 2–18
2.3.1 Installing PATHWORKS Advanced Server on a System Running Another Advanced Server Image .................. 2–18
2.3.2 Installing the PATHWORKS Advanced Server on a System with the NetWare Server ........................................ 2–18
2.3.3 Installing PATHWORKS Advanced Server on a System with PATHWORKS (LAN Manager) ..................... 2–19
2.3.4 Installing the Standalone License Server on a System Where the PATHWORKS Advanced Server Has Been Installed 2–19
2.3.5 Installing the External Authentication Software .............. 2–19
2.4 Next Steps ....................................................................... 2–20

3 Configuring the PATHWORKS Advanced Server

3.1 About the Advanced Server Configuration Procedure .......... 3–1
3.1.1 What the Configuration Procedure Does ....................... 3–2
3.2 Before You Start the Advanced Server Configuration Procedure ............................................................... 3–3
3.2.1 On What OpenVMS Disk Device Do You Want to Store the Advanced Server Data Files? .............................. 3–3
3.2.2 Do You Want to Change the System Configuration Parameters Now? .......................... 3–4
3.2.2.1 Configuring Transports for a Backup Domain Controller or Member Server .................. 3–4
3.2.3 Do You Want to Change Any of the Server Configuration Settings? ............................ 3–7
3.2.4 What Do You Want the Administrator Account Password to Be? .................................. 3–9
3.2.5 Are You Going to Supply Account/Password Information? ............................................ 3–10
3.2.6 What Is the Domain Administrator Password? ............................................................. 3–10
3.2.7 Do You Want to Enter a New Administrator Account Password? ............................... 3–11
3.2.8 Do You Want to Start the Server? .................................................................................... 3–11
3.3 How to Start the Advanced Server Configuration Procedure ........................................... 3–11
3.4 How to Respond to Advanced Server Configuration Prompts .......................................... 3–12
3.5 How to Change Default Configuration Settings ................................................................... 3–14
3.6 Configuring the Advanced Server Domain Role ................................................................. 3–16
3.6.1 Configuring the Advanced Server as a Member Server .................................................. 3–19
3.6.1.1 Configuring a New PATHWORKS Advanced Server as a Member Server .................... 3–20
3.6.1.2 Configuring an Existing PATHWORKS Advanced Server BDC As a Member Server ........ 3–22
3.7 Troubleshooting Configuration Procedure Problems .......................................................... 3–23
3.7.1 Ensuring Sufficient Resources to Support Clients .......................................................... 3–24
3.7.2 If Problems Occur When Reconfiguring the Advanced Server ........................................ 3–24
3.8 The Advanced Server Network Adapter .............................................................................. 3–25
3.8.1 Manually Defining the Network Adapter ........................................................................ 3–25
3.8.2 What to Do If the Network Adapter Is Not Found .......................................................... 3–26
3.9 Next Steps ......................................................................................................................... 3–27

4 Configuring and Starting the Standalone License Server

4.1 About the License Server .................................................................................................. 4–1
4.2 Before You Begin to Configure the Standalone License Server ...................................... 4–2
4.3 Configuring the Standalone License Server ...................................................................... 4–2
4.4 Configuring the Transports .............................................................................................. 4–3
4.5 How to Respond to License Server Configuration Prompts ............................................ 4–3
4.6 How to Start the Standalone License Server ..................................................................... 4–5
4.6.1 How to Start the License Server Manually ...................................................................... 4–5
4.6.2 How to Start the License Server Automatically ............................................................. 4–5
4.6.3 How to Start the License Server in an OpenVMS Cluster ............................................... 4–6
5 After You Install the PATHWORKS Advanced Server

5.1 Before You Begin Postinstallation Tasks ........................................... 5–1
5.2 Verifying the PATHWORKS for OpenVMS (Advanced Server) Installation .................................................. 5–2
5.3 Starting the PATHWORKS Advanced Server .............................. 5–3
  5.3.1 When to Start the PATHWORKS Advanced Server ............ 5–3
  5.3.2 What the Startup Procedure Does ........................................ 5–4
  5.3.3 How to Start the PATHWORKS Advanced Server Manually ................................................................. 5–4
  5.3.4 How to Start the PATHWORKS Advanced Server Automatically .............................................................. 5–5
  5.3.5 How to Start the PATHWORKS Advanced Server in an OpenVMS Cluster ............................................. 5–5
  5.3.6 Troubleshooting the Startup ..................................................... 5–6
5.4 Stopping the PATHWORKS Advanced Server ............................ 5–6
  5.4.1 When to Stop the PATHWORKS Advanced Server ............ 5–7
  5.4.2 How to Stop the PATHWORKS Advanced Server ............... 5–7
  5.4.3 How to Stop the PATHWORKS Advanced Server on System Shutdown .................................................... 5–7
5.5 How to Define PATHWORKS Advanced Server Commands When You Log In .................................................... 5–7
5.6 Setting Up External Authentication ............................................ 5–8
  5.6.1 Setting Up External Authentication in OpenVMS Clusters ................................................................. 5–8
  5.6.2 Requirement for External Authentication Over DECnet-Plus ................................................................. 5–10
  5.6.3 Configuring the Server Capacity for External Authentication ................................................................. 5–12
  5.6.4 Bypassing External Authentication When the Network Is Down ................................................................. 5–13
  5.6.5 Disabling External Authentication ......................................... 5–13
5.7 Installing Optional Server Administration Tools .......................... 5–14

6 Implementing a Wide Area Network

6.1 Enabling Wide Area Networking .................................................. 6–1
6.2 Using the LMHOSTS File for Wide Area Networking .................. 6–2
  6.2.1 Setting up a TCP/IP Wide Area Network ......................... 6–2
  6.2.2 The LMHOSTS Directory ....................................................... 6–3
  6.2.3 LMHOSTS File Syntax ......................................................... 6–3
  6.2.4 Managing the LMHOSTS File .............................................. 6–6
  6.2.5 Using the LMHOSTS Log File .............................................. 6–7
6.3 Using WINS in a Wide Area Network .......................... 6–7
6.3.1 Setting up WINS Support for OpenVMS Clusters ........... 6–8
6.4 Using DNS in a Wide Area Network ............................ 6–8

7 Removing PATHWORKS Advanced Server Software
7.1 PATHWORKS Advanced Server Deinstallation Command
   Procedure ........................................... 7–2
7.1.1 Using the PATHWORKS Advanced Server Deinstallation
   Procedure ........................................ 7–3
7.1.2 Sample PATHWORKS Advanced Server Deinstallation
   Procedure ........................................ 7–3
7.2 Removing the PATHWORKS NetWare Server .................. 7–4
7.2.1 Sample NetWare Server Deinstallation Procedure ........... 7–5

A Installation and Upgrade Checklist

B Sample Complete Server Installation and Configuration
   B.1 Sample Server Installation .................................. B–1
   B.2 Sample Server Configuration .............................. B–4

C Sample Standalone License Server Installation and
   Configuration
   C.1 Sample Standalone License Server Installation .............. C–1
   C.2 Sample Standalone License Server Configuration .......... C–3

D Upgrade Utility Installation
   D.1 Installing the Upgrade Utility ............................. D–1
   D.2 Sample Upgrade Utility Installation ....................... D–1

E Sample External Authentication Installation
   E.1 Sample External Authentication Software Installation ...... E–1
PATHWORKS Advanced Server Files and On-Disk Structure

F.1 PATHWORKS Advanced Server Files ....................................... F–1
F.2 PATHWORKS Advanced Server On-Disk Structure .............. F–11

PATHWORKS Advanced Server Logical Names

Index

Examples

2–1 Sample Installation Procedure—Part 1 .......................... 2–7
2–2 Sample Installation Procedure—Part 2 .......................... 2–8
2–3 Sample Installation Procedure—Part 3 .......................... 2–9
2–4 Sample Installation Procedure—Part 4 .......................... 2–11
2–5 Sample Installation Procedure—Part 5 .......................... 2–12

Figures

F–1 PATHWORKS Advanced Server On-Disk Structure
Diagram ................................................................................. F–12

Tables

1–1 Preinstallation Checklist .................................................. 1–8
1–2 GBLPAGES Parameter Minimum Value ......................... 1–10
1–3 GBLSECTIONS Parameter Minimum Value ................... 1–11
1–4 PROCSECTCNT Parameter Minimum Value ................. 1–12
2–1 Installation Questions .................................................... 2–13
3–1 PATHWORKS Advanced Server Configuration Prompts .... 3–12
3–2 Configuration Settings .................................................. 3–15
3–3 Advanced Server Roles in Different Domain Types ......... 3–17
3–4 Methods for Changing Server Roles .............................. 3–18
3–5 OpenVMS Network Adapter Logicals ............................ 3–25
3–6 Undefined Adapter Messages .......................... 3–27
4–1 License Server Configuration Prompts ........................... 4–4
5–1 Steps That Must Be Completed Before Postinstallation .... 5–2
5–2 IVP Indications and Steps You Should Take .............. 5–3
<table>
<thead>
<tr>
<th>Page</th>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>5–3</td>
<td>Starting the Server in an OpenVMS Cluster</td>
<td>5–5</td>
</tr>
<tr>
<td>7–1</td>
<td>PWRK$DEINSTAL Prompts</td>
<td>7–3</td>
</tr>
<tr>
<td>7–2</td>
<td>PWVN$DEINSTAL Prompts</td>
<td>7–5</td>
</tr>
<tr>
<td>A–1</td>
<td>Installation and Upgrade Checklist</td>
<td>A–2</td>
</tr>
<tr>
<td>F–1</td>
<td>Files Installed for the PATHWORKS Advanced Server</td>
<td>F–1</td>
</tr>
<tr>
<td>G–1</td>
<td>PATHWORKS Advanced Server Logical Names</td>
<td>G–1</td>
</tr>
</tbody>
</table>
Preface

This guide explains how to install and configure the following PATHWORKS servers:

• PATHWORKS for OpenVMS (Advanced Server) file and print server
• PATHWORKS standalone License Server
• Upgrade utility only
• External authentication software only

Intended Audience

This guide is written for OpenVMS system managers and network server administrators. It assumes you are familiar with the following aspects of the Compaq OpenVMS operating system:

• Digital Command Language (DCL)
• A text editor, such as EDT or EVE
• VMSINSTALL command procedure

This guide also assumes that you are familiar with basic Advanced Server and networking concepts.

Document Structure

The following list can help you find information in this guide:

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 1</td>
<td>Describes prerequisites for the installation procedure</td>
</tr>
<tr>
<td>Chapter 2</td>
<td>Describes the installation procedure</td>
</tr>
</tbody>
</table>
### Chapter Description

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter 3</td>
<td>Describes the configuration procedure for the PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>Chapter 4</td>
<td>Describes the configuration procedure for the standalone License Server</td>
</tr>
<tr>
<td>Chapter 5</td>
<td>Describes postinstallation tasks, such as running the Installation Verification Procedure and starting the server independent of the installation and configuration procedures</td>
</tr>
<tr>
<td>Chapter 6</td>
<td>Describes how to set up Wide Area Networks</td>
</tr>
<tr>
<td>Chapter 7</td>
<td>Describes how to remove the PATHWORKS Advanced Server from your system</td>
</tr>
<tr>
<td>Appendix A</td>
<td>Provides a checklist of installation and configuration tasks; you can photocopy Appendix A, Installation and Upgrade Checklist, and use it as a checklist as you read this guide</td>
</tr>
<tr>
<td>Appendix B</td>
<td>Shows a sample installation and configuration procedure for the PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>Appendix C</td>
<td>Shows a sample installation and configuration procedure for the standalone License Server</td>
</tr>
<tr>
<td>Appendix D</td>
<td>Shows a sample installation procedure for the Upgrade utility</td>
</tr>
<tr>
<td>Appendix E</td>
<td>Shows a sample installation procedure for external authentication software only</td>
</tr>
<tr>
<td>Appendix F</td>
<td>Lists the files that are installed with PATHWORKS Advanced Server and shows the on-disk structure</td>
</tr>
<tr>
<td>Appendix G</td>
<td>Lists the logical names created for the PATHWORKS Advanced Server</td>
</tr>
</tbody>
</table>

### Related Documents

The following manuals provide more information about topics discussed in this guide:
Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide
Explains how to upgrade a PATHWORKS (LAN Manager) server to PATHWORKS V6 for OpenVMS (Advanced Server)

Compaq Advanced Server for OpenVMS Concepts and Planning Guide
Provides an overview of and introduction to the PATHWORKS Advanced Server software and associated networking concepts for system administrators and operators

Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator's Guide
Explains how to manage and customize the PATHWORKS Advanced Server software

Provides command syntax descriptions for all ADMINISTER commands and NET command equivalents

Compaq Advanced Server for OpenVMS Guide to Managing Advanced Server Licenses
Describes the License Server software and how to manage PATHWORKS for OpenVMS (Advanced Server) licenses

The following table lists related OpenVMS documents.

<table>
<thead>
<tr>
<th>OpenVMS Document</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>OpenVMS Version 7.x New Features and Documentation Overview Manual</td>
<td>Describes the new features of the OpenVMS software and provides an overview of the documentation that supports it</td>
</tr>
<tr>
<td>OpenVMS Alpha Version 7.x Upgrade and Installation Manual</td>
<td>Describes how to install the OpenVMS Alpha system software</td>
</tr>
<tr>
<td>OpenVMS VAX Version 7.x Upgrade and Installation Manual</td>
<td>Describes how to install the OpenVMS VAX system software</td>
</tr>
<tr>
<td>OpenVMS System Manager's Manual</td>
<td>A task-oriented guide (in two volumes) to managing an OpenVMS system; describes how to set up the required system services</td>
</tr>
<tr>
<td>OpenVMS System Management Utilities Reference Manual</td>
<td>A reference guide (in two volumes) to the utilities and tools used in managing an OpenVMS system</td>
</tr>
<tr>
<td>OpenVMS License Management Utility Manual</td>
<td>Explains how to load and manage license Product Authorization Keys (PAKs)</td>
</tr>
<tr>
<td>OpenVMS Guide to System Security</td>
<td>Describes the system security features of OpenVMS, including procedures for enabling external authentication</td>
</tr>
</tbody>
</table>

For additional information about the OpenVMS products and services, access the following OpenVMS World Wide Web address:
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          110 Spit Brook Rd.
          Nashua, NH 03062-2698

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http://www.openvms.compaq.com/

If you need help deciding which documentation best meets your needs, call 800-282-6672.

Conventions

The term PATHWORKS Advanced Server is used in this guide to refer to the PATHWORKS for OpenVMS (Advanced Server) file and print server. Mentions of Compaq OpenVMS file and print servers refers to the PATHWORKS family of file and print servers, including PATHWORKS (LAN Manager), PATHWORKS for OpenVMS (NetWare), PATHWORKS for OpenVMS (Advanced Server), and the Advanced Server for OpenVMS.

The following conventions are used in the PATHWORKS Advanced Server documentation:

<table>
<thead>
<tr>
<th>Convention</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECnet</td>
<td>Applies to both DECnet Phase IV and DECnet-Plus, unless otherwise specified.</td>
</tr>
<tr>
<td>Convention</td>
<td>Meaning</td>
</tr>
<tr>
<td>------------</td>
<td>---------</td>
</tr>
<tr>
<td>Italic</td>
<td>The use of italic text indicates a placeholder for information or parameters that you must provide. For example, if the procedure asks you to type file name, you must type the actual name of a file. Italic text also indicates new terms and the titles of other documentation referenced.</td>
</tr>
</tbody>
</table>

**monospace**  
The use of monospace text indicates actual commands and characters that you enter, and the system display.

**Note**  
The use of Note provides information of special importance.

**Caution**  
The use of Caution provides information to avoid damaging software or hardware.

**Warning**  
The use of Warning provides information that is essential to people's safety.

...  
A horizontal ellipsis following an entry in a command line indicates that the entry or a similar entry can be repeated any number of times. An ellipsis following a file name indicates that additional parameters, values, or information can be entered.

. . .  
A vertical ellipsis in an example indicates that not all the data is shown.

Ctrl/x  
While you hold down the Ctrl key, press another key or a pointing device button.

Return or Enter  
Return or Enter in text indicates where you should press the Return or Enter key to execute a command or terminate a sequence. This key is labeled Return or Enter, depending on your keyboard.

Tab  
In examples, a key name enclosed in a box indicates that you press a key on the keyboard. (In text, a key name is not enclosed in a box.) In the HTML version of this document, this convention appears as brackets, rather than a box.

PF1 x  
A sequence such as PF1 x indicates that you must first press and release the key labeled PF1 and then press and release another key or a pointing device button.
Before You Install PATHWORKS Advanced Server

This chapter describes the hardware and software you must have and the tasks you need to complete before you install PATHWORKS Advanced Server software.

This chapter consists of the following sections:

• Section 1.1, About the PATHWORKS for OpenVMS Software Kit
• Section 1.2, If You Are Upgrading from PATHWORKS (LAN Manager)
• Section 1.3, Installing DECprint Software
• Section 1.4, About Licensing
• Section 1.5, About External Authentication
• Section 1.6, Reading the Release Notes
• Section 1.7, Using the Installation Checklist
• Section 1.8, Requirements for Installing PATHWORKS Advanced Server Software
• Section 1.9, Preinstallation Tasks
• Section 1.10, Next Step

1.1 About the PATHWORKS for OpenVMS Software Kit

The PATHWORKS for OpenVMS (Advanced Server) kit contains the software required to run the following software installation options:

• The complete PATHWORKS Advanced Server file and print server software, including the License Server, external authentication software, and Upgrade utility.
• The standalone License Server
Before You Install PATHWORKS Advanced Server

1.1 About the PATHWORKS for OpenVMS Software Kit

- The standalone external authentication software
- The Upgrade utility

The Upgrade utility helps you migrate from PATHWORKS (LAN Manager) to PATHWORKS V6 for OpenVMS (Advanced Server).

1.1.1 About the PATHWORKS for OpenVMS (NetWare) Server

The PATHWORKS for OpenVMS (NetWare) server is no longer supported. PATHWORKS for OpenVMS (Advanced Server) cannot be installed on a system where the PATHWORKS for OpenVMS (NetWare) server is installed. If the installation procedure finds the PATHWORKS for OpenVMS (NetWare) server, it optionally invokes the PATHWORKS for OpenVMS (NetWare) removal procedure (PWVNSDEINSTAL), to remove the NetWare server software before installing the PATHWORKS Advanced Server software. For more information about the NetWare server removal procedure, refer to Section 7.2, Removing the PATHWORKS NetWare Server.

If your clients continue to depend on NetWare software to connect to the system, or if you need the IPX/SPX transport for any reason, you should designate a system to run the PATHWORKS for OpenVMS (NetWare) server.

1.2 If You Are Upgrading from PATHWORKS (LAN Manager)

If you have PATHWORKS (LAN Manager) installed, you must install the new PATHWORKS Advanced Server. You can choose to install just the Upgrade utility initially, and install the PATHWORKS Advanced Server later. Refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide for more information.

1.3 Installing DECprint Software

DECprint Supervisor for OpenVMS (DCPS) is a printing system that provides queue management and printing features for PostScript printers. To share a PostScript printer, selected PostScript printers might require use of the DECprint Supervisor for OpenVMS (DCPS) software for communication with the printers over DECnet or TCP/IP.

If you plan to use DECPrint Supervisor for OpenVMS on your system, Compaq recommends that you install it before installing the Advanced Server. You must reboot the system after installing the DECPrint software. You can perform the reboot as part of the DECPrint Supervisor installation procedure, or after you install the Advanced Server but before you configure it.
1.4 About Licensing

The following sections describe the way the PATHWORKS Advanced Server software is licensed, and how to ensure clients accessing the server are properly licensed.

1.4.1 License Requirements

The PATHWORKS Advanced Server requires that clients accessing file and print services be appropriately licensed. To conform to this requirement, one of the following must be true:

• The client must present a client-based license before each attempt to connect to a PATHWORKS Advanced Server.

• The PATHWORKS Advanced Server must have a server-based license available to assign to an unlicensed client attempting to use services of the PATHWORKS Advanced Server.

In either case, the license required to access PATHWORKS V6.1 for OpenVMS (Advanced Server) services is the PATHWORKS Client Access license: PWLMXXXCA07.03 or higher, or an equivalent client virtual license.

If you are upgrading from PATHWORKS LAN Manager, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide for information about upgrading client license requests.

1.4.2 About the License Server

The PATHWORKS License Server is an optional software program that you can run on your OpenVMS system to grant licenses to clients.

The License Server can be installed:

• With the file and print server (automatically included with your file and print server installation)

• Separately from the file and print server (called the "standalone License Server")

In either case, you can configure the License Server to support clients using any of the following network protocols:

• DECnet

• LAN Manager (NetBEUI)

• TCP/IP
Before You Install PATHWORKS Advanced Server

1.4 About Licensing

Compaq recommends that you install the License Server on a designated OpenVMS system without the PATHWORKS file server. (The PATHWORKS Advanced Server installation procedure allows you to install the License Server separately from the file server.) Alternatively, you can run the License Server on an OpenVMS Cluster with PATHWORKS file and print servers, where cluster failover provides reliability.

Each LAN needs only one active PATHWORKS License Server. (The same License Server can support both PATHWORKS LAN Manager and PATHWORKS Advanced Server clients.) The license product authorization keys (PAKs) must be loaded on the system that runs the PATHWORKS License Server. In an OpenVMS Cluster, the PAKs must be loaded into a shared license database.

<table>
<thead>
<tr>
<th>Information Required</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Loading licenses</td>
<td>OpenVMS License Management Utility Manual</td>
</tr>
<tr>
<td>Configuring the License Server</td>
<td>Chapter 4, Configuring and Starting the Standalone License Server</td>
</tr>
<tr>
<td>Managing PATHWORKS Advanced Server licenses</td>
<td>Compaq Advanced Server for OpenVMS Guide to Managing Advanced Server Licenses</td>
</tr>
</tbody>
</table>

1.5 About External Authentication

External authentication is an optional feature of OpenVMS systems that allows system managers to set up user accounts for which login authentication is based on a security mechanism other than OpenVMS security.

The PATHWORKS Advanced Server takes advantage of this feature by providing the ability to use the PATHWORKS Advanced Server or Windows NT-compatible user authentication mechanisms to authenticate OpenVMS user logins. This allows users to log in at the OpenVMS login prompt using the PATHWORKS Advanced Server user name and password. In addition, it provides automatic password synchronization for user accounts.

When you install the complete PATHWORKS Advanced Server, the files required to support external authentication are automatically included in the installation process.

When you install the Advanced Server in an OpenVMS Cluster, if you want to enable external authentication on OpenVMS Cluster member nodes on which the server is not running and which share the same system disk, you can install the standalone external authentication software on that disk (without installing the Advanced Server software). On OpenVMS Version 7.1 Alpha and
VAX cluster members, you must copy the external authentication files from a system on which the Advanced Server is installed to the OpenVMS Version 7.1 systems.

For more information about enabling external authentication, refer to Section 5.6, Setting Up External Authentication.

1.6 Reading the Release Notes

The PATHWORKS Advanced Server installation kit includes the Compaq PATHWORKS for OpenVMS (Advanced Server) Release Notes. Compaq recommends that you read the release notes before starting the installation.

Note

The installation procedure copies the release notes into the SYS$HELP: area, where they are available after server installation.

1.6.1 How to Access the Release Notes

Use the following table to decide how to print the release notes:

<table>
<thead>
<tr>
<th>Desired Result</th>
<th>Required Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print the release notes before the</td>
<td>Do the following:</td>
</tr>
<tr>
<td>installation</td>
<td>1. Load the installation kit on a drive.</td>
</tr>
<tr>
<td></td>
<td>2. Enter the following commands, replacing device with the name of the device</td>
</tr>
<tr>
<td></td>
<td>(and if the device is a disk, also designate the directory) where you</td>
</tr>
<tr>
<td></td>
<td>loaded the installation kit:</td>
</tr>
<tr>
<td></td>
<td>$ MOUNT device: PWRK</td>
</tr>
<tr>
<td></td>
<td>$ BACKUP/SELECT=PWRK061.RELEASE_NOTES device:PWRK061.A/SAVE_SET *</td>
</tr>
<tr>
<td></td>
<td>$ PRINT PWRK061.RELEASE_NOTES</td>
</tr>
</tbody>
</table>
Before You Install PATHWORKS Advanced Server

1.6 Reading the Release Notes

<table>
<thead>
<tr>
<th>Desired Result</th>
<th>Required Steps</th>
</tr>
</thead>
<tbody>
<tr>
<td>Print the release notes during the installation</td>
<td>Do the following:</td>
</tr>
<tr>
<td></td>
<td>1. Load the installation kit on a drive.</td>
</tr>
<tr>
<td></td>
<td>2. Enter the following command to start the installation procedure:</td>
</tr>
<tr>
<td></td>
<td>$ @VMSINSTAL PWRK061 device_name: OPTIONS N</td>
</tr>
<tr>
<td></td>
<td>The installation procedure prompts you to either print or display the release</td>
</tr>
<tr>
<td></td>
<td>notes. In any case, the release notes are always copied to the SYS$HELP: area.</td>
</tr>
</tbody>
</table>

1.7 Using the Installation Checklist

Appendix A, Installation and Upgrade Checklist, provides an installation and configuration summary checklist. You can photocopy the summary checklist and use it to track the completion of the installation and configuration tasks described in this guide.

1.8 Requirements for Installing PATHWORKS Advanced Server Software

The following sections describe the hardware and software that may be required to install PATHWORKS Advanced Server on the system.

1.8.1 Hardware Requirements

All Alpha and VAX processors supported by the OpenVMS operating system are also supported by the PATHWORKS Advanced Server. For the latest information on the hardware that the server supports, refer to the Software Product Description (SPD).

Make sure that the network (including cables, PCs, servers, and other hardware) is connected. For a list of the hardware that the server supports, refer to the Software Product Description (SPD).

1.8.2 Software Requirements

To install PATHWORKS Advanced Server successfully, you must have the following software properly installed and configured on your system:

- OpenVMS Alpha Version 7.3, 7.2-2, 7.2-1, or 6.2, or OpenVMS VAX Version 7.3, 7.2, or 6.2
Before You Install PATHWORKS Advanced Server

1.8 Requirements for Installing PATHWORKS Advanced Server Software

- The appropriate transport software to support the network protocols used by other servers and by network clients, including one or more of the following:
  - DECnet or DECnet-Plus (optional)
    DECnet or DECnet-Plus may optionally be installed when you install the OpenVMS operating system.
  - TCP/IP (optional)
    TCP/IP Services for OpenVMS or a supported third-party TCP/IP product can be used to provide IP support. Refer to the PATHWORKS Advanced Server Software Product Description (SPD) for a list of supported TCP/IP products.

1.8.3 Supported Client Software

PATHWORKS Advanced Server supports connections from the following types of clients:

- Windows 2000
- Windows NT 4.0
- Windows 98
- Windows 95
- Windows for Workgroups
- PATHWORKS 32

1.8.4 Memory Requirements

The system must have at least 64 MB of physical memory to run the PATHWORKS Advanced Server.

1.9 Preinstallation Tasks

Use the following checklist to make sure you have completed all the tasks you should perform before you install the software. Each task is described later in this section.
## Before You Install PATHWORKS Advanced Server

### 1.9 Preinstallation Tasks

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Check the part listing.</td>
</tr>
<tr>
<td>2.</td>
<td>Make sure that the network hardware is installed and connected.</td>
</tr>
<tr>
<td>3.</td>
<td>Log in to the SYSTEM account.</td>
</tr>
<tr>
<td>4.</td>
<td>Make sure that the required software is installed.</td>
</tr>
<tr>
<td>5.</td>
<td>Read the release notes.</td>
</tr>
<tr>
<td>6.</td>
<td>Check system parameters.</td>
</tr>
<tr>
<td>7.</td>
<td>Back up the system disks.</td>
</tr>
<tr>
<td>8.</td>
<td>Make sure that you have adequate disk space for installation.</td>
</tr>
<tr>
<td>9.</td>
<td>Check the queue manager.</td>
</tr>
<tr>
<td>10.</td>
<td>Check the time zone configuration.</td>
</tr>
<tr>
<td>11.</td>
<td>Make sure that DECnet is running, if you are planning to use the DECnet transport.</td>
</tr>
<tr>
<td>12.</td>
<td>Make sure that TCP/IP is running, if you are planning to use the TCP/IP transport.</td>
</tr>
<tr>
<td>13.</td>
<td>Check for existing Compaq OpenVMS server images and files.</td>
</tr>
<tr>
<td>14.</td>
<td>Check the OpenVMS Cluster configuration, if you are installing PATHWORKS Advanced Server on a cluster.</td>
</tr>
</tbody>
</table>
Before You Install PATHWORKS Advanced Server
1.9 Preinstallation Tasks

Before you install PATHWORKS Advanced Server, perform the following steps.

Note
All the steps except the last apply to both standalone and cluster Advanced Servers. The last step delineates what needs to be done for installing the Advanced Server on a cluster.

1.9.1 Step 1: Check the Part Listing
The software part listing specifies the contents of the kit you receive. Check the contents of your kit against that information. If parts are missing or your kit is damaged, contact your Compaq Computer Corporation representative.

1.9.2 Step 2: Check the Network Hardware
PATHWORKS Advanced Server runs on OpenVMS systems that meet the software requirements. The PC local area network (LAN) requires:
• A supported network controller board in the server and in each client
• The cables to connect each client and server to the network

1.9.3 Step 3: Log In to the SYSTEM Account
Before you install PATHWORKS Advanced Server, log in to the SYSTEM account, or another account that has all privileges enabled to run the installation procedure.

To log in to the SYSTEM account:
1. At the user name prompt, enter SYSTEM:

   Username: SYSTEM

2. At the Password prompt, enter the password to the SYSTEM account. The password you enter is not displayed.

1.9.4 Step 4: Check the Required Software
PATHWORKS Advanced Server requires the following:
• OpenVMS operating system, Alpha Version 7.3, 7.2-2, 7.2-1, or 6.2, or VAX Version 7.3, 7.2, or 6.2
• DECnet or DECnet-Plus, if you are going to use the DECnet transport, the mail server, or the License Server over DECnet.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

- A TCP/IP product, if you are going to use the TCP/IP for cluster or network communication. Supported TCP/IP products are described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Release Notes.

1.9.5 Step 5: Print and Read the Release Notes

If you have not already read the release notes, you should do so before installing the software. If you choose to back up the system, as recommended in Section 1.9.8, Step 8: Back Up the System, you can read the release notes during the backup. See Section 1.6, Reading the Release Notes, for more information.

1.9.6 Step 6: Check System Parameters

Most systems have adequate system resources readily available to include the PATHWORKS Advanced Server software. However, make sure that the following OpenVMS system parameters are set properly. Make any necessary changes to the MODPARAMS.DAT file, then run AUTOGEN, and reboot your system. You can delay this reboot until the first reboot required for backing up your system disks (a backup is recommended in Section 1.9.8, Step 8: Back Up the System).

Make sure all other software that will be running on your system is indeed running before and while you run AUTOGEN.

---

Note

If these parameters are not set properly, you cannot configure the server after you complete the installation procedure.

---

GBLPAGES parameter

The minimum value of this parameter is listed in Table 1–2, GBLPAGES Parameter Minimum Value.

<table>
<thead>
<tr>
<th>Table 1–2 GBLPAGES Parameter Minimum Value</th>
<th>Minimum Value for a VAX system</th>
<th>Minimum Value for an Alpha system</th>
</tr>
</thead>
<tbody>
<tr>
<td>Minimum Value for a VAX system</td>
<td>3500 pages</td>
<td>7500 pages</td>
</tr>
</tbody>
</table>

To ensure that your system has enough free global pages, do the following while the Advanced Server is not running:
Before You Install PATHWORKS Advanced Server
1.9 Preinstallation Tasks

1. Enter the following:
\$ WRITE SYS$OUTPUT P$GETSYI("FREE_GBLPAGES")

The value of the GBLPAGES parameter is displayed. For example:
143576

2. If the value is less than required, edit the system parameters file
SYS$SYSTEM:MODPARAMS.DAT and add a line similar to the following:
MIN_GBLPAGES = 7500

GBLSECTIONS parameter
The minimum value of this parameter differs depending on which server is to be installed, as described in Table 1–3, GBLSECTIONS Parameter Minimum Value.

<table>
<thead>
<tr>
<th>Minimum Value for the standalone License Server</th>
<th>Minimum Value for the PATHWORKS Advanced Server Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>75</td>
</tr>
</tbody>
</table>

To ensure that your system has enough free global sections, do the following while the Advanced Server is not running:

1. Enter the following:
\$ WRITE SYS$OUTPUT P$GETSYI("FREE_GBLSECTS")

The value of the GBLSECTIONS parameter is displayed. For example:
249

2. If the value is less than required, edit the system parameters file
SYS$SYSTEM:MODPARAMS.DAT and add a line similar to the following:
MIN_GBLSECTIONS = 75

PROCSECTCNT parameter
The minimum value of this parameter differs depending on which server is to be installed, as described in Table 1–4, PROCSECTCNT Parameter Minimum Value.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

Table 1–4 PROCSECTCNT Parameter Minimum Value

<table>
<thead>
<tr>
<th>Minimum Value for the Standalone License Server</th>
<th>Minimum Value for the PATHWORKS Advanced Server Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>40</td>
</tr>
</tbody>
</table>

To ensure that the value of the system parameter PROCSECTCNT is adequate:

1. Enter the following:

```bash
$ WRITE SYS$OUTPUT PSGETSYI("PROCSECTCNT")
```

The value of the PROCSECTCNT parameter is displayed. For example:

```
20
```

2. If the value is less than required, edit the system parameters file
   SYS$SYSTEM:MODPARAMS.DAT and add a line similar to the following:

```
MIN_PROCSECTCNT = 40
```

SCSNODE parameter

This parameter must be defined as your system’s computer name. If you are running DECnet, the SCSNODE name should be the same as the DECnet node name.

The SCSNODE parameter’s preinstallation status affects what happens after you install, as follows:

<table>
<thead>
<tr>
<th>SCSNODE Status</th>
<th>Your Action</th>
<th>Server Response After Installation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not defined</td>
<td>Do not define it</td>
<td>Does not start.</td>
</tr>
<tr>
<td>Already defined</td>
<td>Do not define it</td>
<td>Starts.</td>
</tr>
<tr>
<td>Not defined</td>
<td>Define it</td>
<td>Starts, but the OpenVMS system renames print and batch queues to include the new computer name. Therefore, you must requeue any existing print or batch jobs to the new queues. You may also have to rebuild the queue database. For information on these system management tasks, refer to the OpenVMS System Manager’s Manual.</td>
</tr>
</tbody>
</table>

To check whether the system parameter SCSNODE is defined as your system’s computer name, enter the following commands at the system prompt:
$ SCSNODE = $GETSYI("SCSNODE")
$ SHOW SYMBOL SCSNODE

As a result, one of the following occurs:

- If SCSNODE is defined, the computer name is displayed. For example, if your system's computer name is SPEEDY:

  $ SHOW SYMBOL SCSNODE
  SPEEDY

- If SCSNODE is not defined, the computer name is not displayed. If SCSNODE is not defined, edit the system parameters file SYS$SYSTEM:MODPARAMS.DAT and define the parameter. For example, if your system's computer name is SPEEDY, edit the file so that it contains the following line:

  SCSNODE = "SPEEDY"

If you edit the file SYS$SYSTEM:MODPARAMS.DAT, you must run the OpenVMS command procedure AUTOGEN and reboot the system either now or at some time before configuring the server. For example:

  $ @SYS$UPDATE:AUTOGEN GETDATA REBOOT NOFEEDBACK

For information about running AUTOGEN, refer to the OpenVMS System Management Utilities Reference Manual.

### 1.9.7 Step 7: Check ENQLM Process Quota

Make sure that the ENQLM quota for the user account you use for configuring the Advanced Server is set to a value of 500 or greater. If it is not set appropriately, you will not be able to configure the Advanced Server after the installation procedure.

To determine the current setting for this quota, enter the following command while logged in to the user account from which you will run the PWRK$CONFIG.COM configuration procedure:

  $ WRITE SYS$OUTPUT $GETJPI("", "ENQLM")

The value of the ENQLM parameter is displayed. For example:

  2000

If the value is less than required, follow these steps:

1. Set the process default device and directory to SYS$SYSTEM.
2. At the system prompt, enter the MCR AUTHORIZE command.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

3. At the UAF prompt, enter the MODIFY command, as in the following example, where user-account is the name of the user account from which you will configure the server, and value is a value of 500 or greater:

   UAF> MODIFY user-account/ENQLM=value

1.9.8 Step 8: Back Up the System

To safeguard against the loss of valuable data, Compaq recommends that you back up all disks on your system (or at least the system disk) before you install any layered product.

To do a system backup, use the OpenVMS BACKUP command. For information about the BACKUP command, refer to the OpenVMS System Management Utilities Reference Manual.

1.9.9 Step 9: Check Disk Space Requirements

To determine the number of disk blocks required for your installation, refer to the PATHWORKS Advanced Server release notes.

To check the number of free blocks on the system disk, enter:

   $ SHOW DEVICE SYS$SYSDEVICE

The OpenVMS system displays information about the system disk, including the number of free blocks. For example:

   Device  Device  Error  Volume  Free  Trans  Mnt
   Name    Status  Count  Label  Blocks  Count  Cnt
   DUA0:   Mounted  0  AXP072  724856  280  1

1.9.10 Step 10: Check the Queue Manager

It is not necessary to have the queue manager running during installation and configuration, but Compaq recommends that it be running when you configure the server. You can enter the SHOW QUEUE/MANAGER command to check whether the queue manager is running:

   $ SHOW QUEUE/MANAGER

If the queue manager is running, your OpenVMS system displays a message similar to the following:

   Queue manager SYS$QUEUE MANAGER, running, on CPEEDY::

If the queue manager is not running, you can use the following command to start it:

   $ START/QUEUE/MANAGER
Before You Install PATHWORKS Advanced Server
1.9 Preinstallation Tasks

For more information about the OpenVMS DCL commands, refer to the OpenVMS DCL Dictionary.

1.9.11 Step 11: Check Time Zone and TDF

To check the time zone and time differential factor (TDF) settings on the system, run the OpenVMS command procedure SYS$MANAGER:UTC$TIME_SETUP.COM. From the SYSTEM account, enter the following command to begin the procedure:

$ @SYS$MANAGER:UTC$TIME_SETUP.COM

PATHWORKS Advanced Server’s internal time management uses Greenwich Mean Time (GMT). To properly represent the time in the local environment, the time zone information must be set up before the server is started.

To set the time zone on your OpenVMS system, execute the following command procedure:

@ SYS$MANAGER:UTC$TIMEZONE_SETUP.COM

To set the time zone differential factor for the OpenVMS system, execute the following command procedure:

@ SYS$MANAGER:UTC$CONFIGURE_TDF.COM

If you change any time zone information, such as the daylight savings time setting, you must restart the server for the time to be properly represented.

Note

For diagnostic purposes, you can check the server log file for the values of the TDF (in seconds) and the daylight saving time flag.

For more information on running the command procedure and resetting time zone and TDF, see the section on setting time zone information in the OpenVMS System Manager’s Manual.

1.9.12 Step 12: Check DECnet Status

If you plan to use the DECnet transport, it is not necessary to have DECnet or DECnet-Plus running during the installation; however, DECnet or DECnet-Plus must be running on the system before you can configure the server.

To see whether DECnet is running on the system where you are planning to install the server software, enter the appropriate command depending on whether you have installed DECnet (Phase IV), or DECnet-Plus, as described in the following sections.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

1.9.12.1 Checking DECnet (Phase IV) Status

To check DECnet status, enter the following command:

$ MCR NCP SHOW EXECUTOR

- If DECnet is running, the SHOW EXECUTOR display resembles the following:
  
  Node Volatile Summary as of 1-JUL-2001 12:16:36
  Executor node = 9.000 (BRUTUS)
  State = on
  Identification = DECnet for OpenVMS AXP V7.2

- If DECnet is not running, enter the following command to start it:
  $ @SYS$MANAGER:STARTNET

1.9.12.2 Checking DECnet-Plus Status

If you use DECnet-Plus (formerly DECnet/OSI for OpenVMS), enter the following command to see whether it is running on the system where you are planning to install the server software:

$ SHOW LOGICAL NET$STARTUP_STATUS

- If DECnet-Plus is running, the system displays the following:
  "NET$STARTUP_STATUS" = "RUNNING-ALL" (LNM$SYSTEM_TABLE)

- If DECnet-Plus is not running, enter the following command to start it:
  $ @SYS$STARTUP:NET$STARTUP

For more information, refer to the DECnet product documentation.

1.9.13 Step 13: Check TCP/IP Status

If you are planning to use the TCP/IP transport, make sure that TCP/IP is running and that the PATHWORKS IP (PWIP) driver has been loaded. The procedure for starting the TCP/IP product and the PWIP driver differs depending on the TCP/IP product running on the system. Refer to the documentation for your TCP/IP product for information on how to start TCP/IP and the PWIP driver.

For example, if TCP/IP Services for OpenVMS Version 5 is installed, you can start the PWIP driver manually by entering the following command:

$ @SYS$STARTUP:TCPIP$PWIP_STARTUP.COM
Alternatively, you can configure TCP/IP Services for OpenVMS to automatically start the PWIP driver when TCP/IP is started, using the configuration procedure TCP$P$CONFIG.COM.

For TCP/IP Services for OpenVMS Version 4.x, use the configuration procedure UCX$CONFIG.COM to enable the PWIP driver on TCP/IP startup, or enter the following OpenVMS commands:

```
$ @SYS$STARTUP:UCX$STARTUP
$ @SYS$STARTUP:UCX$PWIP_STARTUP
```

You can add these commands to the system startup procedure.

After the installation is complete, you can use the Configuration Manager to configure the PATHWORKS Advanced Server to use TCP/IP. You can do this during the configuration procedure (PWRK$CONFIG) or after configuring the server. In the former case, PWRK$CONFIG gives you the option of invoking the Configuration Manager. In the latter case, you can invoke the Configuration Manager at the DCL prompt by entering the ADMINISTER/CONFIG command.

### 1.9.14 Step 14: Check for Existing OpenVMS Server Images and Files

Make sure that:

1. No Compaq OpenVMS file and print server images (current or earlier versions) are running on the local system or on any member of the OpenVMS Cluster (when installing on a cluster).

2. No files from a PATHWORKS for OpenVMS (NetWare) kit are on the system disk. If such files are present, use SYS$UPDATE:PWVN$DEINSTAL.COM (included with the PATHWORKS for OpenVMS (NetWare) kit) to remove those files.

3. No PATHWORKS or Advanced Server for OpenVMS images reside in the SYS$SPECIFIC: directory area of the system disk on which PATHWORKS will be installed. (When PATHWORKS V6.1 for OpenVMS (Advanced Server) is installed, images in the SYS$SPECIFIC: directory area will be used before the corresponding images in the SYS$COMMON: directory area are used.) To remove the PATHWORKS or Advanced Server (V7.2 or V7.2A) for OpenVMS files, use the PWRK$DEINSTAL utility. To remove the Advanced Server V7.3 for OpenVMS files, use the PRODUCT REMOVE command, as documented in the Compaq Advanced Server for OpenVMS Server Installation and Configuration Guide.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

The server VMSINSTAL installation utility will detect if any of these conditions exist, and if the images or files are found, it will notify you. The VMSINSTAL installation utility automatically deletes, without notification, any files from a PATHWORKS Advanced Server or Advanced Server for OpenVMS kit found in the SYS$SPECIFIC directory tree.

1.9.15 Step 15: Check OpenVMS Cluster Configuration

You can run the Advanced Server on multiple OpenVMS Cluster members. To do so, follow these steps:

1. An OpenVMS Cluster can include both VAX and Alpha member nodes. The PATHWORKS Advanced Server can run on any VAX or Alpha cluster member that is running a supported version of OpenVMS. However, an OpenVMS Cluster cannot support two different versions of the file and print server (for example, PATHWORKS V6 for OpenVMS (Advanced Server) and Advanced Server V7.3 for OpenVMS).

2. Decide which member nodes in the OpenVMS Cluster will run the Advanced Server, then identify all the system disks that will be used by those member nodes. Install the Advanced Server on each of those system disks.

   If the OpenVMS Cluster contains other system disks (for example, to support systems running earlier versions of OpenVMS), these disks might have older versions of Compaq OpenVMS file and print servers installed on them. If so, remove the older versions to prevent them from accidentally starting up while the Advanced Server is running on the current OpenVMS systems. To remove the PATHWORKS for OpenVMS (Advanced Server) product, execute the command procedure SYS$UPDATE:PWRK$DEINSTAL from a cluster member that uses the system disk from which PATHWORKS is to be removed. For more information on using PWRK$DEINSTAL.COM, see Chapter 7, Removing PATHWORKS Advanced Server Software. To remove the Advanced Server V7.3 for OpenVMS product, use the PRODUCT REMOVE command, as documented in the Compaq Advanced Server for OpenVMS Server Installation and Configuration Guide. To remove earlier versions of the Advanced Server for OpenVMS, use PWRK$DEINSTAL.COM. To remove a PATHWORKS (LAN Manager) product, use the PWRK$DEINSTAL utility that was installed with the product. The PATHWORKS (LAN Manager) server must be stopped before you can remove it.

3. If you plan to use the TCP/IP transport, ensure that all cluster members on which the Advanced Server will run are in the same TCP/IP subnet.
Before You Install PATHWORKS Advanced Server

1.9 Preinstallation Tasks

4. If an earlier version of the PATHWORKS for OpenVMS (Advanced Server) or any other Compaq OpenVMS file and print server is running on any cluster member, stop the server on the cluster member system.

5. On each system on which you want to install the Advanced Server, complete the tasks described in this chapter.

On each cluster member that you want to use as a file and print server, you will run the Advanced Server configuration command procedure (PWRK$CONFIG.COM), as explained in Chapter 3, Configuring the PATHWORKS Advanced Server. This ensures that each node has its appropriate parameters set and enough resources to run the server.

6. All cluster members that will run the Advanced Server must share a common:
   • System user authorization file (SYSUAF.DAT)
   • Rightlist file (RIGHTSLIST.DAT)
   • Advanced Server data directory location (PWRK$COMMONROOT:)

7. When installing the Advanced Server on an OpenVMS Cluster member, if the following two conditions apply, you are must shut down the server and reboot the systems running the server. (You can avoid the reboot, as noted below.)

   1. Advanced Servers are installed on two or more system disks in the cluster

   2. The Advanced Server is already running on one or more cluster members that are booted from a system disk other than the one on which the installation is occurring

To avoid having to reboot the systems that are already running the Advanced Server, the system administrator can deassign the logical name (PWRK$REBOOT_REQUIRED) that forces the reboot to occur on each affected node, as follows:

   $ DEASSIGN/SYSTEM PWRK$REBOOT_REQUIRED

1.10 Next Step

To install PATHWORKS Advanced Server, proceed to Chapter 2, Installing the PATHWORKS Advanced Server.
This chapter describes how to install the PATHWORKS for OpenVMS (Advanced Server) software. You must follow these procedures regardless of whether you are upgrading from a previous version of the server or installing the server for the first time.

Before you begin the installation procedure, make sure that you have completed the preinstallation tasks listed in Chapter 1, Before You Install PATHWORKS Advanced Server.

This chapter consists of the following sections:

- Section 2.1, About the Installation Procedure
- Section 2.2, Installing the Server
- Section 2.3, Troubleshooting Installation Problems
- Section 2.4, Next Steps

2.1 About the Installation Procedure

The following sections describe the installation procedure and what it does.

2.1.1 What is VMSINSTAL?

VMSINSTAL is the standard command procedure for installing software on the OpenVMS operating system. VMSINSTAL consists of a series of questions (prompts). Your answers to these questions provide VMSINSTAL with the information needed for installing PATHWORKS Advanced Server.
2.1 About the Installation Procedure

2.1.2 PATHWORKS Advanced Server Installation Kit

The VMSINSTAL installation kit includes several OpenVMS BACKUP save sets. The save set PWRK061.A always contains the file KITINSTAL.COM and the release notes. The savesets included in the software kit are listed in the product release notes.

2.1.3 What VMSINSTAL Does

When you use VMSINSTAL, it:

1. Determines whether the PATHWORKS for OpenVMS (NetWare) server is installed on the system, and if it is, optionally removes the NetWare server software.
2. Creates PATHWORKS Advanced Server accounts on the file and print server, if necessary.
3. Restores the files from the save sets in the installation kit.
4. Creates DECnet objects, if you are running DECnet or DECnet-Plus.
5. Installs the PATHWORKS Advanced Server DCL command definition file.
6. Installs the PATHWORKS Advanced Server logical names definition files.
7. Deletes obsolete files.
8. Installs the PATHWORKS Advanced Server files.
9. Verifies that the software has been installed successfully. (See Section 5.2, Verifying the PATHWORKS for OpenVMS (Advanced Server) Installation, for information on how to run the Installation Verification Procedure after installing the software.)

2.2 Installing the Server

The following sections describe how to prepare information required during the installation procedure, and how to specify the required information during the procedure.

2.2.1 Before You Start VMSINSTAL

Before you start the VMSINSTAL command procedure, be prepared to answer the following questions. The questions that VMSINSTAL asks depend on the software environment and options you select.

1. What is the product identifier?
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

The product identifier tells VMSINSTAL which save sets to copy from the media to a disk on the system. The product identifier for PATHWORKS Advanced Server is:

PWRK061

2. What is the name of the device on which you want to mount the media?
The device name depends on the type of media and computer you have. For example, if you want to mount a CD-ROM on the CD-ROM drive of your Alphastation 400, the device name might be DKA400.

3. Do you want to access the online release notes during the installation procedure?
You can tell VMSINSTAL to ask you whether you want to display or print the online release notes during installation. Because the release notes may describe important changes to the installation procedure, Compaq recommends that you read them. Procedures for obtaining the release notes are described in Section 1.6, Reading the Release Notes.

4. Do you want to install just the Upgrade utility?
If the PATHWORKS (LAN Manager) server is installed on the system, you are prompted to install the Upgrade utility separately, which allows you to upgrade server database files before you install the PATHWORKS for OpenVMS (Advanced Server). Appendix D, Upgrade Utility Installation, shows a sample installation of the Upgrade utility.

To install the PATHWORKS Advanced Server, you must upgrade the server databases. If you choose to install just the Upgrade utility, you can install the PATHWORKS Advanced Server later, after you upgrade your databases. If you install the PATHWORKS Advanced Server software, the Upgrade utility is also installed.

5. Do you want to preserve the PATHWORKS (LAN Manager) environment, and if so, where?
If you are upgrading from PATHWORKS (LAN Manager), you can choose to have the PATHWORKS (LAN Manager) data files copied to the location you specify in the installation procedure. This allows you to roll back to PATHWORKS (LAN Manager) later, after configuring and starting the PATHWORKS Advanced Server. Refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide for more information about the PATHWORKS Rollback procedure.
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

If you have V4.x of PATHWORKS for OpenVMS, you must upgrade to PATHWORKS (LAN Manager) before installing PATHWORKS V6 for OpenVMS (Advanced Server). For instructions on upgrading from V4.x to V5, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide.

6. Do you want to install PATHWORKS Advanced Server software?

This option allows you to install the complete PATHWORKS for OpenVMS (Advanced Server) server, including the Upgrade utility, the integrated License Server, and the external authentication software.

Appendix B, Sample Complete Server Installation and Configuration, shows a sample installation and configuration of the complete PATHWORKS for OpenVMS (Advanced Server) server.

7. Do you want to install the standalone License Server?

If the system is designated to run the standalone License Server, you can install the License Server software only. Compaq recommends that you run the standalone License Server on a designated License Server system.

The installation procedure gives you the option to install the standalone License Server software from the PATHWORKS for OpenVMS (Advanced Server) software kit. In this case, the complete PATHWORKS Advanced Server (including the file and print server) is not installed. If the complete PATHWORKS Advanced Server is installed, you cannot choose the standalone License Server installation option.

Appendix C, Sample Standalone License Server Installation and Configuration, shows a sample installation and configuration of the standalone License Server.

8. Do you want to install PATHWORKS external authentication software only?

If you have installed the Advanced Server and enabled external authentication in an OpenVMS Cluster that includes Alpha systems running OpenVMS 7.2-1 or later and VAX systems running OpenVMS 7.2 or later, and if these systems boot from a system disk that will not have the Advanced Server installed, you can install the standalone external authentication software on that system disk. For more information, see Section 1.5, About External Authentication. Appendix E, Sample External Authentication Installation, shows a sample installation of the standalone external authentication software.

9. What is the user identification code (UIC) group number?
The PATHWORKS Advanced Server installation procedure creates the OpenVMS user accounts PWRK$DEFAULT and PWRK$GUEST, if they do not already exist. When an OpenVMS user account is created, it is assigned a UIC group number. The default selection displayed by the installation procedure is determined as follows:

<table>
<thead>
<tr>
<th>Condition</th>
<th>Default Displayed</th>
</tr>
</thead>
<tbody>
<tr>
<td>You are installing PATHWORKS Advanced Server for the first time</td>
<td>The first available unused UIC group number, starting with 360</td>
</tr>
<tr>
<td>PATHWORKS (LAN Manager) is currently installed, an account named PCFS$ACCOUNT already exists</td>
<td>The same group number as that associated with the existing account PCFS$ACCOUNT</td>
</tr>
<tr>
<td>The file and print server accounts already exist</td>
<td>The same group number as the existing accounts</td>
</tr>
</tbody>
</table>

### 2.2.2 How to Respond to Prompts

An asterisk (*) at the beginning of a line in the installation procedure identifies a prompt to which you must respond.

Usually the prompt has a default answer, which the procedure displays in square brackets ([ ]) at the end of the question.

To accept a default, press Return. For example:

* Is the selection correct [YES]? [Return]

### 2.2.3 How to Start VMSINSTALL

When you have completed the recommended preinstallation tasks outlined in Chapter 1, Before You Install PATHWORKS Advanced Server, and have read the release notes, you are ready to use the VMSINSTALL installation procedure to install the PATHWORKS Advanced Server. To start VMSINSTALL:

1. Ensure that you are logged in to the SYSTEM account.

2. Load the installation kit media onto a drive. (It is not necessary to mount the drive, but it must be on line so that the installation procedure can mount it.)

3. Enter the following command to check the status of the device on which you have loaded the installation kit, replacing device_name with the name of the applicable device:

   ```sh
   $ SHOW DEVICE device_name
   ```
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

For example:

$ SHOW DEVICE $1$DUS0:

<table>
<thead>
<tr>
<th>Device</th>
<th>Device Error</th>
<th>Volume Free</th>
<th>Trans Mnt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Status Count</td>
<td>Label Blocks</td>
<td>Count Cnt</td>
</tr>
<tr>
<td>$1$DUS0: (HSC001) Mounted 0 HUBSYS</td>
<td>347718 628</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

If the device status is Offline, enter the following command to place the device online, replacing device_name with the name of your device:

$ SET DEVICE/AVAILABLE device_name

4. Change your default directory to SYS$UPDATE:

$ SET DEFAULT SYS$UPDATE

5. Check to make sure that other users are not logged in to the system.

6. If a previous version of the software is installed on the system, shut it down. In a cluster, shut down the software on all cluster members. For a noncluster server, enter:

$ @SYS$STARTUP:PWRK$SHUTDOWN

For a cluster server, enter:

$ @SYS$STARTUP:PWRK$SHUTDOWN CLUSTER

7. If you have DECnet configured on your system and you want to create a log of the installation procedure, enter the following command and then log in to the system account again:

$ SET HOST 0/LOG=file-name

where file-name is the name of the file to which you want the log written.

8. Start VMSINSTAL and specify the PWRK061 product identifier, the media device, and whether you want access to the online release notes during the installation procedure:

<table>
<thead>
<tr>
<th>Access the Release Notes During Installation?</th>
<th>Command Line</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>@VMSINSTAL PWRK061 device_name OPTIONS N</td>
</tr>
<tr>
<td>No</td>
<td>@VMSINSTAL PWRK061 device_name</td>
</tr>
</tbody>
</table>

9. The interactive installation procedure begins, and you are prompted for information.
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

A sample installation script is included section by section, beginning with Example 2-1, Sample Installation Procedure—Part 1, with each section accompanied by additional explanatory information.

The actual installation script that is displayed on your system might include additional questions and information, depending on your current configuration.

---

**Note**

To interrupt the installation procedure, press [Ctrl/Y] at any time. The installation procedure deletes any files that were created, then exits. Then you can restart the installation from the beginning.

---

**Example 2–1 Sample Installation Procedure—Part 1**

```
$@SYS$UPDATE:VMSINSTAL PWRK061 SYS$DEVICE:[KITS.PWRK]
OpenVMS AXP Software Product Installation Procedure V7.2-1H1
It is 13-JUL-2001 at 16:59.
Enter a question mark (?) at any time for help.
%VMSINSTAL-W-ACTIVE, The following processes are still active:
   TCPIP$ESNMP
   TCPIP$OS_MIBS
   TCPIP$HR_MIB
* Do you want to continue anyway [NO]? Y
* Are you satisfied with the backup of your system disk [YES]? Y
The following products will be processed:
PWRK V6.1
   Beginning installation of PWRK V6.1 at 16:59
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-RELMOVED, Product’s release notes have been moved to SYS$HELP.
   PATHWORKS for OpenVMS Installation
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```
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

Example 2–1 (Cont.) Sample Installation Procedure—Part 1

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In Example 2–1, Sample Installation Procedure—Part 1, the installer specifies the source device SYS$DEVICE:[KITS.PWRK] for the installation kit.

The first part of the installation script indicates that certain processes are already running and gives you the option of continuing or stopping the procedure. In this example, the processes listed are part of the Compaq TCP/IP Services for OpenVMS software running on the system.

If you continue (respond YES to the prompt), the procedure asks if you are satisfied with the backup (backup of the system is recommended prior to installing the server), and then identifies the product being installed.

Example 2–2 Sample Installation Procedure—Part 2

Please select from the following install options:

PATHWORKS V6.1 for OpenVMS (Advanced Server)
PATHWORKS V6.1 for OpenVMS (Advanced Server) License Server (only)
External Authentication images (only)

* Do you want to install the complete PATHWORKS V6.1 for OpenVMS [NO]? Y

%PWRK-I-OLDVERPWRK, PATHWORKS V6.0-400D for OpenVMS (Advanced Server)
-PWRK-I-OLDVERPWRK, was previously installed

The following components will be installed:

PATHWORKS V6.1 for OpenVMS (Advanced Server)

If the selection is correct, the installation will continue. If the selection is not correct, you can change your selection. Press CTRL/Y if you want to terminate the installation.

* Is the selection correct [YES]?

Return
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

This part of the script gives you the option of installing the complete PATHWORKS Advanced Server product, installing only the standalone License Server, installing only the standalone external authentication images, or installing only the Upgrade utility.

In Example 2–2, Sample Installation Procedure—Part 2, the complete installation was selected, and the procedure continues. A message indicates a previous version of the Advanced Server has been installed on this system.

Example 2–3 Sample Installation Procedure—Part 3

%PWRK-I-VERSION, Checking for OpenVMS version 6.2, or later...

NOTE

----Because this kit provides a new streams execlet for NetBEUI and TCP/IP, you MUST reboot the system to complete installation of PATHWORKS. If you do not reboot the system at this time, you must remember to reboot later before starting PATHWORKS.

To complete the installation of this product, you should reboot the system. If it is not convenient to reboot at this time, then enter NO to the following question.

If you enter NO, the installation procedure will continue.

* Will you allow a system shutdown after this product is installed [YES]?  
* How many minutes for system shutdown [0]:  
* Do you want to do an automatic system reboot [YES]?  
* Do you want to run the IVP after the installation is finished [YES]?  
* Do you want to purge files replaced by this installation [YES]?  

%PWRK-I-FREEBLKS, Checking for 160000 free blocks

******************************************************************************
* You must shut down the Advanced Server before you continue **
* installing PATHWORKS V6 for OpenVMS.  
******************************************************************************

If you do not shut down the server, the installation will terminate.

* Do you want to shut down the Advanced Server [YES]?  

Shutting down the currently running server(s)...

In Example 2–3, Sample Installation Procedure—Part 3, the installation procedure checks that the OpenVMS system for installation of the server is OpenVMS Version 6.2 or later. If it is an earlier version, the installation would abort.
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

The installation procedure then checks for circumstances requiring a system reboot. A reboot might be needed if:

- A previous version of a server driver (PCF or PCI) or of an execlet (PWRK$STREAMSOS_Vn.EXE), was detected in memory. The previous version could be from either an Advanced Server for OpenVMS or PATHWORKS for OpenVMS product. Reboot is required before starting the Advanced Server.

- System parameters were changed (in MODPARAMS.DAT), or server parameters were changed in a way that affected system parameters. Reboot is required before configuring the Advanced Server, as noted in Chapter 1, Before You Install PATHWORKS Advanced Server.

If a Compaq OpenVMS file and print server has been installed and started previously, certain images remain in system memory even after the product has been stopped or removed. As a result, before the Advanced Server can be started, you need to reboot the system to remove the old image from memory.

To help minimize downtime, the installation procedure requests a reboot only if and when necessary. You are not forced to reboot after installation.

In Example 2–3, Sample Installation Procedure—Part 3, software from an earlier version of PATHWORKS for OpenVMS was detected (such as an earlier version of the PWRK$STREAMSOS_Vn.EXE execlet; note that the version, n, corresponds to the version of OpenVMS, not of PATHWORKS). A reboot is necessary unless you do not plan to run the Advanced Server on this system.

The installation procedure gives you the option of delaying the reboot by continuing the procedure. You might want to delay the reboot so that you can complete installation or configuration processes that would be expedient to finish before rebooting. For example, when installing the server on an OpenVMS Cluster, you might want to delay a reboot until you complete the server installation and configuration on all nodes of the cluster.

To delay the reboot, continuing the installation, enter NO at the prompt asking if you will allow a system shutdown after the product is installed. In this example, the reboot is opted for, and then the procedure prompts the installer for the number of minutes to elapse before the shutdown occurs.

The installer is also prompted whether an automatic system reboot is requested, whether the installation verification procedure should be run after the installation, and whether to purge files replaced by this installation or keep previous versions intact. The installation verification procedure (IVP) can be run automatically, as shown in Example 2–5, Sample Installation Procedure—Part 5, or independently of the installation procedure, as described...
Example 2–4 Sample Installation Procedure—Part 4

User Accounts and User Identification Codes (UICs)

PATHWORKS for OpenVMS creates two OpenVMS accounts: a default account, PWRK$DEFAULT, and a guest account, PWRK$GUEST. The default UIC group number for both these new accounts depends on the following:

- If you are installing the server for the first time, the default is the first unused UIC group number, starting with 360.
- If there is an existing account PCFS$ACCOUNT, the default is the UIC group number associated with PCFS$ACCOUNT.
- If there is an existing account PWRK$DEFAULT or PWRK$GUEST, the default is the UIC group number associated with PWRK$DEFAULT or PWRK$GUEST, in preference to PCFS$ACCOUNT. However, the default UIC group number will not be used to change the UIC of any existing accounts.

For more information about UIC group numbers, see the OpenVMS System Manager's Manual.

* Enter default UIC group number for PWRK$DEFAULT and PWRK$GUEST [360]: [Return]

All questions have been answered. The installation of PATHWORKS for OpenVMS will continue.

%PWRK-I-ACCOUNTS, Creating OpenVMS accounts for PWRK$DEFAULT and PWRK$GUEST
%PWRK-I-DEFAULTEXIST, PWRK$DEFAULT account already exists
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%PWRK-I-DEFOBJS, Defining DECnet objects PCX$SERVER and PCSA$MAIL
%PWRK-I-DCLCMDS, Installing PATHWORKS DCL commands
%PWRK-I-SPECIFY, Specifying target directories for the provided files
%PWRK-I-OBSOLETE, Deleting obsolete files

Next Steps

To continue the installation procedure, enter the following command to execute the server configuration command procedure:

$ @SYS$UPDATE:PWRK$CONFIG

(continued on next page)
Installing the PATHWORKS Advanced Server

2.2 Installing the Server

Example 2–4 (Cont.) Sample Installation Procedure—Part 4

For information about the configuration command procedure, see the
PATHWORKS (Advanced Server) Installation and Configuration Guide.

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

In Example 2–4, Sample Installation Procedure—Part 4, the script prompts for
a default UIC group number. It does so only if you are installing the complete
PATHWORKS Advanced Server product. If you do not want to associate the
newly created OpenVMS accounts PWRK$DEFAULT and PWRK$GUEST
with the default user identification code (UIC) group number, specify another
three-digit UIC group number.

At this point, all questions have been answered and the installation process
continues. The installation procedure then reminds the installer to continue
with the configuration process by invoking the PWRK$CONFIG.COM
configuration procedure.

Example 2–5 Sample Installation Procedure—Part 5


Starting Installation Verification Procedure
for PATHWORKS V6.1 for OpenVMS (Advanced Server)

$PWRK-I-NORMAL, IVP completed successfully
Installation of PWRK V6.1 completed at 17:05

Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY
Creating installation data file: VMI$ROOT:[SYSUPD]PWRK061.VMI_DATA

$VMSINSTAL-I-SHUTDOWN, This product requires that the system be
rebooted.

SHUTDOWN -- Perform an Orderly System Shutdown
on node TINMAN

Do you really want to shutdown node TINMAN [NO]? Y
VMSINSTAL procedure done at 17:09

In Example 2–5, Sample Installation Procedure—Part 5, the procedure verifies
the installation, and then finishes.
Table 2–1, Installation Questions includes details about most of the prompts that VMSINSTAL might display, depending on the environment and options you select. Table 2–1, Installation Questions does not show any informational messages. For a complete sample installation script, see Appendix B, Sample Complete Server Installation and Configuration.

### Table 2–1 Installation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your Desired Result</th>
<th>Action or Response Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you satisfied with the backup of your system disk [YES]?</td>
<td>Continue</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Exit</td>
<td>NO</td>
</tr>
<tr>
<td>Select option [2]:¹</td>
<td>Display the release notes on the screen</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td>To stop the display at any time, press Ctrl/C.</td>
</tr>
<tr>
<td></td>
<td>Print the release notes</td>
<td>2 or Return</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You are prompted for a print queue name, and the release notes file is sent to the specified queue (the default print queue is SYS$PRINT).</td>
</tr>
<tr>
<td></td>
<td>Print the release notes and display them on the screen</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>You are prompted for a print queue name, and the release notes file is sent to the specified queue (the default print queue is SYS$PRINT). To stop the screen display at any time, press Ctrl/C.</td>
</tr>
<tr>
<td></td>
<td>Continue without displaying or printing the release notes</td>
<td>4</td>
</tr>
<tr>
<td>Do you want to install the upgrade utility only [NO]?²</td>
<td>Install one or more servers</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Install only the Upgrade utility</td>
<td>YES</td>
</tr>
</tbody>
</table>

¹ This question is displayed only if you specify OPTIONS N when you start the VMSINSTAL command procedure or if there are active processes on the system.
² The release notes are automatically copied to SYS$HELP.

(continued on next page)
## 2.2 Installing the Server

### Table 2–1 (Cont.) Installation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your Desired Result</th>
<th>Action or Response Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to continue the installation [NO]?¹</td>
<td>Continue</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Exit</td>
<td>Return</td>
</tr>
<tr>
<td>Do you want to install the complete PATHWORKS V6.1 for OpenVMS [NO]??</td>
<td>Install the PATHWORKS Advanced Server</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Omit the PATHWORKS Advanced Server</td>
<td>Return</td>
</tr>
<tr>
<td>Do you want to preserve the V5 (LAN Manager) environment [YES]?²</td>
<td>Retain the PATHWORKS V5 for OpenVMS (LAN Manager) environment so that you can use the rollback procedure described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Not retain the V5 environment</td>
<td>NO</td>
</tr>
<tr>
<td>Enter the directory to preserve the V5 environment [SYS$SYSDEVICE:[000000]]:³</td>
<td>Preserve the V5 environment in the default directory shown</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Preserve the V5 environment on another device or in another directory</td>
<td>A different device or directory</td>
</tr>
</tbody>
</table>

¹This question is displayed only if you specify OPTIONS N when you start the VMSINSTAL command procedure or if there are active processes on the system.
²The release notes are automatically copied to SYS$HELP.
³This question is displayed only if your system is currently running the PATHWORKS (LAN Manager).
## Table 2–1 (Cont.) Installation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your Desired Result</th>
<th>Action or Response Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to install the PATHWORKS License Server only [NO]?³</td>
<td>Install the standalone License Server</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This option installs the License Server and transport software</td>
</tr>
<tr>
<td></td>
<td></td>
<td>without the PATHWORKS Advanced Server. Refer to Chapter 4,</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Configuring and Starting the Standalone License Server for</td>
</tr>
<tr>
<td></td>
<td></td>
<td>more information.</td>
</tr>
<tr>
<td></td>
<td>Install the PATHWORKS Advanced Server with the License</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Server</td>
<td>This option causes the installation procedure to proceed to</td>
</tr>
<tr>
<td></td>
<td></td>
<td>the next question.</td>
</tr>
<tr>
<td>Do you want to install only the external authentication images [NO]?²</td>
<td>Install only the external authentication software</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td></td>
<td>This option installs the external authentication software</td>
</tr>
<tr>
<td></td>
<td></td>
<td>without the PATHWORKS Advanced Server.</td>
</tr>
<tr>
<td></td>
<td>Install the complete PATHWORKS Advanced Server or install</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>the standalone License Server</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>This option causes the installation procedure to repeat</td>
</tr>
<tr>
<td></td>
<td></td>
<td>previous questions so that you can select the complete</td>
</tr>
<tr>
<td></td>
<td></td>
<td>PATHWORKS Advanced Server or only the License Server.</td>
</tr>
<tr>
<td>Is the selection correct [YES]?</td>
<td>Use the selection</td>
<td>Return</td>
</tr>
<tr>
<td>Change the selection</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terminate the installation</td>
<td>NO</td>
<td>Ctrl/Y</td>
</tr>
</tbody>
</table>

Will you allow a system shutdown after this product is installed [YES]?  
Shut down the system as part of the product installation procedure  
Return

³This question is displayed only if you chose to preserve the PATHWORKS V5 for OpenVMS (LAN Manager) environment.
## Installing the PATHWORKS Advanced Server

### 2.2 Installing the Server

#### Table 2–1 (Cont.) Installation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your Desired Result</th>
<th>Action or Response Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete the installation procedure without shutting down the system</td>
<td>NO</td>
<td>System shutdown is required, to complete the product installation. If you answer NO, you must shut down the system manually after the installation procedure is finished.</td>
</tr>
<tr>
<td>Do you want to do an automatic system reboot [YES]?</td>
<td>Reboot the system automatically after system shutdown</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Reboot the system manually</td>
<td>NO</td>
</tr>
<tr>
<td>Do you want to run the IVP after the installation is finished [YES]?</td>
<td>Run the Installation Verification Procedure (IVP) automatically after the installation procedure completes</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Not run the IVP</td>
<td>NO</td>
</tr>
<tr>
<td>You can run the IVP independent of the installation procedure. For detailed information on running the IVP independently, see Section 5.2, Verifying the PATHWORKS for OpenVMS (Advanced Server) Installation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you want to purge files replaced by this installation [YES]?</td>
<td>Purge all files it replaces</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Not purge any files it replaces</td>
<td>NO</td>
</tr>
<tr>
<td>Do you want to continue with the installation [YES]?</td>
<td>Delete the files and continue the installation</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Leave the files intact and terminate the installation</td>
<td>NO</td>
</tr>
</tbody>
</table>

---

5This question is displayed only if you chose not to install the PATHWORKS Advanced Server.

(continued on next page)
## 2.2 Installing the Server

### Table 2–1 (Cont.) Installation Questions

<table>
<thead>
<tr>
<th>Question</th>
<th>Your Desired Result</th>
<th>Action or Response Required</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to shut down the PATHWORKS License Server [YES]?(^6)</td>
<td>Shut down the License Server and continue the installation</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Keep the server running and terminate the installation</td>
<td>NO</td>
</tr>
<tr>
<td>Do you want to shut down the PATHWORKS Advanced Server [YES]?(^6)</td>
<td>Shut down the server and continue the installation</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Keep the server running and terminate the installation</td>
<td>NO</td>
</tr>
<tr>
<td>Enter default UIC group number for PWRK$DEFAULT and PWRK$GUEST[nnn]:</td>
<td>Associate the newly created OpenVMS accounts PWRK$DEFAULT and PWRK$GUEST with the default user identification code (UIC) group number (nnn)</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Associate the newly created accounts with the UIC group number you specify</td>
<td>A three-digit UIC number. For detailed information about UIC group numbers, see the OpenVMS System Manager’s Manual.</td>
</tr>
</tbody>
</table>

\(^6\)This question is displayed only if there are PATHWORKS files in system-specific directories.

### 2.2.4 What To Do After the Installation Completes

If you have installed the external authentication images only, you can proceed to enable external authentication, as explained in Section 5.6, Setting Up External Authentication. For other installations, do the following after the installation completes:

1. If you had a previous version of the Advanced Server running on your system, reboot your system before configuring the newly installed Advanced Server. See the discussion in the explanatory text following Example 2–3, Sample Installation Procedure—Part 3.

2. Proceed to Chapter 3 to configure the PATHWORKS Advanced Server.

Appendix F, PATHWORKS Advanced Server Files and On-Disk Structure, lists and describes files created by the installation procedure.
Installing the PATHWORKS Advanced Server
2.3 Troubleshooting Installation Problems

2.3 Troubleshooting Installation Problems

The following sections describe some problems you can encounter if you install the PATHWORKS Advanced Server in an environment that is not appropriate.

2.3.1 Installing PATHWORKS Advanced Server on a System Running Another Advanced Server Image

If you attempt to install the PATHWORKS Advanced Server on a system, or anywhere in a cluster, on which a PATHWORKS for OpenVMS or Advanced Server for OpenVMS image is running, the installation procedure displays a message such as the following:

*******************************************************************
* You must shut down the Advanced Servers on all nodes in the ** cluster before you continue installing PATHWORKS V6 for OpenVMS.*
*******************************************************************

If you do not shut down the servers, the installation will terminate.

Shut down the servers on all nodes in the cluster before continuing your installation.

2.3.2 Installing the PATHWORKS Advanced Server on a System with the NetWare Server

The PATHWORKS Advanced Server cannot be installed on a system where the NetWare server is installed. If you attempt to install the PATHWORKS Advanced Server on a system where the NetWare server is installed, the installation procedure optionally invokes the NetWare server software removal procedure (SYS$STARTUP:PWVN$DEINSTAL.COM).

When the installation procedure detects the presence of the NetWare server, it displays the following message and question:

%PWRKV60-E-OLDVERPWNV, PATHWORKS V6.0-nnnx for OpenVMS (NetWare)
was previously installed. This product is no longer supported.
To install the PATHWORKS V6.1 for OpenVMS product, the NetWare product must be deinstalled.

* Will you allow this installation procedure to deinstall
  * the NetWare product [NO]?

To remove the NetWare server software, enter YES.

To terminate the installation procedure without removing the NetWare server software, enter NO, or press [Return].
You can remove the NetWare server manually using the procedure in Section 7.2, Removing the PATHWORKS NetWare Server. Then start the VMSINSTALL procedure again after the NetWare server has been removed.

2.3.3 Installing PATHWORKS Advanced Server on a System with PATHWORKS (LAN Manager)

You can upgrade PATHWORKS V5 for OpenVMS (Advanced Server) to PATHWORKS V6 for OpenVMS (Advanced Server). If the system has PATHWORKS (LAN Manager) installed, you can use the Upgrade utility, as described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide, to upgrade server information before you configure and start the PATHWORKS Advanced Server.

2.3.4 Installing the Standalone License Server on a System Where the PATHWORKS Advanced Server Has Been Installed

If you install the standalone License Server on a system where the PATHWORKS Advanced Server has been installed, the installation procedure displays the following message:

The PATHWORKS Advanced Server was previously installed and you have selected to install the License Server only. Because the PATHWORKS Advanced Server includes the License Server, the complete PATHWORKS Advanced Server must be installed.

The installation procedure will choose to install the PATHWORKS Advanced Server. You have the option of continuing with this installation, or you can terminate the installation procedure by pressing Ctrl/Y. To install the standalone License Server on this system, you must first remove the PATHWORKS Advanced Server software using the PWRK$DEINSTAL.COM command procedure, as described in Chapter 7, Removing PATHWORKS Advanced Server Software. Then start the VMSINSTALL procedure again.

For a sample installation and configuration script for the standalone license server, see Appendix C, Sample Standalone License Server Installation and Configuration.

2.3.5 Installing the External Authentication Software

You cannot install the external authentication software only, if you have previously installed the PATHWORKS Advanced Server. The installation procedure displays the following message if you try to install the external authentication images under these circumstances:
2.3 Troubleshooting Installation Problems

The PATHWORKS Advanced Server was previously installed, and you have selected to install the external authentication images only. Because the PATHWORKS Advanced Server includes the external authentication images, the complete PATHWORKS Advanced Server must also be installed.

You must remove the PATHWORKS Advanced Server software to be able to select this option. To remove PATHWORKS Advanced Server software, run the PWRK$DEINSTALL procedure, as described in Chapter 7, Removing PATHWORKS Advanced Server Software.

For a sample installation script for the external authentication images, see Appendix E, Sample External Authentication Installation.

2.4 Next Steps

To continue, depending on the software you are installing, proceed as indicated in the following table:

<table>
<thead>
<tr>
<th>Software Installed</th>
<th>Where to Go Next in the Documentation</th>
<th>What Is Described There</th>
</tr>
</thead>
<tbody>
<tr>
<td>PATHWORKS Advanced Server (file and print server)</td>
<td>Chapter 3, Configuring the PATHWORKS Advanced Server</td>
<td>Configure the PATHWORKS Advanced Server.</td>
</tr>
<tr>
<td>Standalone license server</td>
<td>Chapter 4, Configuring and Starting the Standalone License Server</td>
<td>Configure the standalone license server.</td>
</tr>
<tr>
<td>Upgrade utility only</td>
<td>Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide</td>
<td>Use the Upgrade utility to create and edit upgrade reports.</td>
</tr>
<tr>
<td>Standalone external authentication software</td>
<td>Section 5.6, Setting Up External Authentication</td>
<td>Set up PATHWORKS external authentication on the system.</td>
</tr>
</tbody>
</table>
3

Configuring the PATHWORKS Advanced Server

This chapter describes how to configure the PATHWORKS Advanced Server and consists of the following sections:

• Section 3.1, About the Advanced Server Configuration Procedure
• Section 3.2, Before You Start the Advanced Server Configuration Procedure
• Section 3.3, How to Start the Advanced Server Configuration Procedure
• Section 3.4, How to Respond to Advanced Server Configuration Prompts
• Section 3.5, How to Change Default Configuration Settings
• Section 3.6, Configuring the Advanced Server Domain Role
• Section 3.7, Troubleshooting Configuration Procedure Problems
• Section 3.8, The Advanced Server Network Adapter
• Section 3.9, Next Steps

3.1 About the Advanced Server Configuration Procedure

The Advanced Server initial configuration procedure, PWRK$CONFIG.COM, is installed by the PATHWORKS Advanced Server installation procedure. Like the installation procedure, the configuration procedure asks you a series of questions (by displaying prompts). The procedure uses your answers to configure the PATHWORKS Advanced Server.

You can use the PWRK$CONFIG.COM configuration procedure to reconfigure the server at any time later. Note that the script contents change after the first configuration.
3.1 About the Advanced Server Configuration Procedure

3.1.1 What the Configuration Procedure Does

PWRK$CONFIG.COM is a command procedure that:

- Creates the PATHWORKS Advanced Server on-disk structure. (Appendix F, PATHWORKS Advanced Server Files and On-Disk Structure, shows the on-disk structure).
- Upgrades any existing file and print server user account and share databases, such as when upgrading the server from a previous version.
- If configuring a previously configured server, stores the original accounts database in specially-created directories. (For more information, see Section 3.7.2, If Problems Occur When Reconfiguring the Advanced Server.)
- Allows you to enter the Configuration Manager to modify system configuration parameters and to verify the configuration setting against the available system resources. For example, you can specify the transports the server will run and the maximum number of clients that can connect to the server simultaneously.
  For more information about the Configuration Manager, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator's Guide.
- Creates the PATHWORKS Advanced Server user account and share databases.
- Allows you to modify server configuration default settings such as server role, domain name, and the services that are enabled.
- On a server that will run as a primary domain controller or member server, allows you to specify the Administrator account password.
- Gives you the option of starting the server.

After you install the server, you must run PWRK$CONFIG.COM before you can start the server. In an OpenVMS Cluster, before you start the server on any node, you must run PWRK$CONFIG.COM on each node where you plan to run the server. Although the nodes in an OpenVMS Cluster function as a single unit in a domain, treat them as individual units for purposes of configuration.
3.2 Before You Start the Advanced Server Configuration Procedure

Before you start the PWRK$CONFIG.COM command procedure, check that the ENQLM quota system process parameter for the user account from which you will run the PWRK$CONFIG.COM procedure is set to a value of 500 or greater. For information on how to determine the current setting and how to increase the value, see Section 1.9.7, Step 7: Check ENQLM Process Quota. In addition, check the system parameters discussed in Section 1.9.6, Step 6: Check System Parameters.

Be prepared to answer the questions discussed in the following sections. The questions asked by PWRK$CONFIG.COM depend on the options you select and on such factors as server role and whether you are configuring the server to join a new or existing domain.

3.2.1 On What OpenVMS Disk Device Do You Want to Store the Advanced Server Data Files?

The data files include:

- Configuration parameter files
- License Server data files
- Log files
- Printer spool files
- Server data files
- Security Account Manager (SAM) database files
- Client-based server administration tools and license kits
- Virtual memory section files

By default, the configuration procedure copies the data files to the system device (SYS$SYSDEVICE). However, you can specify any existing OpenVMS disk device that has at least 85,000 free blocks of disk space. The amount needed depends on the components installed.

When you select a disk for the Advanced Server data files, keep the following in mind:

- The Advanced Server frequently accesses the data files copied to the specified disk device, which generates input to and output from the disk. Having these operations occur on the system disk can degrade the performance of both the OpenVMS system and the Advanced Server.
Therefore, Compaq recommends that you specify a disk device other than the system disk.

- On an OpenVMS Cluster with multiple system disks, all nodes on which you plan to run the Advanced Server must use the same disk device to store and access Advanced Server data files. Using separate disks on separate cluster members is strictly prohibited.

- You can run the PWRK$CONFIG.COM command procedure at any time, to change the disk device where Advanced Server data files are stored. PWRK$CONFIG.COM automatically copies the data files to the new location and deletes the data files from the current location.

### 3.2.2 Do You Want to Change the System Configuration Parameters Now?

If you respond "YES" to the prompt to change the system configuration parameters, the Configuration Manager starts. The Configuration Manager is a utility that allows you to modify and verify the system environment configuration parameter settings, such as the maximum number of clients that can connect to the server, the percentage of physical memory the server can use, and which network transports the server uses.

You can change the system configuration parameter settings after starting the Advanced Server by using the Configuration Manager (invoking the Configuration Manager with the ADMINISTER/CONFIGURATION command at the DCL prompt). For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator's Guide. Section B.2, Sample Server Configuration, shows the basic Configuration Manager screen displayed when you opt to change the system configuration parameter settings during use of PWRK$CONFIG.COM.

### 3.2.2.1 Configuring Transports for a Backup Domain Controller or Member Server

If you are configuring a server as a backup domain controller (BDC) or a member server, you must select at least one transport that is also used by the primary domain controller (PDC). Otherwise, the configuration will fail.

When you select the transports to run on a server that will participate in wide area networking, keep the following in mind:

- In a wide area network, the TCP/IP transport is required. (DECnet also supports wide area networks but the functionality it provides is not as extensive as that provided by TCP/IP.) In a cluster, all Advanced Server members must be in the same subnet.
3.2 Before You Start the Advanced Server Configuration Procedure

- If you are configuring a BDC or member server to join an existing domain where the PDC is on a different TCP/IP subnet, both the server you are configuring and the PDC must be configured to use the TCP/IP transport, and you must set up wide area networking using either a WINS (Windows Internet Name Service) Server, a Domain Name System (DNS) server, or an LMHOSTS file for NetBIOS name resolution, as described in Chapter 6, Implementing a Wide Area Network. (You can select one, two, or all three of these methods for name resolution.)

- If you are using WINS for network name resolution, the PDC and any BDCs and member servers should use a WINS Server to provide NetBIOS name resolution.

  If your Advanced Server will run in an OpenVMS Cluster, to gain the benefits of load balancing and failover, clients should connect to the Advanced Server using the Advanced Server cluster alias. However, the Advanced Server does not dynamically register the Advanced Server cluster alias with the WINS server. Therefore, you should define a static multihomed entry for the Advanced Server alias in the WINS database. For more information, see Section 6.3.1, Setting up WINS Support for OpenVMS Clusters. If you plan to use DNS for NetBIOS name resolution, you do not define this static multihomed entry in the WINS database. (If Windows 95, Windows 98, or Windows NT clients are configured to use both WINS and DNS for NetBIOS name resolution, they first query the WINS server to resolve the name.)

- If you are using the LMHOSTS file, it must be set up on the PDC as well as the BDCs and member servers. Before you configure any BDC or member server that is not on the same subnet as the PDC, make sure that a special NetBIOS name entry for the PDC is in the LMHOSTS file on that BDC or member server; otherwise, the BDC or member server will not find the PDC and will fail to join the existing domain. This NetBIOS name entry should be the same as the domain name, space padded to 15 characters, with the hexadecimal control character 1B appended to it. You map the IP address of the PDC to this special name. For example, if the domain name is LANGROUP and the PDC of LANGROUP is DOMPDC with an IP address of 10.20.30.40, the BDCs and member servers would need to add the following lines to their LMHOSTS file:

  10.20.30.40 DOMPDC #PRE #DOM:LANGROUP
  10.20.30.40 "LANGROUP \0x1B" #PRE

  Note that the total number of characters within the quotes should always be 20 characters (the domain name padded to 15 characters, plus the five characters required for the hexadecimal control character (\0x1B)).
Configuring the PATHWORKS Advanced Server
3.2 Before You Start the Advanced Server Configuration Procedure

For more information, see Chapter 6, Implementing a Wide Area Network.

If your Advanced Server will run in an OpenVMS Cluster, other domain controllers (including the PDC) that are not in the same subnet as the Advanced Server cluster must add an entry for the Advanced Server cluster alias to their LMHOSTS file. This assumes they are not using other methods (WINS or DNS) for resolving NetBIOS names. For domain operations, all the domain controllers in the cluster operate as a single domain controller identified by the Advanced Server cluster alias name, rather than by the specific computer names of the individual cluster members. However, because the LMHOSTS file does not offer any means for mapping multiple IP addresses to a single NetBIOS name, the entry for the Advanced Server cluster alias must be mapped to the IP address of one specific server cluster member. If the Advanced Server is stopped on that cluster member, you must modify the LMHOSTS file on all clients and servers to map the cluster alias name to the IP address of a cluster member on which the Advanced Server is still running. On systems running a Microsoft Windows operating system, the NetBIOS name cache must also be reloaded using the command NBTSTAT -R (capital R required).

Due to the LMHOSTS limitations noted above, it is difficult (and perhaps unmanageable) to gain the benefits of load balancing and failover using an LMHOSTS file.

- If your Advanced Server runs in an OpenVMS Cluster and you have it set up for cluster load balancing using DNS, then enable the use of DNS for NetBIOS name resolution on all servers and clients. Remove any entries for the Advanced Server cluster alias from the LMHOSTS file and WINS database. Compaq strongly recommends that the Advanced Server cluster alias not be the same as the TCP/IP cluster alias (referred to as the TCP/IP cluster impersonator name). For information on setting up load balancing, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

To enable any of the wide area networking implementations, select them using the Configuration Manager, as described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.
3.2.3 Do You Want to Change Any of the Server Configuration Settings?

The server configuration settings determine:

- **Whether the License Server runs**
  
The License Server is a software program that you can run on your OpenVMS system to grant client-based licenses. Any client that wants to use server resources must have a valid license. Each local area network (LAN) needs only one License Server. The client license product authorization keys (PAKs) must be loaded on the system that runs the License Server.

  In an OpenVMS Cluster, the PAKs must be loaded in a shared license database available to all cluster members.

  The License Server runs only if you enable it with the configuration procedure.

  - If you are using client-based licensing, you must run the License Server. Compaq recommends that you run the License Server on a different system than the Advanced Server. See Section 1.4, About Licensing, for more information.

  - If you are using server-based licenses, you do not need to run the License Server.

  By default, the License Server does not run.

- **Whether the Timesource service runs**
  
The Timesource service allows your server to act as a time server. Other servers on the network can synchronize with the time server to coordinate network events (for example, running batch programs on all computers the same time each day). Each LAN needs only one time server.

  By default, the Timesource service does not run.

- **Whether the Alerter service runs**
  
The Alerter service sends messages called alerts to servers and clients that run the Messenger service.

  By default, the Alerter service runs.

- **Names of the users who receive alert messages**
  
  By default, alert messages are sent to the Administrator account.

- **Whether the NetLogon service is enabled**
In a domain, the NetLogon service distributes a domain-wide user accounts database to all domain controllers running NetLogon. The service allows for single domain-wide logon that enables users to access resources on any server in the domain. The NetLogon service is required for smooth operation of the domain; Compaq recommends that the NetLogon service always be enabled, even on a member server.

By default, the NetLogon service runs.

- **Domain name**
  This is the domain in which your server is located. A domain is a subdivision of clients and servers on the network. For more information on domains, refer to the Compaq Advanced Server for OpenVMS Concepts and Planning Guide and the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.
  The default domain name is LANGROUP. You can specify a name that reflects your company or group.

- **Role of the server**
  This is the role of the server in the domain. You can designate an Advanced Server as either the primary domain controller (PDC), a backup domain controller (BDC), or a member server. When you install the Advanced Server in a new domain, the new server becomes the PDC by default. In an OpenVMS Cluster, all nodes on the cluster have the same role: when you change the role of one, the change applies to all the servers on the cluster.
  For more details on configuring the server domain role, see Section 3.6, Configuring the Advanced Server Domain Role.

- **Computer name**
  This unique name identifies your server in the domain. You define this name or accept the default value when you run the configuration procedure. The PWRK$CONFIG.COM procedure will not prevent you from specifying the same named PDC if another node or cluster has previously been defined and is running in that role. However, on the new (duplicate) PDC, the NetLogon service will not be started. The PDC must be unique in the domain.
  The default computer name is the same as the server’s SCSNODE name.

- **Advanced Server cluster alias**
Configuring the PATHWORKS Advanced Server
3.2 Before You Start the Advanced Server Configuration Procedure

If your server is a member of an OpenVMS Cluster, this is the name that all servers in the cluster share. The alias lets remote nodes (including clients) treat all server members in the cluster as a single server. For example, a client user can specify the Advanced Server cluster alias to connect to any server in the cluster; the user need not know the specific node in the cluster to which it is connected.

If DECnet has been configured to run in the cluster, the default Advanced Server cluster alias is the same as the DECnet cluster alias. If a DECnet alias is not defined, the default Advanced Server cluster alias is nodename_ALIAS, where nodename is the SCSNODE name of the cluster member from which you initially run PWRK$CONFIG.COM.

---

Note

Compaq strongly recommends that the Advanced Server cluster alias and the TCP/IP cluster alias (referred to as the TCP/IP impersonator cluster name) be different.

Do not use the name of the domain as the Advanced Server cluster alias; if they are the same, the NetLogon service will fail to start.

---

- Server announce comment
  
  This is the text that the Advanced Server displays when it announces its presence on the network and when you display a list of available servers.

  The default server announce comment is “PATHWORKS V6.1 for OpenVMS (Advanced Server).”

For more information about changing configuration settings, see Section 3.5, How to Change Default Configuration Settings.

For more information about each server configuration setting, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

3.2.4 What Do You Want the Administrator Account Password to Be?

If you are configuring a PDC, the configuration procedure prompts you to specify the password to be set for the domain Administrator account. If you are configuring a member server, the configuration procedure prompts you for the member server’s local Administrator account password to be set. The member server’s local Administrator account password gives access to the member server’s local security account database. As with Windows NT, there may be situations where you would like to allow certain people to manage a member
Configuring the PATHWORKS Advanced Server
3.2 Before You Start the Advanced Server Configuration Procedure

server’s local database without giving them the ability to manage the entire domain.

Passwords are case sensitive and can contain up to 14 characters. Valid characters are alphanumeric characters and any of the following special characters:

! #$%& () . ^ _ `{ ~

3.2.5 Are You Going to Supply Account/Password Information?

If you are configuring your server to join an existing domain (as a BDC or member server), you can either:

• Have the computer added to the domain manually by the domain administrator
• Have the computer added by supplying an administrator account user name and password during execution of the configuration procedure

The former option is useful if the domain administrator does not wish to give out the user name and password of the Administrator account in the domain to the person configuring this server to join the domain. The domain administrator can use the ADMINISTER ADD COMPUTER command or the Windows NT Server Manager to add the computer to the domain. If this is the case, answer NO to this prompt, and you will not be prompted for account/password information.

With the latter option, the configuration procedure requests the domain’s PDC to add the computer to the domain. You will be prompted for a domain administrator account user name and password, as explained in Section 3.2.6, What Is the Domain Administrator Password?.

3.2.6 What Is the Domain Administrator Password?

When you choose to have the computer added automatically by the configuration procedure, you are prompted for a domain administrator account user name and password. As noted in Section 3.2.5, Are You Going to Supply Account/Password Information?, the PDC is requested to add the computer to the domain. The PDC validates the account user name and password on behalf of the configuration procedure. Enter the password, observing the rules specified in Section 3.2.4, What Do You Want the Administrator Account Password to Be?
3.2 Before You Start the Advanced Server Configuration Procedure

3.2.7 Do You Want to Enter a New Administrator Account Password?
In certain cases, you are prompted whether you want to enter a new Administrator password. This gives you the opportunity to change the password.

3.2.8 Do You Want to Start the Server?
The configuration procedure asks you if you want to start the Advanced Server. If you do not want to start the Advanced Server at this time, you can do so later from the command line after the configuration procedure completes.

Before you start the server on any OpenVMS Cluster member, Compaq recommends that you configure the Advanced Server on each cluster member that you want to use as a server. You can then use the SYSMAN utility to start the server on all cluster members. If you choose to start the server individually on each cluster member, make sure that you do so from the SYSTEM account (or a similar account) on each server node. For more information, see Section 5.3.5, How to Start the PATHWORKS Advanced Server in an OpenVMS Cluster.

For detailed information on alternate ways to start the server, see Section 5.3, Starting the PATHWORKS Advanced Server.

3.3 How to Start the Advanced Server Configuration Procedure

After the installation procedure completes, the OpenVMS system prompt ($) is displayed. If the system was rebooted following installation, log in to the SYSTEM account or an equivalent account. If the system was not rebooted, ensure that you are logged in to such an account. Then, start the configuration procedure by entering:

$ @SYS$UPDATE:PWRK$CONFIG

In an OpenVMS Cluster, PWRK$CONFIG.COM must be run on each member node on which the server is to run. If you first start the server at any node, and then attempt to run the PWRK$CONFIG.COM configuration procedure, the procedure will shut down the server.
3.4 How to Respond to Advanced Server Configuration Prompts

Table 3–1, PATHWORKS Advanced Server Configuration Prompts, tells you how to respond to the prompts that PWRK$CONFIG.COM displays.

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Result</th>
<th>Your Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to continue with configuration [YES]:(^1)</td>
<td>Shut down the server or, if your server is part of an OpenVMS Cluster, all servers in the cluster</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>Abort the configuration procedure</td>
<td>NO</td>
</tr>
<tr>
<td>Enter disk device name where PATHWORKS data files will be stored [default_device]:</td>
<td>Copy the PATHWORKS on-disk structure to the default OpenVMS disk device displayed. If you ran PWRK$CONFIG.COM previously, the default disk device is the one you specified the last time you configured the server.</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>Copy the PATHWORKS on-disk structure to an OpenVMS disk device different from the default displayed</td>
<td>device_name</td>
</tr>
<tr>
<td>Do you want to change the server configuration parameters now? [YES]:</td>
<td>Access the Configuration Manager tool to change parameters affecting the system environment for the server</td>
<td>Press the Return key</td>
</tr>
</tbody>
</table>

\(^1\)This prompt is displayed only if the server is running.

Note

Table 3–1 shows only the prompts PWRK$CONFIG.COM displays; it does not show any informational messages. For a complete sample configuration script, see Appendix B, Sample Complete Server Installation and Configuration.
### Table 3–1 (Cont.) PATHWORKS Advanced Server Configuration Prompts

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Result</th>
<th>Your Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete the configuration without entering the Configuration Manager</td>
<td>NO</td>
<td></td>
</tr>
<tr>
<td>Enter item number, or RETURN to use these values [DONE]:</td>
<td>Accept the server configuration parameters displayed (these are the ten or so</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>parameters that directly affect or define the server software configuration)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Change the configuration settings displayed</td>
<td>The number associated with a</td>
</tr>
<tr>
<td></td>
<td></td>
<td>setting you want to change.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>For detailed information on</td>
</tr>
<tr>
<td></td>
<td></td>
<td>changing these default</td>
</tr>
<tr>
<td></td>
<td></td>
<td>configuration settings, see</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Section 3.5, How to Change</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Default Configuration Settings.</td>
</tr>
<tr>
<td>Are you going to supply account/password information? [YES](^4)</td>
<td>Have the computer added automatically by PWRK$CONFIG.COM, prompting you for a</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>domain administrator account user name and password</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have the computer added manually (for example, by the domain administrator) so</td>
<td>NO</td>
</tr>
<tr>
<td></td>
<td>that the domain administrator’s password need not be divulged</td>
<td></td>
</tr>
<tr>
<td>Enter the name of the primary domain controller for domain domain-name(^5)</td>
<td>Enter the name of the primary domain controller (PDC) for the domain your server</td>
<td>PDC-name</td>
</tr>
<tr>
<td>Enter Administrator account password:(^3)</td>
<td>Associate a password with the Administrator account password</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Enter the password to be set for the domain’s existing Administrator account.</td>
<td></td>
</tr>
</tbody>
</table>

\(^3\)This prompt is displayed if you are configuring a primary domain controller.

\(^4\)This prompt is displayed if you are configuring a BDC or member server (joining an existing domain).

(continued on next page)
### 3.4 How to Respond to Advanced Server Configuration Prompts

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Result</th>
<th>Your Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you want to enter a new Administrator account password [NO]:2,3</td>
<td>Keep the existing Administrator account password</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>Prompt you to enter a new Administrator account password</td>
<td>YES</td>
</tr>
<tr>
<td>Re-enter to verify password</td>
<td></td>
<td>password</td>
</tr>
<tr>
<td>Enter a password for this member server's local Administrator account:5</td>
<td>Associate a password with the member server's local Administrator account</td>
<td>password</td>
</tr>
<tr>
<td></td>
<td>Enter the password to be set for the member server's local Administrator account.</td>
<td></td>
</tr>
<tr>
<td>Enter the account password in the required case6</td>
<td></td>
<td>password</td>
</tr>
<tr>
<td></td>
<td>Enter the password in the proper case, matching the current domain account password.</td>
<td></td>
</tr>
<tr>
<td>Do you want to start PATHWORKS V6.1 for OpenVMS on node node_name now [YES]:6</td>
<td>Start the server automatically after the installation procedure completes</td>
<td>Press the Return key</td>
</tr>
<tr>
<td></td>
<td>Not start the server</td>
<td>NO</td>
</tr>
</tbody>
</table>

2This prompt is displayed if you ran PWRK$CONFIG.COM previously.
3This prompt is displayed if you are configuring a primary domain controller.
4This prompt is displayed if you are configuring a BDC or member server (joining an existing domain).
5This prompt is displayed if you are configuring a member server.
6This prompt is displayed only if the Advanced Server can be started without first executing AUTOGEN or rebooting the system.

### 3.5 How to Change Default Configuration Settings

After you exit the Configuration Manager, the configuration procedure displays a list of server configuration settings and a prompt that lets you change them; for example:
Configuring the PATHWORKS Advanced Server
3.5 How to Change Default Configuration Settings

Advanced Server for OpenVMS is presently configured to run as follows:

1. Run the License Server: NO
2. Enable Timesource service: NO
3. Enable Alerter service: YES
3a. Alert user names: Administrator
4. Enable Netlogon service: YES
5. Advanced Server domain: LANGROUP
6. Advanced Server role: PRIMARY
7. Advanced Server computer name: COBRAZ
7a. Advanced Server OpenVMS Cluster alias: COBRAZ_ALIAS
8. Server announce comment: PATHWORKS V6.1 for OpenVMS

Enter item number, or RETURN to use these values [DONE]:

• To change a server configuration setting, enter the number of the setting you want to change. A prompt is then displayed that lets you change that setting. Table 3–2, Configuration Settings, describes possible values for each setting.

• To save the settings after you complete your changes or to accept the settings displayed, press the Return key to use the default answer DONE. For more information about server configuration, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

Table 3–2 Configuration Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Possible Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Run the License Server:</td>
<td>YES, to run the License Server. NO, to use the default and not run the License Server.</td>
</tr>
<tr>
<td>2. Enable Timesource service:</td>
<td>YES, to enable the Timesource service. NO, to use the default and not enable the Timesource service.</td>
</tr>
<tr>
<td>3. Enable Alerter service:</td>
<td>YES, to accept the default and enable the Alerter service. NO, to disable the Alerter service.</td>
</tr>
<tr>
<td>3a. Alert user names:</td>
<td>A comma-delimited list of user names (each containing up to 20 characters), who can receive alert messages.</td>
</tr>
<tr>
<td>4. Enable Netlogon service:</td>
<td>YES, to accept the default and enable the NetLogon service. NO, to disable the NetLogon service.</td>
</tr>
</tbody>
</table>

1Displayed only if Alerter service is enabled.
2Compaq recommends that the NetLogon service always be enabled, even on a member server.

(continued on next page)
### Table 3–2 (Cont.) Configuration Settings

<table>
<thead>
<tr>
<th>Setting</th>
<th>Possible Values</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Advanced Server domain:</td>
<td>A domain name of up to 15 characters. Press the Return key to use the default. The default domain name is LANGROUP. You can specify a name that reflects your company or group.</td>
</tr>
<tr>
<td>6. Advanced Server role:</td>
<td>PRIMARY, to designate the server as the PDC backup, to designate the server as a BDC. MEMBER, to designate the server as a member server. For more information on configuring the domain role, see Section 3.6, Configuring the Advanced Server Domain Role.</td>
</tr>
<tr>
<td>7. Advanced Server computer name:</td>
<td>A computer name of up to 15 characters. Press the Return key to use the default. If this is the first time running the configuration procedure, the default is your system’s SCSNODE name.</td>
</tr>
<tr>
<td>7a. Advanced Server OpenVMS Cluster alias:</td>
<td>The Advanced Server cluster alias for the OpenVMS Cluster to which your server belongs. Press the Return key to use the default. If DECnet is configured to run, the default is the DECnet cluster alias. If DECnet is not configured to run, the default is nodename_ALIAS.</td>
</tr>
<tr>
<td>8. Server announce comment:</td>
<td>A text string of up to 48 characters that the server uses to announce its presence on the network. Do not use the following characters: &quot; / \ [ ] : ;</td>
</tr>
</tbody>
</table>

3Displayed only in an OpenVMS Cluster.

### 3.6 Configuring the Advanced Server Domain Role

Depending on the domain type, the Advanced Server can participate in a domain as the PDC, a BDC, or a member server.

The Advanced Server may participate in three kinds of domains:

- Windows NT domains, in which Advanced Servers can participate as a PDC, BDCs, and member servers.
Configuring the PATHWORKS Advanced Server
3.6 Configuring the Advanced Server Domain Role

• Windows 2000 mixed-mode domains, which are domains that include both Windows 2000 domain controllers and Windows NT or Compaq Advanced Server domain controllers; Advanced Servers can participate as BDCs and as member servers.

• Windows 2000 native-mode domains (also referred to as pure Windows 2000 domains), which are domains in which all domain controllers are Windows 2000 systems; Advanced Servers can participate as member servers only.

Table 3–3, Advanced Server Roles in Different Domain Types, lists for each type of domain the roles the server can take.

<table>
<thead>
<tr>
<th>Domain Type</th>
<th>PDC</th>
<th>BDC</th>
<th>Member Server</th>
</tr>
</thead>
<tbody>
<tr>
<td>Windows NT</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
<tr>
<td>Windows 2000</td>
<td></td>
<td>X</td>
<td></td>
</tr>
<tr>
<td>mixed mode</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Windows 2000</td>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td>native mode</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 3–3 Advanced Server Roles in Different Domain Types

Each Windows NT domain must have one PDC. The PDC stores the domain’s master copy of the security accounts database.

When you install the Advanced Server to create a new Windows NT domain, the new server becomes the PDC by default. When you install server software and specify an existing domain name, the server can join the existing domain only as a BDC or member server.

A domain does not require BDCs, but one or more are recommended. A BDC keeps a copy of the domain’s master security accounts database. The copy of the security accounts database stored on BDCs is synchronized with the PDC’s master database. In this way, PDCs and BDCs can validate logon requests in the domain.

A member server does not store a copy of the domain’s security accounts database and does not validate logon requests. Member servers rely on domain controllers to validate credentials of users requesting access to member server shares. The advantages of configuring the Advanced Server as a member server are listed in Section 3.6.1, Configuring the Advanced Server as a Member Server.
In an OpenVMS Cluster, all nodes on the cluster must have the same role. If you change the role of one node, the other nodes are automatically changed to that role.

When you configure the Advanced Server for the first time, you select the role your server will perform in the domain. At times you may need to change the role of your server. The method you use to change the server depends on the current role of the server and the role to which you want to change it. To change the role of the server from a BDC to a PDC, or from a PDC to a BDC, use the ADMINISTER SET COMPUTER/ROLE command. To change a server BDC to a member server, you must use PWRK$CONFIG.COM, as explained in Section 3.6.1, Configuring the Advanced Server as a Member Server. To change a PDC to a member server, you must first promote another BDC to a PDC; then the original PDC is demoted automatically to a BDC, after which you can use PWRK$CONFIG.COM to change it to a member server. Use PWRK$CONFIG.COM also to change a member server to a BDC. (This restriction is similar to but less restrictive than that of Windows NT, which requires the operating system to be reinstalled to change a domain controller to a member server, or vice versa.) For more information on changing the role of the server from a BDC to a PDC, or vice versa, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide. Table 3–4, Methods for Changing Server Roles, summarizes which role changes are allowed and disallowed by PWRK$CONFIG.COM.

Table 3–4 Methods for Changing Server Roles

<table>
<thead>
<tr>
<th>From:</th>
<th>To:</th>
<th>Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>BDC</td>
<td>PDC</td>
<td>Use ADMINISTER SET COMPUTER/ROLE command to promote the BDC to a PDC.</td>
</tr>
<tr>
<td>BDC</td>
<td>Member</td>
<td>Use PWRK$CONFIG.COM.</td>
</tr>
<tr>
<td>Member</td>
<td>PDC</td>
<td>Use PWRK$CONFIG.COM to change this server to a BDC, and then use the ADMINISTER SET COMPUTER/ROLE command to promote the BDC to a PDC.</td>
</tr>
<tr>
<td>Member</td>
<td>BDC</td>
<td>Use PWRK$CONFIG.COM.</td>
</tr>
<tr>
<td>PDC</td>
<td>BDC</td>
<td>Use ADMINISTER SET COMPUTER/ROLE to promote a BDC in the domain to PDC; this promotion demotes the original PDC to a BDC.</td>
</tr>
</tbody>
</table>
| PDC     | Member| Use ADMINISTER SET COMPUTER/ROLE to promote an existing BDC to a PDC; this promotion demotes the PDC to a BDC so that you can change it to a member server, using PWRK$CONFIG.COM.
3.6 Configuring the Advanced Server Domain Role

**Caution**

If you reconfigure a BDC as a member server, PWRK$CONFIG.COM automatically removes the domain controller's domain user account database.

If you reconfigure a member server to a BDC, PWRK$CONFIG.COM automatically removes the member server's local user account database.

In either case, because of loss of local group information, access to some resources might be affected. If resource permissions have been set using local groups, those permissions will have to be reset. If resource permissions have been set using global groups or global user accounts, those permissions will remain in effect after the role change.

### 3.6.1 Configuring the Advanced Server as a Member Server

Use the PWRK$CONFIG.COM configuration procedure to configure the Advanced Server to participate in a domain as a member server. You cannot use the ADMINISTER SET COMPUTER/ROLE command to change an Advanced Server domain controller to a member server role or to change a member server to a domain controller role.

You can configure the Advanced Server as a member server if it is joining an existing domain that has a PDC in operation.

You may want to configure your Advanced Server as a member server instead of a BDC (or PDC) for any of the following reasons:

- **Member servers do not spend time validating logon requests. Thus, this role can be a good choice for servers that have heavy workloads or that perform extremely time-critical tasks.**

- **More important, configuring one or more servers as member servers rather than as domain controllers can help decrease the network load, thereby eliminating network traffic normally generated by domain controllers for replicating user databases and for authenticating logon requests. When a client attempts to find a logon server to authenticate a request, all domain controllers respond to the request. In some environments, this can generate a significant load on the network.**

- **Configuring the Advanced Server as a member server allows the Advanced Server to participate in a Windows 2000 native-mode environment without interruption to that environment.**
Configuring the PATHWORKS Advanced Server
3.6 Configuring the Advanced Server Domain Role

- If in the future your PATHWORKS Advanced Server server is moved to a different domain, it is simpler to move it as a member server from one domain to another than to move it as a BDC.

The next two sections explain how to configure the Advanced Server as a member server: Section 3.6.1.1, Configuring a New PATHWORKS Advanced Server as a Member Server, and Section 3.6.1.2, Configuring an Existing PATHWORKS Advanced Server BDC As a Member Server.

3.6.1.1 Configuring a New PATHWORKS Advanced Server as a Member Server

While installing a new PATHWORKS Advanced Server in an existing domain, you can configure it as a member server during the PWRK$CONFIG.COM configuration procedure. The domain must include one active PDC.

The following PWRK$CONFIG.COM output shows how a new PATHWORKS Advanced Server server might be configured as a member server. As shown, you must first specify an existing domain (in this case, UPTIME). This example assumes the UPTIME domain is a Windows 2000 native-mode domain that already has one or more domain controllers.

Reading current configuration parameters ...

Your Advanced Server for OpenVMS is presently configured to run as follows:

1. Run the License Server: NO
2. Enable Timesource service: NO
3. Enable Alerter service: YES
   3a. Alert user names: Administrator
4. Enable Netlogon service: YES
5. Advanced Server domain: LANGROUP
6. Advanced Server role: PRIMARY
7. Advanced Server computer name: GRATDA
   7a. Advanced Server OpenVMS Cluster alias: GRATDA_ALIAS
8. Server announce comment: PATHWORKS V6.1 for OpenVMS

Enter item number, or RETURN to use these values [DONE]: 5

********************************************************************************** WARNING **********************************************************************************

You chose item number 5 from the menu. Changing the domain name will cause the existing SAM databases to be RE-INITIALIZED resulting in the loss of any data currently in these databases (for example, user accounts, group names, etc).

********************************************************************************** WARNING **********************************************************************************

Do you want to continue with item number 5 (Y/[N]) Y

An Advanced Server domain is a collection of computers that share a common security database and policy. Each domain has a unique name. A network can have many domains.
The Advanced Server domain name can be up to 15 characters long. The domain name must be different than the computer name.

Enter Advanced Server domain name for this system [LANGROUP]: UPTIME [Return]

Enter item number, or RETURN to use these values [DONE]: 6 [Return]

The Advanced Server role is the part the server will play in its domain.

A primary domain controller maintains the domain’s master user accounts database and validates logins.

A backup domain controller receives copies of the master database, validates logins, and can be promoted to primary.

A member server does not receive copies of the master database or validate logins. It relies on domain controllers to validate user credentials.

Enter the role of this server (P)rimary/(B)ackup/(M)ember [P]: M [Return]

Before joining a domain, the computer must be added to the domain. This can be done in one of two ways:

- the administrator of the domain uses the administrative tools to add this computer to the domain, or
- the computer is added automatically by this procedure; you must supply an administrator account and password

Are you going to supply account/password information [Y]/N YES [Return]

Enter the name of the primary domain controller for domain UPTIME: SUNDA [Return]

Enter the name of the administrator account: [Administrator] [Return]

Enter the account password in the required case: [Return]

Re-enter to verify password: [Return]

Process NETBIOS created with identification 206010B5
Process PWRK$NBDAEMON created with identification 206010B7
Process PWRK$KNBDAEMON created with identification 206010B9
Confirming domain name with SUNDA ...
Successfully retrieved domain name from SUNDA.
Validating user name and password ...
Successfully validated user name and password.

PATHWORKS V6.1 for OpenVM is presently configured to run as follows:
Configuring the PATHWORKS Advanced Server

3.6 Configuring the Advanced Server Domain Role

1. Run the License Server: NO
2. Enable Timesource service: NO
3. Enable Alerter service: YES
3a. Alert user names: Administrator
4. Enable Netlogon service: YES
5. Advanced Server domain: UPTIME
6. Advanced Server role: MEMBER
7. Advanced Server computer name: GRATDA
7a. Advanced Server OpenVMS Cluster alias: GRATDA_ALIAS
8. Server announce comment: PATHWORKS V6.1 for OpenVMS

Enter item number, or RETURN to use these values [DONE]:

Saving parameters ... 
Creating SAM datafiles ... 
Creating sharefile PWRK$\textbackslash LMROOT\lanman.datafiles\sharedb ... 
New sharefile has been created.

ADMIN$ added 
IPC$ added 
PWUTIL added 
PWLICENSE added 
PWLIC added 

The Advanced Server Administrator account is used to administer the server. The Administrator account is mapped by default to the OpenVMS SYSTEM account.

The Administrator account password can be up to 14 characters long and the case of the characters used will be preserved.

Enter a password for this Member Server's local Administrator account:

Re-enter to verify password:

Changing password for Administrator account ... 
Checking system resources ... 
.
.
.

3.6.1.2 Configuring an Existing PATHWORKS Advanced Server BDC As a Member Server

When you configure a BDC to become a member server, the script is similar to the one for configuring a new server as a member server. One exception is that the script will display the following lines:

Changing from backup domain controller to member server results in the re-creation of the Advanced Server SAM databases. If there is any problem with the configuration, your existing SAM databases will be restored.
The BDC's domain-wide account database is removed, and the member server's local database is created. Server-specific data is retained from the BDC's database. The configuration procedure saves the domain-wide account database in case you need to restore it later (for more information, see Section 3.7.2, If Problems Occur When Reconfiguring the Advanced Server).

The following two displays show the role of server LIONHEART before and after reconfiguration to the member server role. The display symbol for a member server is [SV].

```
LANDOFOZ\TINMAN> SHOW COMPUTERS
Computers in domain "LANDOFOZ":
Computer Type Description------- ------------------------ -----------------------------
[PD] TINMAN OpenVMS (NT 3.51) Primary PATHWORKS V6.1 for OpenVMS (Advanced Server)
[BD] LIONHEART OpenVMS (NT 3.51) Backup PATHWORKS V6.1 for OpenVMS (Advanced Server)
[BD] DOROTHY OpenVMS (NT 4.0) Backup Advanced Server V7.3 for OpenVMS
Total of 3 computers
```

```
[reconfigure server role]

LANDOFOZ\TINMAN> SHOW COMPUTERS
Computers in domain "LANDOFOZ":
Computer Type Description------- ------------------------ -----------------------------
[PD] TINMAN OpenVMS (NT 3.51) Primary PATHWORKS V6.1 for OpenVMS (Advanced Server)
[SV] LIONHEART OpenVMS (NT 3.51) Server PATHWORKS V6.1 for OpenVMS (Advanced Server)
[BD] DOROTHY OpenVMS (NT 4.0) Backup Advanced Server V7.3 for OpenVMS
Total of 3 computers
```

### 3.7 Troubleshooting Configuration Procedure Problems

The following sections describe:

- How to ensure sufficient resources will be available to support clients
- How to recover if problems occur when reconfiguring the Advanced Server
3.7 Troubleshooting Configuration Procedure Problems

3.7.1 Ensuring Sufficient Resources to Support Clients

PATHWORKS Advanced Server requests the resources that it needs using the OpenVMS AUTOGEN utility. If AUTOGEN underestimates the resources required for use by processes other than PATHWORKS Advanced Server, and these resources have already been consumed when PATHWORKS Advanced Server is started, there may be insufficient resources left for PATHWORKS Advanced Server to support the desired number of clients.

To ensure sufficient resource allocation to support clients, make sure that all software that will run concurrently with PATHWORKS Advanced Server is installed and started before you run the PATHWORKS Advanced Server configuration procedure. If TCP/IP is selected as a transport, make sure that the TCP/IP product is loaded before you run the PWRK$CONFIG.COM procedure.

After you successfully configure the PATHWORKS Advanced Server, it may not start, reporting that there are insufficient resources to support any clients. In this case, examine the following file to determine the system resource that needs to be increased (nodename is the name of the server node):

PWRK$LOGS:PWRK$CONFIG_ERROR_node.LOG

To increase the resource allocation, make the appropriate modifications to the MODPARAMS.DAT file and then run AUTOGEN. Refer to Chapter 1, Before You Install PATHWORKS Advanced Server, for more information about the requirements for system parameter settings.

3.7.2 If Problems Occur When Reconfiguring the Advanced Server

If you reconfigure a previously configured server, the PWRK$CONFIG.COM command procedure creates subdirectories in the PWRK$LMDOMAINS: and PWRK$LMDATAFILES: directories, and stores the original accounts database files there.

The names of the subdirectories are based on the date and time, such as 16JUN20014314818.DIR, indicating that the directory was created on 16-JUN-2000 at approximately 2:32 p.m.

If an error occurs during configuration, the server configuration will be returned to its original state. After you are confident you have a successful reconfiguration, you can manually delete these subdirectories and their contents.
3.8 The Advanced Server Network Adapter

PATHWORKS might need to use the network to communicate with the PDC. If the system has more than one network adapter (also referred to as a network interface card), the default adapter chosen by PATHWORKS might not be the correct interface. Or, on some newer systems, the Advanced Server might not recognize the only network adapter present. In such cases, you can define system logical names to direct the Advanced Server to use a specific interface. If no such logical is defined, PATHWORKS selects the first adapter (alphabetically) defined on your system from a list of known adapters.

If the server has access to more than one network adapter and you do not want to use the adapter selected, or if the system has a network adapter that is not found or recognized by the Advanced Server, you can manually specify the network adapter to use with the transport you specified.

3.8.1 Manually Defining the Network Adapter

To manually define the network adapter to be used for a specific protocol (after restarting the server), follow these steps:

1. Use the DCL command DEFINE/SYSTEM to define a system logical name that specifies the network adapter, as shown in the following examples. Table 3–5, OpenVMS Network Adapter Logicals, lists the OpenVMS logical name that you can use for each transport. You must add the appropriate logicals to SYSS$MANAGER:SYLOGICALS.COM to have them available after rebooting.

2. Restart the server:

   $ @SYSS$STARTUP:PWRK$STARTUP

Table 3–5 OpenVMS Network Adapter Logicals

<table>
<thead>
<tr>
<th>Logical Name</th>
<th>Transport</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETBIOS$DEVICE</td>
<td>DECnet</td>
</tr>
<tr>
<td>PWRK$KNBDAEMON_DEVICE</td>
<td>TCP/IP</td>
</tr>
<tr>
<td>PWRK$NETBEUI_DEVICE</td>
<td>NetBEUI</td>
</tr>
</tbody>
</table>

The following examples show how to define the appropriate network adapter for the DECnet, TCP/IP, and NetBEUI transports, respectively:

- To specify adapter EWA0: for the DECnet transport, enter the following command:
Configuring the PATHWORKS Advanced Server
3.8 The Advanced Server Network Adapter

$ DEFINE/SYSTEM NETBIOS$DEVICE EWA0:

• To specify adapter ESA0: for the TCP/IP transport, enter the following command:
$ DEFINE/SYSTEM PWRK$KNBDAEMON_DEVICE ESA0:

Note
If TCP/IP is running on multiple network adapters, and you select one of those adapters for use by the Advanced Server, make sure the adapter you select corresponds to the first adapter listed in the TCP/IP local hosts database.

• To specify adapter ESA1: for the NetBEUI transport, enter the following command:
$ DEFINE/SYSTEM PWRK$NETBEUI_DEVICE ESA1:

Note that you can specify the same adapter for each protocol, as in the following example:
$ DEFINE/SYSTEM NETBIOS$DEVICE EWA0:
$ DEFINE/SYSTEM PWRK$KNBDAEMON_DEVICE EWA0:
$ DEFINE/SYSTEM PWRK$NETBEUI_DEVICE EWA0:

Note
The names of adapters defined by use of the logical names PWRK$NETBEUI_DEVICE, PWRK$KNBDAEMON_DEVICE, and NETBIOS$DEVICE must not start with an underscore (_); otherwise, the PWRK$KNBDAEMON will not start, and other processes will start, but they will not operate properly.

3.8.2 What to Do If the Network Adapter Is Not Found

The NETBIOS, PWRK$KNBDAEMON (for TCP/IP), and PWRK$NBDAEMON (for NetBEUI) processes require that their associated network adapter is known and available to the server software. It is possible that new network adapters are released that are not known to the current version of the Advanced Server software. If the Advanced Server does not find or recognize the selected network adapter, each of the failing processes (NETBIOS, which is always present, and PWRK$KNBDAEMON and PWRK$NBDAEMON, if present) writes an error message to its log file. Table 3–6, Undefined Adapter Messages, shows each process, the log file that records the error message from
the process, and examples of the text of the error message. In the examples in Table 3–6, the server node name is MYNODE. All three error messages have the same meaning: that no such device was found by the server.

<table>
<thead>
<tr>
<th>Process</th>
<th>Log File Name</th>
<th>Message:</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWRK$KNBDAEMON</td>
<td>PWRK$LOGS:PWRK$KNBDAEMON_MYNODE.LOG</td>
<td>Tue Mar 24 13:13:50 2000 get_phys_addr: Failed to get Ethernet device characteristics</td>
</tr>
<tr>
<td>NETBIOS</td>
<td>PWRK$LOGS:NETBIOS_MYNODE.LOG</td>
<td>%NB-W-ERRSIGNAL, exceptional conditional detected at 24-Mar-2000 13:13:50.00 -SYSTEM-W-NOSUCHDEV, no such device available</td>
</tr>
</tbody>
</table>

If you find any of the messages listed in Table 3–6, define the network adapter for the appropriate processes, using the procedure outlined in Section 3.8.1, Manually Defining the Network Adapter. For example, if the server reported an unknown device, enter the DEFINE/SYSTEM commands to define the appropriate adapter for each protocol on the server.

3.9 Next Steps

You can start the PATHWORKS Advanced Server automatically as part of the configuration procedure.

- If you are upgrading from PATHWORKS (LAN Manager) perform the upgrade procedures described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide.
- If you are ready to start the server, see Chapter 5, After You Install the PATHWORKS Advanced Server, for instructions.
4

Configuring and Starting the Standalone License Server

The License Server is a software program that you can run on an OpenVMS system to grant licenses to clients.

This chapter describes how to configure and start the standalone License Server, and consists of the following sections:

- Section 4.1, About the License Server
- Section 4.2, Before You Begin to Configure the Standalone License Server
- Section 4.3, Configuring the Standalone License Server
- Section 4.4, Configuring the Transports
- Section 4.5, How to Respond to License Server Configuration Prompts
- Section 4.6, How to Start the Standalone License Server

4.1 About the License Server

The PATHWORKS Advanced Server License Server can provide license verification for clients requiring access to PATHWORKS (LAN Manager) servers, PATHWORKS for OpenVMS (Advanced Server) servers, and Advanced Server for OpenVMS servers.

The License Server is required for client-based licensing. If you are using server-based licensing, you do not have to run the License Server.

Each LAN needs only one License Server to support client-based licenses. The same License Server can manage licenses for client access to any of the following types of file and print servers:

- PATHWORKS V5 for OpenVMS (LAN Manager)
- PATHWORKS V6 for OpenVMS (Advanced Server)
4.1 About the License Server

- Advanced Server for OpenVMS

You can install the License Server:

- Separately from the Advanced Server
- In conjunction with the Advanced Server

Compaq recommends that you install the License Server on a designated OpenVMS system without the Advanced Server. The PATHWORKS Advanced Server kit allows you to install the standalone License Server separately from the file and print server. You can run the standalone License Server on an OpenVMS Cluster, where cluster failover provides reliability.

In an OpenVMS Cluster, the PAKs must be loaded into a shared license database. For detailed information on managing licenses, refer to the Compaq Advanced Server for OpenVMS Guide to Managing Advanced Server Licenses.

Note

The License Server included with PATHWORKS Advanced Server will not issue or manage PATHWORKS for OpenVMS (NetWare) licenses. If you have clients using NetWare networking software, maintain the existing version of the License Server on a different system from the one that is running PATHWORKS Advanced Server.

4.2 Before You Begin to Configure the Standalone License Server

You install the standalone License Server from the same software kit that you use to install the PATHWORKS Advanced Server. The procedures are described in Chapter 2, Installing the PATHWORKS Advanced Server.

4.3 Configuring the Standalone License Server

You must configure the standalone License Server to provide licenses to clients in the LAN. Therefore, you select the appropriate transports used by the clients. You can configure the License Server to use the following transports:
4.3 Configuring the Standalone License Server

- DECnet
- NetBEUI
- TCP/IP

Because the License Server supports all these types of transports, the startup and shutdown procedures have been carefully designed to prevent unexpected interruptions in service. You can start and shut down the License Server using the file and print server command procedures PWRK$STARTUP.COM and PWRK$SHUTDOWN.COM. For more information on starting a standalone License Server, see Section 4.6, How to Start the Standalone License Server.

4.4 Configuring the Transports

The following section describes how to use the configuration command procedure to configure the transports for the standalone License Server.

After the installation procedure completes, the OpenVMS system prompt ($) is displayed. If the system was rebooted following installation, ensure that you are logged in to the SYSTEM account, and do the following:

1. Start the configuration procedure by entering:

   `$ @SYS$UPDATE:PWRK$CONFIG`

2. Respond to the configuration prompts.

4.5 How to Respond to License Server Configuration Prompts

Table 4–1, License Server Configuration Prompts, tells you how to respond to the prompts displayed by PWRK$CONFIG when you configure the standalone License Server.

---

Note

Table 4-1 shows only the prompts that PWRK$CONFIG displays; it does not show any informational messages. For a complete sample configuration script, see Appendix C, Sample Standalone License Server Installation and Configuration.
### 4.5 How to Respond to License Server Configuration Prompts

#### Table 4–1  License Server Configuration Prompts

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Outcome</th>
<th>How to Respond</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enter disk device name where the Advanced Server data files will be stored [default_device]:</td>
<td>Copy the server on-disk structure to the default OpenVMS disk device displayed; you need 5,000 free blocks of disk space to store these data files. (If you ran PWRK$CONFIG previously, the default disk device is the one you specified the last time you configured the server.) Copy the PATHWORKS Advanced Server on-disk structure to an OpenVMS disk device different from the default displayed</td>
<td>Return device_name</td>
</tr>
<tr>
<td>Do you want to serve client-based licenses over DECnet [YES]:(^1)</td>
<td>Allow licenses to be served over DECnet</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Not allow licenses to be served over DECnet</td>
<td>NO</td>
</tr>
<tr>
<td>Do you want to serve client-based licenses over NetBEUI [NO]:(^1)</td>
<td>Allow licenses to be served over NetBEUI</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Not allow licenses to be served over NetBEUI</td>
<td>Return</td>
</tr>
<tr>
<td>Do you want to serve client-based licenses over TCP/IP [NO]:(^1)</td>
<td>Allow licenses to be served over TCP/IP</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Not allow licenses to be served over TCP/IP</td>
<td>Return</td>
</tr>
<tr>
<td>Do you want to start the PATHWORKS License Server now [YES]:</td>
<td>Start the server automatically after the configuration procedure completes</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Complete the configuration procedure without starting the server</td>
<td>NO</td>
</tr>
</tbody>
</table>

\(^1\)Default answers may differ if you ran the PWRK$CONFIG procedure previously.
4.6 How to Start the Standalone License Server

You can start the License Server in any of the following ways:

- During the configuration procedure, as described in Section 4.3, Configuring the Standalone License Server.
- Manually from the command line.
- Automatically each time you reboot.

4.6.1 How to Start the License Server Manually

If you did not start the License Server during the configuration procedure, you can start it manually using the following command:

```
$ @SYS$STARTUP:PWRK$STARTUP
```

The License Server will use DECnet, NetBEUI, TCP/IP.

Process NETBIOS created with identification 0000011E
Process PWRK$NBDAEMON created with identification 00000120
Process PWRK$KNBDAEMON created with identification 00000122
Process PWRK$LICENSES created with identification 00000124

$ 

4.6.2 How to Start the License Server Automatically

To make sure that the License Server starts automatically each time you boot your OpenVMS system:

1. Edit the system startup file (SYS$STARTUP:SYSTARTUP_VMS.COM).

2. Add the startup command, as shown in the following example. Add the command to the file below all lines that start network transports. The following example shows how to edit the file.

```
$ IF PSSEARCH("SYS$SYSTEM:NETACP.EXE") .NES. ""
$ THEN @SYS$MANAGER:STARTNET
$ ENDIF
.
.
.
$ @SYS$STARTUP:PWRK$STARTUP
```
4.6.3 How to Start the License Server in an OpenVMS Cluster

If you installed and configured the License Server on multiple members of the same OpenVMS Cluster, Compaq suggests that you use the SYSMAN utility to start the License Server manually and simultaneously on all cluster members. To do so:

1. Make sure that you are logged in to the SYSTEM account on one of the server nodes in the OpenVMS Cluster.

2. Start the SYSMAN utility by entering:

   $ RUN SYS$SYSTEM:SYSMAN

3. Define all the cluster members on which you want to start the standalone License Server. For example, if you want to start the License Server on nodes HYDRAA, HYDRAB, and HYDRAC:

   SYSMAN> SET ENVIRONMENT/NODE=(HYDRAA,HYDRAB,HYDRAC)

4. Start the License Server on the nodes you defined. At the SYSMAN> prompt, enter the following command:

   SYSMAN> DO @SYS$STARTUP:PWRK$STARTUP

Only one License Server in the cluster will be active at a time. If that License Server becomes unavailable, cluster failover activates one of the other License Servers to take over.
This chapter describes tasks you can perform after you install the PATHWORKS Advanced Server software and consists of the following sections:

- Section 5.1, Before You Begin Postinstallation Tasks
- Section 5.2, Verifying the PATHWORKS for OpenVMS (Advanced Server) Installation
- Section 5.3, Starting the PATHWORKS Advanced Server
- Section 5.4, Stopping the PATHWORKS Advanced Server
- Section 5.5, How to Define PATHWORKS Advanced Server Commands When You Log In
- Section 5.6, Setting Up External Authentication
- Section 5.7, Installing Optional Server Administration Tools

5.1 Before You Begin Postinstallation Tasks

Before proceeding, make sure you have completed the steps listed in the second column of Table 5–1, depending on the task you are performing, listed in the first column.
### Table 5–1 Steps That Must Be Completed Before Postinstallation

<table>
<thead>
<tr>
<th>Task You Are Performing</th>
<th>Steps Required</th>
</tr>
</thead>
</table>
| Installing the PATHWORKS Advanced Server | 1. Completed the installation procedure described in Chapter 2, Installing the PATHWORKS Advanced Server.  
2. Completed the configuration procedure described in Chapter 3, Configuring the PATHWORKS Advanced Server. |
| Upgrading a PATHWORKS (LAN Manager) server to PATHWORKS V6 for OpenVMS (Advanced Server) server | 1. Completed the installation procedures described in Chapter 2, Installing the PATHWORKS Advanced Server.  
2. Completed the upgrade procedure described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide.  
3. Completed the configuration procedure described in Chapter 3, Configuring the PATHWORKS Advanced Server. |
| Installing the Standalone License Server | 1. Completed the installation procedures described in Chapter 2, Installing the PATHWORKS Advanced Server.  
2. Completed the configuration procedure described in Chapter 4, Configuring and Starting the Standalone License Server. |
| Installing external authentication software only | Completed the installation procedure described in Chapter 2, Installing the PATHWORKS Advanced Server. |

### 5.2 Verifying the PATHWORKS for OpenVMS (Advanced Server) Installation

If you did not run the IVP as part of the installation procedure, as described in Chapter 2, Installing the PATHWORKS Advanced Server, you can run it now (or anytime later) to make sure that the server installed successfully.
To run the IVP for PATHWORKS Advanced Server, enter the following command:

```
$ @SYS$TEST:PWRK$IVP
```

Table 5–2, IVP Indications and Steps You Should Take, indicates the steps to take according to the status of the installation indicated by IVP.

<table>
<thead>
<tr>
<th>Installation Status</th>
<th>IVP Indication</th>
<th>Steps to Take</th>
</tr>
</thead>
<tbody>
<tr>
<td>Succeeded</td>
<td>The message <code>%PWRK-I-NORMAL, IVP completed successfully</code></td>
<td>If it is not already running, start the server, as described in Section 5.3, Starting the PATHWORKS Advanced Server.</td>
</tr>
<tr>
<td>Failed</td>
<td>An error message, followed by <code>-PWRK-E-IVPFAIL, IVP has failed</code></td>
<td>Reinstall the software, as described in Chapter 2, Installing the PATHWORKS Advanced Server.</td>
</tr>
</tbody>
</table>

5.3 Starting the PATHWORKS Advanced Server

The following sections describe what the startup procedure does, when and how to start the PATHWORKS Advanced Server (manually or automatically), and how to troubleshoot problems with startup.

You can start the Advanced Server:

- During the configuration procedure, as described in Chapter 3, Configuring the PATHWORKS Advanced Server
- Manually from the command line
- Automatically each time you reboot

5.3.1 When to Start the PATHWORKS Advanced Server

You must configure the server before you can start it for the first time. After running the configuration procedure, you can start and stop the server at any time.
After You Install the PATHWORKS Advanced Server

5.3 Starting the PATHWORKS Advanced Server

5.3.2 What the Startup Procedure Does

The startup procedure:

1. Checks for the required privileges.
2. Verifies that required configuration files are available.
3. Verifies that the server has been configured, and exits if it was not.
4. If a reboot is required, verifies that it was performed, and exits if it was not.
5. Loads transport drivers.
6. Installs images.
7. Starts transport support processes.
8. Starts each of the components:
   • License Registrar
   • License Server (if configured)
   • File and print server

5.3.3 How to Start the PATHWORKS Advanced Server Manually

If you did not start the PATHWORKS Advanced Server during the configuration procedure, you can start it now by entering:

```
$ @SYS$STARTUP:PWRK$STARTUP
```

The PATHWORKS Advanced Server starts, and messages similar to the following are displayed:

```
PATHWORKS file server will use DECnet, TCP/IP.
PATHWORKS mail notification will use DECnet.
Process NETBIOS created with identification 0000009A
Process PWRK/LICENSE_R created with identification 0000009D
The PATHWORKS V6.1 server is configured to support 20 PC clients.
Process PWRK$MASTER created with identification 000000A2
The master process will now start all other PATHWORKS processes.
```
5.3.4 How to Start the PATHWORKS Advanced Server Automatically

To make sure that the server starts automatically each time you boot your OpenVMS system:

1. Edit the system startup file, SYS$STARTUP:SYSTARTUP_VMS.COM.
2. Add the @SYS$STARTUP:PWRK$STARTUP command to the file below all lines that start network transports. For example:

   $ START/NETWORK DECNET
   .
   .
   .
   $ @SYS$STARTUP:PWRK$STARTUP

5.3.5 How to Start the PATHWORKS Advanced Server in an OpenVMS Cluster

Before starting the server in an OpenVMS Cluster, the server software must be installed and configured on each cluster member on which the server is to run. If you installed and configured the PATHWORKS Advanced Server on multiple members of the same OpenVMS Cluster, Compaq recommends that you use the SYSMAN utility to start the server manually and simultaneously on all cluster members.

To start the server on all cluster members at the same time, make sure you are logged in to the SYSTEM account on one of the server nodes, then run SYSMAN as indicated in the second column of Table 5–3, Starting the Server in an OpenVMS Cluster, according to the result you want to achieve, as listed in the first column.

<table>
<thead>
<tr>
<th>Desired Result</th>
<th>Command to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start the SYSMAN utility</td>
<td>$ RUN SYS$SYSTEM:SYSMAN</td>
</tr>
<tr>
<td>Define the OpenVMS Cluster members on which to start the server (in this example, SPEEDY, SPIN, and SPAN)</td>
<td>SYSMAN&gt; SET ENVIRONMENT - _SYSMAN&gt; NODE=(SPEEDY,SPIN,SPAN)</td>
</tr>
</tbody>
</table>

(continued on next page)
After You Install the PATHWORKS Advanced Server

5.3 Starting the PATHWORKS Advanced Server

Table 5–3 (Cont.) Starting the Server in an OpenVMS Cluster

<table>
<thead>
<tr>
<th>Desired Result</th>
<th>Command to Enter</th>
</tr>
</thead>
<tbody>
<tr>
<td>Start the PATHWORKS Advanced Server on all the nodes you defined in the previous command</td>
<td>SYSMAN&gt; DO @SYS$STARTUP:PWRK$STARTUP</td>
</tr>
<tr>
<td>Exit the SYSMAN utility</td>
<td>SYSMAN&gt; EXIT</td>
</tr>
</tbody>
</table>

**Note**

If you are using the STARTUP feature of the SYSMAN utility to start Advanced Server, you must pass a P1 parameter of " " (null or space). For example:

SYSMAN> STARTUP ADD FILE PWRK$STARTUP.COM/PARAMETER=P1:" "

For more information on using the SYSMAN utility's STARTUP feature, refer to the OpenVMS System Management Utilities Reference Manual.

5.3.6 Troubleshooting the Startup

PATHWORKS Advanced Server processes are detached processes. During startup, all detached processes must execute the site-specific system login procedure (by default, SYS$MANAGER:SYLOGIN.COM).

If the PATHWORKS Advanced Server startup does not complete successfully, check the SYLOGIN.COM procedure. Make sure that only commands that should be executed by detached processes are executed during the PATHWORKS Advanced Server startup.

In SYLOGIN.COM, you can use the DCL lexical function F$MODE or F$GETJPI to conditionalize DCL commands, such as $SET TERM/INQUIRE, that should be executed only by nondetached processes, so that they are not executed during the PATHWORKS Advanced Server startup. Refer to the OpenVMS DCL Dictionary for more information.

5.4 Stopping the PATHWORKS Advanced Server

The following sections describe when and how to stop the PATHWORKS Advanced Server.
5.4 Stopping the PATHWORKS Advanced Server

5.4.1 When to Stop the PATHWORKS Advanced Server

You can stop the server at any time for any reason, which can include the following:

• When you want to change server parameters
• As part of an orderly system shutdown
• As needed to troubleshoot server problems

5.4.2 How to Stop the PATHWORKS Advanced Server

To stop the server, enter the following command:

```bash
$ @SYS$STARTUP:PWRK$SHUTDOWN
```

For a cluster server, enter:

```bash
$ @SYS$STARTUP:PWRK$SHUTDOWN CLUSTER
```

Before shutting down the OpenVMS operating system, Compaq recommends stopping the server.

5.4.3 How to Stop the PATHWORKS Advanced Server on System Shutdown

To stop the server as part of an orderly system shutdown, add the shutdown command to the site-specific system shutdown procedure. In addition, prior to shutting down the server, announce the planned shutdown to connected users by using the ADMINISTER SEND/USERS command, as in the following example, which alerts all users connected to server WOODMAN:

```
LANDOFOZ\TINMAN> SEND/USERS/SERVER=WOODMAN "Shutdown @ 1pm today!!!"
```

5.5 How to Define PATHWORKS Advanced Server Commands When You Log In

Compaq provides numerous command procedures that, for example, provide shortcuts for invoking certain server management commands and procedures. You can see a list of these commands by examining the contents of the file SYS$MANAGER:PWRK$DEFINE_COMMANDS.COM.

You can define these Advanced Server management commands automatically when you log in to the account that you use to manage the Advanced Server. To define Advanced Server commands at login, edit the LOGIN.COM file of the privileged account to add the following line:

```bash
$ @SYS$MANAGER:PWRK$DEFINE_COMMANDS
```
5.6 Setting Up External Authentication

The OpenVMS operating system Versions 7.1 and higher provide support for external authentication. PATHWORKS Advanced Server participates with the OpenVMS operating system to allow PATHWORKS Advanced Server domain users to log in to the OpenVMS operating system using their PATHWORKS Advanced Server domain user names and passwords. The PATHWORKS Advanced Server externally authenticates the login request.

External authentication can provide automatic password synchronization between an OpenVMS account and a corresponding Advanced Server domain account. Users who have both OpenVMS and PATHWORKS Advanced Server domain user accounts can avoid maintaining two different passwords. If the domain account password is changed, the OpenVMS LOGINOUT program sets the OpenVMS account password to the domain account password the next time the user logs in to the OpenVMS account. If the user changes the OpenVMS password with the DCL SET PASSWORD command, the the SET PASSWORD command sends the password change to the Advanced Server external authenticator. For synchronization to succeed, an Advanced Server domain controller must be available and the domain account password must meet OpenVMS syntax requirements.

When you start the Advanced Server, external authentication is automatically enabled for user accounts that are flagged for external authentication in the SYSUAF. (To enable external authentication, PWRK$ACME_STARTUP.COM defines bit 0 of the SYSS$SINGLE_SIGNON logical to the value 1. You can disable external authentication by changing the default value of this bit. For information on disabling external authentication and about defining the other bits in the SYSS$SINGLE_SIGNON logical, see Section 5.6.5, Disabling External Authentication.)

For more information about enabling external authentication on OpenVMS, refer to the OpenVMS Guide to System Security.

No additional configuration is necessary on cluster members running the Advanced Server to enable the Advanced Server to participate in the external authentication process. However, to use external authentication in an Advanced Server cluster, all cluster members should be configured to use external authentication, so that externally authenticated users can log on to the cluster through any node in the cluster. A cluster member that is not running the complete Advanced Server can be configured to authenticate logon requests from network users if it has access to external authentication software on a shared cluster system disk. If it does not have access to external authentication software on a shared cluster system disk, you can enable external authentication on that system by copying only the external
After You Install the PATHWORKS Advanced Server
5.6 Setting Up External Authentication

authentication images to the system disk, following the steps given in Section 5.6.1, Setting Up External Authentication in OpenVMS Clusters.

To provide external authentication on the system, perform the following steps:

1. Install one of the following:
   - The PATHWORKS Advanced Server
   - The standalone PATHWORKS external authentication software

   **Note**

   At least one node in the cluster must run the complete Advanced Server software.

   For more information, see Chapter 2, Installing the PATHWORKS Advanced Server.

2. Set the appropriate OpenVMS user accounts to allow external authentication (in SYSUAF). For more information, refer to the OpenVMS Guide to System Security.

3. If the PATHWORKS Advanced Server is installed, start the server and external authentication will be enabled for all user accounts allowing external authentication.

   If the standalone PATHWORKS external authentication software is installed, perform the following:

   a. Add the following lines to your SYSTARTUP_VMS.COM file:

   ```
   $ DEFINE/SYSTEM/EXE SYS$SINGLE_SIGNON 1
   $ @SYS$STARTUP:PWRK$ACME_STARTUP.COM
   
   In a cluster, add these preceding two lines plus the following in a node-specific system startup file (not clusterwide), or if using a shared system startup file such as SYS$COMMON:[SYSMGR]SYLOGICALS.COM, ensure that you conditionalize the DEFINE command based on the node name (that is, using the lexical function $GETSYI).

   $ DEFINE/SYSTEM/EXE PWRK$ACME_SERVER scsnode1_name[,scsnode2_name,...]
   
   Each scsnode_name is an equivalence name, which is the SCSNODE name of a cluster member running an Advanced Server that can be used to process external authentication requests. You can include all, or a subset of, the names of the Advanced Server member nodes. This allows you to specify the order in which the requesting host contacts the hosts running the complete Advanced Server software for an
After You Install the PATHWORKS Advanced Server

5.6 Setting Up External Authentication

authentication request. If the first node in the list does not respond, the requesting host asks the next host, and so forth.

For more information, refer to the OpenVMS Guide to System Security and Section 5.6.1.

4. Establish host mapping between PATHWORKS Advanced Server domain user accounts and the corresponding OpenVMS user accounts, if necessary. For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

5. If your Advanced Server is participating in an OpenVMS Cluster, set up external authentication on all cluster members. For more information, see Section 5.6.1, Setting Up External Authentication in OpenVMS Clusters.

6. If you want to change the default domain used for external authentication, set the system logical PWRK$ACME_DEFAULT_DOMAIN accordingly. (The local server’s domain is the default domain for users when external authentication is established: if a user does not specify a domain name at login, the system uses the default domain for authentication.) For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

7. If establishing external authentication for users in trusted domains, add the name of the trusted domain(s) to the LANMAN.INI parameter HostMapDomains. For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

For information about enabling Authentication and Credential Management (SYS$ACM) for authenticating users and determining the user security profile for OpenVMS and Windows NT, refer to the OpenVMS Connectivity Developer’s Guide (included in the OpenVMS Documentation CD-ROM).

5.6.1 Setting Up External Authentication in OpenVMS Clusters

If you are running PATHWORKS Advanced Server in an OpenVMS Cluster, Compaq recommends that all cluster members be configured to be able to process OpenVMS logon requests for network users.

As noted in the preceding section, when the Advanced Server is started on a system, external authentication is enabled automatically for user accounts flagged for external authentication in the SYSUAF. A cluster member that is not running the complete Advanced Server can authenticate logon requests from network users if it has access to external authentication software on a shared cluster disk. Note that external authentication is not supported on OpenVMS systems prior to V7.1. Therefore, to ensure that external
After You Install the PATHWORKS Advanced Server

5.6 Setting Up External Authentication

authentication works properly on the cluster, Compaq recommends that you make sure all systems in the cluster are running OpenVMS V7.1 or later.

If the cluster member does not have access to external authentication software on a shared cluster disk, you can enable external authentication on that system by copying just the external authentication images onto that system.

If the cluster member has a shared system disk, skip step 1 below and perform the remaining steps. If the cluster member does not have a shared system disk, perform all steps.

1. If the member node that is not running the PATHWORKS Advanced Server is running OpenVMS Alpha Version 7.2-1 or later or OpenVMS VAX V7.2 or later, install the standalone PATHWORKS external authentication software on that member node from the PATHWORKS for OpenVMS (Advanced Server) software kit, as described in Chapter 2, Installing the PATHWORKS Advanced Server.

If the cluster member does not have access to external authentication software on a shared cluster disk, you can enable external authentication on that system by copying just the external authentication images onto that system.

If the cluster member has a shared system disk, skip step 1 below and perform the remaining steps. If the cluster member does not have a shared system disk, perform all steps.

   1. If the member node that is not running the PATHWORKS Advanced Server is running OpenVMS Alpha Version 7.2-1 or later or OpenVMS VAX V7.2 or later, install the standalone PATHWORKS external authentication software on that member node from the PATHWORKS for OpenVMS (Advanced Server) software kit, as described in Chapter 2, Installing the PATHWORKS Advanced Server.

   If the cluster member does not have access to external authentication software on a shared cluster disk, you can enable external authentication on that system by copying just the external authentication images onto that system.

   If the cluster member has a shared system disk, skip step 1 below and perform the remaining steps. If the cluster member does not have a shared system disk, perform all steps.

   2. If the member node that is not running the PATHWORKS Advanced Server is running OpenVMS VAX Version 7.1, copy the following external authentication files from any system disk where the complete PATHWORKS Advanced Server is installed to the location indicated on the VAX node:

<table>
<thead>
<tr>
<th>File</th>
<th>Destination on VAX Node</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$LIBRARY:PWKR$ACME_MODULE_VAX.EXE</td>
<td>SYS$COMMON:[SYSLIB]</td>
</tr>
<tr>
<td>SYS$STARTUP:PWKR$ACME_STARTUP.COM</td>
<td>SYS$COMMON:[SYS$STARTUP]</td>
</tr>
</tbody>
</table>

   If the member node that is not running the PATHWORKS Advanced Server is running OpenVMS Alpha Version 7.1, then copy the following external authentication files from any system disk where the complete PATHWORKS Advanced Server is installed to the location indicated on the Alpha node:

<table>
<thead>
<tr>
<th>File</th>
<th>Destination on Alpha V7.1 Node</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$LIBRARY:PWKR$ACME_MODULE_ALPHA.EXE</td>
<td>SYS$COMMON:[SYSLIB]</td>
</tr>
<tr>
<td>SYS$STARTUP:PWKR$ACME_STARTUP.COM</td>
<td>SYS$COMMON:[SYS$STARTUP]</td>
</tr>
</tbody>
</table>

   2. Add the following lines in a node-specific system startup file (not clusterwide), or if using a shared system startup file such as SYS$COMMON:[SYSMGR]SYLOGICALS.COM, ensure that you conditionalize the DEFINE command based on the node name (that is, using the lexical function F$GETSYI).
After You Install the PATHWORKS Advanced Server

5.6 Setting Up External Authentication

```
$ DEFINE/SYSTEM/EXE SYS$SINGLE_SIGNON 1
$ DEFINE/SYSTEM/EXE PWRK$ACME_SERVER scsnodel_name[,scsnodename2,...]
$ @SYS$STARTUP:ACME_STARTUP.COM
```

In the second line, each `scsnodex_name` is an equivalence name, which is the SCSNODE name of a cluster member running an Advanced Server that can be used to process external authentication requests. You can include all, or a subset of, the names of the Advanced Server member nodes. This allows you to specify the order in which the requesting host contacts the hosts running the complete Advanced Server software for an authentication request. If the first node in the list does not respond, the requesting host asks the next host, and so forth.

**Note**

If you specify a subset of the Advanced Server member nodes, in order for external authentication requests to be processed properly, the Advanced Server should be running (available) on at least one of those specified cluster members. Otherwise, even if another Advanced Server member node not specified in the list is currently running, the requests will not be processed.

3. Invoke the SYS$STARTUP:PWRK$ACME_STARTUP command procedure during system startup.

4. Set appropriate OpenVMS user accounts on all cluster members to allow external authentication, and if necessary, set up host mapping between the OpenVMS user accounts and the Advanced Server user accounts. For more information about enabling OpenVMS user accounts for external authentication, refer to the OpenVMS Guide to System Security. For more information about setting up host mapping, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide. (For OpenVMS V7.1 systems, refer to the OpenVMS V7.1 New Features Manual.)

5.6.2 Requirement for External Authentication Over DECnet-Plus

To allow users to be externally authenticated over DECnet-Plus for OpenVMS, set the OpenVMS system parameter `NET_CALLOUTS` to 255. This enables Advanced Server user ID mapping and authentication for network logins.
After You Install the PATHWORKS Advanced Server
5.6 Setting Up External Authentication

5.6.3 Configuring the Server Capacity for External Authentication
By default, the Advanced Server can support up to 10 simultaneous external authentication logon requests (signons). You can modify this maximum to suit the Advanced Server requirements, using the Configuration Manager. To start the Configuration Manager, enter the following command:

```
$ ADMINISTER/CONFIGURATION
```

The basic server parameters include the number of simultaneous activations for users with external authentication.

For more information about using the Configuration Manager, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

5.6.4 Bypassing External Authentication When the Network Is Down
External authentication cannot occur if a network connection is required and the network is down. However, as a temporary solution, privileged users can enter the /LOCAL_PASSWORD qualifier after the OpenVMS user name at the login prompt, to specify local authentication. Be sure to specify the OpenVMS user name and password when using the /LOCAL_PASSWORD qualifier.

Because using the /LOCAL_PASSWORD qualifier effectively overrides the security policy established by the system manager, it is allowed only when the user’s account has SYSPRV as an authorized privilege. This allows the system manager to gain access to the system when the network is down. When Bit 1 of the equivalence string is set in the SYS$SINGLE_SIGNON logical name, nonprivileged users who are normally externally authenticated can log in locally (the /LOCAL_PASSWORD qualifier need not be specified).

For more information about the /LOCAL_PASSWORD qualifier for the login command line, refer to the OpenVMS Guide to System Security. (For OpenVMS Version 7.1 systems, refer to the OpenVMS System Management Utilities Reference Manual in the OpenVMS Version 7.1 documentation.

5.6.5 Disabling External Authentication
If you want to disable external authentication, then before starting the Advanced Server, define the SYS$SINGLE_SIGNON logical to a value of 0, as in the following example:

```
$ DEFINE/SYSTEM/EXECUTIVE SYS$SINGLE_SIGNON 0
```

For more information about SYS$SINGLE_SIGNON and disabling external authentication on OpenVMS, refer to the OpenVMS Guide to System Security.
5.7 Installing Optional Server Administration Tools

The PATHWORKS Advanced Server provides optional client-based server administration tools that allow you to manage the server from Windows 95, Windows 98, Windows for Workgroups, or Windows NT clients. These tools are available in the PWUTIL share after installing, configuring and starting the server.

The SRVTOOLS directory in the PWUTIL share contains a subdirectory for each type of client computer. Refer to the README.TXT file in the appropriate subdirectory for instructions on installing the software on the client computer.

Refer to the Windows NT Server documentation or use online Help for more information about how to use Windows NT Server administration tools.
This chapter describes how to set up a wide area network (WAN) using one of the TCP/IP transport software products supported by PATHWORKS Advanced Server.

This chapter consists of the following sections:

- Section 6.1, Enabling Wide Area Networking
- Section 6.2, Using the LMHOSTS File for Wide Area Networking
- Section 6.3, Using WINS in a Wide Area Network
- Section 6.4, Using DNS in a Wide Area Network

### 6.1 Enabling Wide Area Networking

The PATHWORKS Advanced Server allows you to use one or more of the following methods for wide area network name resolution:

- LMHOSTS file for TCP/IP
- Windows Internet Name Servers (WINS)
- Domain Name System (DNS)

To use them, they must be enabled using the Configuration Manager. You can enable them through the PWRK$CONFIG.COM command procedure, which provides access to the Configuration Manager when you answer YES to the question “Do you want to change server configuration parameters.” To enable one or more of the wide area networking methods, select the Transports screen and select the appropriate checkbox. Alternatively, you can run the Configuration Manager after the server is configured and started, as described in the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.
6.2 Using the LMHOSTS File for Wide Area Networking

The PATHWORKS Advanced Server software provides the ability to set up a wide area network with the TCP/IP transport through the use of the LMHOSTS file. This file contains a list of domain controllers and member servers in the same domain and also domain controllers in domains that have trusts established with that domain. The LMHOSTS file allows the Advanced Server to participate in a Windows NT wide area network as well.

Unlike a Windows NT Server, the Advanced Server does not support remote LMHOSTS files (called into the Windows NT LMHOSTS file using #NINCLUDE). To include the same host names as an existing LMHOSTS file on a Windows NT Server, copy the LMHOSTS file to the Advanced Server then manually insert the entries into the Advanced Server LMHOSTS file.

Caution

If you plan to use cluster load balancing in WANs (using DNS for NetBIOS resolution of the Advanced Server cluster alias name), you must remove all entries for the cluster alias from the LMHOSTS file on all systems that will access the Advanced Server cluster and that have enabled DNS for name resolution. For more information on cluster load balancing, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

6.2.1 Setting up a TCP/IP Wide Area Network

To set up a TCP/IP wide area network, modify the LMHOSTS file, adding the host names and TCP/IP addresses of the domain controllers and member servers in the wide area network that are in the same domain or in domains that have trust relationships with that domain.

The LMHOSTS file must be set up on all domain controllers and member servers in the domain, unless other methods are used to resolve NetBIOS names. Make sure your Advanced Server LMHOSTS file includes entries for all domain controllers and member servers of the domain and domain controllers in domains that have trusts established with that domain.

Note the following when configuring a server that will be a backup domain controller (BDC) or member server in an existing domain: if the LMHOSTS file does not include entries for a primary domain controller (PDC) that is in a different TCP/IP subnet, your server will not be able to find that PDC. Make sure you include entries for that PDC in the LMHOSTS file before running
Implementing a Wide Area Network
6.2 Using the LMHOSTS File for Wide Area Networking

PWRK$CONFIG to join the existing domain. Two entries are required for a PDC:

• One standard entry for the computer name of the PDC
• One entry that uniquely identifies the system as the PDC of the domain. This entry contains the domain name (space padded to 15 characters) with a 16th-byte control character of \0x1B. See the example in Section 6.2.3, LMHOSTS File Syntax.

BDCs periodically retrieve changes to the domain-wide security accounts database from the PDC. If you omit a BDC from the LMHOSTS file on the PDC, the PDC will not notify the BDC that database changes need to be retrieved. Or, if a BDC omits the necessary entries for the PDC, the BDC will be unable to locate the PDC when attempting to retrieve database changes. In either case, the BDC’s database will become out of date.

You can modify the LMHOSTS file at any time. As long as the LMHOSTS file exists, users can establish TCP/IP connections to any server listed in the file.

6.2.2 The LMHOSTS Directory
You set up a wide area network by supplying the following file on all OpenVMS file and print servers that are in different subnets:

PWRK$LMROOT:[LANMAN]LMHOSTS.

The LMHOSTS file has no file extension; include the final dot, as shown.

6.2.3 LMHOSTS File Syntax
In the LMHOSTS file, create a list of nodes by specifying the following line for each node:

address NetBIOSname #PRE #DOM:domain_name

Where:

• address is an Internet address of form x.x.x.x, where x is a decimal number from 0 to 255.
• NetBIOSname is a name from 1 to 16 characters long, and may include a control character. (The format of a control character is \0Xnn or \nn, where n is a hexadecimal digit.)

To include a nonprinting or control character, enclose the name in double quotation marks. All alphabetic characters are set to uppercase characters before the name is loaded into cache (see the #PRE directive, below) or used for matching.
If you wish to include the 16th-byte control character in the name explicitly, you must

- Pad the name with spaces to control the placement of the control character.
- Enclose the name and control character within double quotes.

The following are some valid NetBIOS names:

- speedy
- "LANDOF0Z \0x1B"

- #PRE is an optional directive that indicates that the entry should be preloaded into the cache. Entries that have the #PRE tag are preloaded into the cache when the Advanced Server first starts up. If you add a #PRE-tagged entry to the LMHOSTS file after the Advanced Server starts up, the name will not be preloaded into the cache until the Advanced Server is restarted. However, the name will be available at the next lookup of the LMHOSTS file.

- #DOM:domain-name designates the entry as a domain controller in the domain specified by domain-name. It is required when the entry is a domain controller. It should not be included on entries for member servers.

  The #DOM:domain-name directive affects how the logon and browser services behave in routed environments. It is also used in user account management and in trust relationships.

For example, the following entries should be included in the LMHOSTS file on a BDC that is not in the same IP subnet as the PDC (if the two systems are in the same IP subnet, they can resolve names using broadcasts). In this example, the PDC name is DOMPDC at IP address 10.20.30.40 in the domain LANGROUP:

```
10.20.30.40   DOMPDC #PRE #DOM:LANGROUP
10.20.30.40   "LANGROUP \0x1B" #PRE
```

The \0x1B name will be registered only by the PDC for the domain. If a BDC is promoted to PDC, the original PDC will release the \0x1B name, allowing the new PDC to register it; LMHOSTS files on other systems that contain an entry for this \0x1B name must be updated to reflect the IP address of the new PDC.
Implementing a Wide Area Network

6.2 Using the LMHOSTS File for Wide Area Networking

If the domain PDC is a PATHWORKS or Advanced Server for OpenVMS server running on multiple members of an OpenVMS Cluster, only one cluster member will register the \0x1B name (the first to start the NetLogon service). However, if the server stops on that cluster member, the \0x1B name will be released by that cluster member and will then be registered by another cluster member running the server. In this scenario, LMHOSTS files on other systems that contain an entry for this \0x1B name must be updated to reflect the IP address of the cluster member that has registered, and now holds, the \0x1B name. To determine the cluster member that has registered and currently holds the \0x1B name, execute the NBSHOW KRB command at the OpenVMS DCL prompt on each node of the cluster and look for the \0x1B name in the name table that is displayed. The \0x1B name will show up in the name table of only one of the cluster members. The command NBSHOW is a special Advanced Server management command that is defined in the command file SYS$MANAGER:PWRK$DEFINE_COMMANDS.COM; for more information, see Section 5.5, How to Define PATHWORKS Advanced Server Commands When You Log In.

Caution

If LMHOSTS files are not updated on all systems to reflect a PDC change, these systems might not be able to find the PDC for the domain. This would affect domain operations adversely.

In environments using trust relationships, the domain controllers in trusting domains must establish a secure communications channel with a domain controller in the trusted domain. This allows a user with an account in the trusted domain to access resources provided by a domain that trusts the user’s domain (called pass-through authentication). Therefore, domain controllers in the trusting domain, as well as those in the trusted domain, should list all domain controllers from the other domain in their respective LMHOSTS file. (This assumes other NetBIOS name resolution methods, such as WINS, are not being used.) Each domain controller should also include a \0x1B entry for the PDC of the other domain. In the following example, the domain LANGROUP trusts the domain CORPDOM. The LANGROUP domain consists of the following domain controllers:

<table>
<thead>
<tr>
<th>Name</th>
<th>IP Address</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGPPDC</td>
<td>192.20.30.40</td>
<td>PDC</td>
</tr>
</tbody>
</table>
Implementing a Wide Area Network

6.2 Using the LMHOSTS File for Wide Area Networking

<table>
<thead>
<tr>
<th>Name</th>
<th>IP Address</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>LGPBDC</td>
<td>192.20.30.41</td>
<td>BDC</td>
</tr>
</tbody>
</table>

The CORPDOM domain consists of the following domain controllers:

<table>
<thead>
<tr>
<th>Name</th>
<th>IP Address</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>CORPPDC</td>
<td>110.5.5.5</td>
<td>PDC</td>
</tr>
<tr>
<td>CORPBDC1</td>
<td>110.5.5.20</td>
<td>BDC</td>
</tr>
<tr>
<td>CORPBDC2</td>
<td>110.10.1.1</td>
<td>BDC</td>
</tr>
</tbody>
</table>

To enable the domain controllers in domain LANGROUP to locate a domain controller in domain CORPDOM, include the following entries in the LMHOSTS file located on domain controllers in domain LANGROUP:

110.5.5.5 CORPPDC #PRE #DOM:CORPDOM
110.5.5.5 "CORPDOM \0x1B" #PRE
110.5.5.20 CORPBDC1 #PRE #DOM:CORPDOM
110.10.1.1 CORPBDC2 #PRE #DOM:CORPDOM

Similarly, to enable the domain controllers in domain CORPDOM to locate the domain controllers in domain LANGROUP, include the following entries in the LMHOSTS file located on the domain controllers in domain CORPDOM:

192.20.30.40 LGPPDC #PRE #DOM:LANGROUP
192.20.30.40 "LANGROUP \0x1B" #PRE
192.20.30.41 LGPBDC #PRE #DOM:LANGROUP

The #DOM directive is required in these cases. It explicitly designates the system as a domain controller in the specified domain. Note that if you include member servers in the LMHOSTS file (whether they be Windows NT or Advanced Server member servers), you should omit the #DOM directive. Member servers are not domain controllers.

6.2.4 Managing the LMHOSTS File

To change the list of available nodes, you can edit the file at any time. Domain controller entries (specified by the #DOM directive) and computer name entries without the #PRE directive are resolved by checking the LMHOSTS file dynamically. This check occurs whenever a name needs to be resolved and is not found in the name cache.
Implementing a Wide Area Network

6.2 Using the LMHOSTS File for Wide Area Networking

To disable LMHOSTS name resolution, rename all versions of the LMHOSTS file to any name other than LMHOSTS. Or, you can use the Configuration Manager to disable LMHOSTS name resolution. Start the Configuration Manager ($ ADMIN/CONFIG), select the Transports option, and clear the check mark next to the Enable LMHOSTS Resolution option. When you use the Configuration Manager to enable or disable LMHOSTS name resolution, the change is not dynamic; that is, the change will not go into effect until the next time the Advanced Server is started.

When you add an entry to the LMHOSTS file while the Advanced Server is running, if the entry includes the #PRE directive, the entry will not be cached permanently (as directed by the #PRE part of the entry) until the next restart of the server; however, the change is effective immediately, as it will be read dynamically when the name next needs to be resolved.

6.2.5 Using the LMHOSTS Log File

If errors occur when the LMHOSTS file is accessed, the errors are recorded in the following file:

PWRK$LMROOT:[LOGS]PWRK$KNBDAEMON_nodename.LOG

This file is open and being written to while the PATHWORKS Advanced Server is running. To close the log file, you must stop the PATHWORKS Advanced Server.

To prevent the log file from becoming too large, each error is logged only once — the first time it occurs. If an error is found in the log file, it is not logged again.

6.3 Using WINS in a Wide Area Network

You can configure the PATHWORKS Advanced Server as a WINS client. This allows the Advanced Server to use a WINS Server for NetBIOS name registration, resolution, renewal, and release in a wide area network configuration.

For more information on how to use the Configuration Manager to configure the Advanced Server to use WINS, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.
Implementing a Wide Area Network
6.3 Using WINS in a Wide Area Network

6.3.1 Setting up WINS Support for OpenVMS Clusters

To allow clients that are configured for WINS support to use an Advanced Server alias name to connect to a clustered Advanced Server across a WAN, you must add to the WINS database a static multihomed entry for the Advanced Server alias name.

When adding the static multihomed entry for the Advanced Server alias name, you should enter the TCP/IP address of each node in the OpenVMS Cluster that is running the Advanced Server.

For more information about adding static entries to the WINS database, refer to your WINS product documentation.

---

**Caution**

If you plan to use DNS name resolution to provide cluster load balancing in WANs, you might need to remove all static entries for the cluster alias from the WINS database. (If Windows 95, Windows 98, or Windows NT clients are configured to use both WINS and DNS for NetBIOS name resolution, they first query the WINS server to resolve the name.) For more information about enabling cluster load balancing in WANs, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.

---

6.4 Using DNS in a Wide Area Network

You can configure the Advanced Server as a DNS client. This allows the Advanced Server to use a DNS server for NetBIOS name resolution. The Advanced Server uses DNS for name resolution as a last resort if all other methods fail to resolve a NetBIOS name.

---

**Note**

DNS name resolution is not provided as a replacement for WINS and/or LMHOSTS but rather as a supplement to them. With DNS, the Advanced Server still uses WINS, LMHOSTS, or broadcast methods for resolving names.

---

For more information on how to use the Configuration Manager to configure the Advanced Server to use DNS, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator’s Guide.
This chapter describes how to remove the PATHWORKS Advanced Server software from your system.

This chapter consists of the following sections:

• Section 7.1, PATHWORKS Advanced Server Deinstallation Command Procedure
• Section 7.2, Removing the PATHWORKS NetWare Server

You may need to remove server software for one of the following reasons:

• If the installation failed
  If the IVP indicates that the software installation procedure failed, you must reinstall the PATHWORKS Advanced Server software.
  If your system has enough free disk space, you can install the server again without deinstalling the PATHWORKS Advanced Server. However, if you do not have enough disk space, you must remove PATHWORKS Advanced Server before reinstalling it.
  For more information about disk space requirements, see Section 1.9.9, Step 9: Check Disk Space Requirements.

• If you are upgrading
  If the system is running the PATHWORKS for OpenVMS (NetWare) server, the NetWare server software must be removed before you can install PATHWORKS Advanced Server. If the NetWare server is installed when you run the PATHWORKS Advanced Server installation procedure, it gives you the option of removing the NetWare server software (Section 2.3.2, Installing the PATHWORKS Advanced Server on a System with the NetWare Server). Alternatively, you can manually remove the NetWare server using the procedure described in Section 7.2, Removing the PATHWORKS NetWare Server.
Removing PATHWORKS Advanced Server Software

7.1 PATHWORKS Advanced Server Deinstallation Command Procedure

7.1 PATHWORKS Advanced Server Deinstallation Command Procedure

You remove the PATHWORKS Advanced Server using a command procedure that is included when you install PATHWORKS Advanced Server. The deinstallation command procedure performs the following operations:

- Shuts down the server automatically.
- Prompts you to enter information necessary to complete the deinstallation procedure.
- Removes all PATHWORKS Advanced Server images, support files, and logical names that are created during the installation procedure.
- Prompts you whether to remove all Advanced Server data files from the system.
- Removes the PATHWORKS Advanced Server accounts if you delete the data files.
- If an an older PATHWORKS server (such as PATHWORKS for OpenVMS (Macintosh) or PATHWORKS V4) is detected, prompts you whether you want to delete the NETBIOS image SYS$COMMON:[SYSEXE]NETBIOS.EXE. Normally, you should not delete the NETBIOS image. You might want to delete it if you are installing an older kit, for example. Depending on your response to this prompt, the procedure saves or deletes several other related files. If you delete the NETBIOS image, the PATHWORKS mail server and DOS File Maintenance utility will not operate.

Saved files include files that might be needed later, such as:

- PWRK$DELETEACE.EXE and PWRK$FIXACE.EXE, both of which can be used to optimize disk storage — the former by removing unwanted ACEs, the latter by compressing ACEs, removing unnecessary ACEs, and preventing ACEs from being propagated to files created in shares. For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator's Guide.
- PWRK$DEINSTAL.COM, which you might need for removing data files at a later time, if you opted to save the data files while removing the server software.
- Removes the NETBIOS$ACCESS OpenVMS identifier, unless you choose to save the NETBIOS image.
Removing PATHWORKS Advanced Server Software

7.1 PATHWORKS Advanced Server Deinstallation Command Procedure

- Removes PATHWORKS Advanced Server DECnet objects.
- Deassigns all Advanced Server logical names.

7.1.1 Using the PATHWORKS Advanced Server Deinstallation Procedure

To start the deinstallation procedure and remove PATHWORKS Advanced Server software:

1. Ensure that you are logged in to the SYSTEM account.
2. Ensure that no processes are running the Advanced Server ADMINISTER command-line interface.
3. Start the deinstallation command procedure, as follows:
   
   $ @SYS$UPDATE:PWRK$DEINSTAL

   Table 7–1, PWRK$DEINSTAL Prompts, tells you how to respond to the prompts the deinstallation procedure displays.

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Outcome</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you sure you want to deinstall PATHWORKS Advanced Server [no]:</td>
<td>Continue</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Exit</td>
<td>Return</td>
</tr>
<tr>
<td>Do you want to delete the PATHWORKS Advanced Server data files [no]:</td>
<td>Save the PATHWORKS Advanced Server on-disk structure, including the user accounts and share databases</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Remove the PATHWORKS Advanced Server on-disk structure, including the user accounts and share databases</td>
<td>YES</td>
</tr>
</tbody>
</table>

7.1.2 Sample PATHWORKS Advanced Server Deinstallation Procedure

This is a sample of the deinstallation procedure for PATHWORKS Advanced Server software. In this example, PATHWORKS is not currently running. If PATHWORKS PATHWORKS is running, the deinstallation procedure shuts down PATHWORKS and indicates it is doing so.
Removing PATHWORKS Advanced Server Software

7.1 PATHWORKS Advanced Server Deinstallation Command Procedure

This procedure deletes all PATHWORKS V6.1 for OpenVMS (Advanced Server) images.

Are you sure you want to deinstall PATHWORKS V6.1 for OpenVMS (Advanced Server)? [no]: YES
Do you want to delete the Advanced Server data files [no]: YES

Deleting PATHWORKS for OpenVMS common images...
Deleting PATHWORKS for OpenVMS NETBIOS component...
Deleting PATHWORKS V6.1 for OpenVMS (Advanced Server) images...
Deleting Advanced Server data files...
Removing PWRK$DEFAULT and PWRK$GUEST VMS accounts...
Removing PATHWORKS V6.1 for OpenVMS identifiers...
Removing PATHWORKS V6.1 for OpenVMS DECnet objects...
Deassigning PATHWORKS V6.1 for OpenVMS logical names...
PATHWORKS V6.1 for OpenVMS (Advanced Server) is now deinstalled.

7.2 Removing the PATHWORKS NetWare Server

The PATHWORKS for OpenVMS (NetWare) software is no longer included with the PATHWORKS for OpenVMS software kit. You must run the PATHWORKS for OpenVMS (NetWare) deinstallation procedure before you install PATHWORKS for OpenVMS (Advanced Server).

To start the deinstallation procedure and remove the PATHWORKS NetWare server:

1. Be sure you are logged in to the SYSTEM account.
2. Start the NetWare deinstallation procedure, as follows:
   
   $ @SYS$UPDATE:PWVN$DEINSTAL

   Table 7–2, PWVN$DEINSTAL Prompts, tells you how to respond to the prompts the NetWare server deinstallation procedure displays.
Table 7–2 PWVN$DEINSTAL Prompts

<table>
<thead>
<tr>
<th>Prompt</th>
<th>Desired Outcome</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are you sure you want to deinstall Compaq PATHWORKS V1.0H for OpenVMS (NetWare) [no]:</td>
<td>Continue</td>
<td>YES</td>
</tr>
<tr>
<td></td>
<td>Exit</td>
<td></td>
</tr>
<tr>
<td>Do you want to delete the NetWare data files [no]:</td>
<td>Save the NetWare on-disk structure, including the configuration files</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Remove the NetWare on-disk structure, including the configuration files</td>
<td>YES</td>
</tr>
<tr>
<td>Do you want to delete the NetWare SYS Volume [no]:</td>
<td>Save the NetWare SYS volume</td>
<td>Return</td>
</tr>
<tr>
<td></td>
<td>Remove the NetWare SYS volume</td>
<td>YES</td>
</tr>
</tbody>
</table>

1To install PATHWORKS Advanced Server, you must respond to this question with YES.

7.2.1 Sample NetWare Server Deinstallation Procedure

This is a sample of the deinstallation procedure for PATHWORKS for OpenVMS (NetWare).

$ @SYS$UPDATE:PWVN$DEINSTAL

This procedure shuts down all PATHWORKS V1.0H for OpenVMS servers, and deletes all PATHWORKS V1.0H for OpenVMS (NetWare) images.

Are you sure you want to deinstall PATHWORKS V1.0H for OpenVMS (NetWare) [no]: YES

Do you want to delete the NetWare SYS Volume [no]: YES

Stopping PATHWORKS for OpenVMS (NetWare) Server...

Process NETBIOS stopped
Process PWRK$LICENSE_R stopped
Stopping IPX Daemon (NPSD)...

Deleting PATHWORKS for OpenVMS common images...
Deleting PATHWORKS for OpenVMS NETBIOS component...
Deleting PATHWORKS V1.0H for OpenVMS (NetWare) images...
Deleting NetWare data files...
Deleting NetWare SYS Volume...
Removing PWRK$DEFAULT and PWRK$GUEST VMS accounts...
Removing PATHWORKS V1.0H for OpenVMS identifiers...
Removing PATHWORKS V1.0H for OpenVMS DECnet objects...
Deassigning PATHWORKS V1.0H for OpenVMS logical names...

PATHWORKS V1.0H for OpenVMS (NetWare) is now deinstalled.
Table A–1 summarizes the tasks that you need to perform to install and configure the PATHWORKS Advanced Server. You can photocopy this table and use it as a checklist as you read about and complete the tasks in this book.
## Installation and Upgrade Checklist

### Table A–1 Installation and Upgrade Checklist

<table>
<thead>
<tr>
<th></th>
<th>Prepare for the installation by completing all preinstallation tasks on the checklist in Section 1.9, Preinstallation Tasks, including the following:</th>
</tr>
</thead>
<tbody>
<tr>
<td>a</td>
<td>Check the part listing.</td>
</tr>
<tr>
<td>b</td>
<td>Make sure that you have the required hardware.</td>
</tr>
<tr>
<td>c</td>
<td>Log in to the SYSTEM account (or an equivalent account).</td>
</tr>
<tr>
<td>d</td>
<td>Make sure your system has the required software.</td>
</tr>
<tr>
<td>e</td>
<td>Read the release notes.</td>
</tr>
<tr>
<td>f</td>
<td>Make sure that the system parameters GBLPAGES, GBLSECTIONS, PROCSECTCNT, and SCSNODE are set properly.</td>
</tr>
<tr>
<td>g</td>
<td>Make sure the ENQLM quota system process parameter is set properly.</td>
</tr>
<tr>
<td>h</td>
<td>Back up the system disks.</td>
</tr>
<tr>
<td>i</td>
<td>Make sure that you have enough disk space to install the software.</td>
</tr>
<tr>
<td>j</td>
<td>Make sure that the queue manager is running.</td>
</tr>
<tr>
<td>k</td>
<td>Check the time zone configuration.</td>
</tr>
<tr>
<td>l</td>
<td>Verify that DECnet (or DECnet-Plus) and TCP/IP, if needed, are running.</td>
</tr>
<tr>
<td>m</td>
<td>Check for existing Compaq OpenVMS server images and files on the system. The system should be free of PATHWORKS for OpenVMS (NetWare) and PATHWORKS (LAN Manager) files, and no Compaq OpenVMS file and printer server images should be running.</td>
</tr>
<tr>
<td>n</td>
<td>Check OpenVMS Cluster configuration, if installing on an OpenVMS Cluster.</td>
</tr>
</tbody>
</table>

(continued on next page)
### Table A–1 (Cont.) Installation and Upgrade Checklist

2. Start the installation procedure and respond to installation prompts. You may choose to install:
   - The complete PATHWORKS Advanced Server
   - The Upgrade utility only
   - The License Server only
   - The PATHWORKS external authentication software only

When installing the PATHWORKS Advanced Server in an OpenVMS Cluster, perform these functions in the order indicated:

1. Install the server everywhere appropriate in the OpenVMS Cluster
2. Configure the server everywhere in the cluster
3. Then, start the server everywhere in the cluster

3. Start the configuration procedure and respond to configuration prompts.

4. If you are upgrading from PATHWORKS V5 for OpenVMS (LAN Manager), complete the upgrade procedure. Refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Migration Guide for information about how to:
   a. Determine the role of the server
   b. Upgrade the server
   c. Upgrade OpenVMS Clusters
   d. Create upgrade reports
   e. Upgrade users and groups
   f. Upgrade shares
   g. Upgrade security
   h. Upgrade server configuration parameters

5. Run the Installation Verification Procedure (if you did not do so when you installed the server).

6. Start the server (if you did not do so when you configured the server).
Sample Complete Server Installation and Configuration

This appendix shows sample installation and configuration procedures for the PATHWORKS Advanced Server on an OpenVMS Cluster.

B.1 Sample Server Installation

The following example shows a sample installation dialog for the PATHWORKS Advanced Server.

$ @SYS$UPDATE:VMSINSTALL PWRK061 SYS$DEVICE:[KITS.PWRK]
OpenVMS AXP Software Product Installation Procedure V7.2-IH1

It is 16-SEP-2001 at 15:29.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? [return]

The following products will be processed:
PWRK V6.1
Beginning installation of PWRK V6.1 at 15:29

$VMSINSTALL-I-RESTORE, Restoring product save set A ...
$VMSINSTALL-I-REMOVED, Product's release notes have been moved to SYS$HELP.

PATHWORKS for OpenVMS Installation

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Sample Complete Server Installation and Configuration
B.1 Sample Server Installation

Please select from the following install options:

PATHWORKS V6.1 for OpenVMS (Advanced Server)
PATHWORKS V6.1 for OpenVMS (Advanced Server) License Server (only)
External Authentication images (only)

* Do you want to install the complete PATHWORKS V6.1 for OpenVMS [NO]? YES

The following components will be installed:

PATHWORKS V6.1 for OpenVMS (Advanced Server)

If the selection is correct, the installation will continue.
If the selection is not correct, you can change your selection.
Press CTRL/Y if you want to terminate the installation.

* Is the selection correct [YES]? YES

NOTE

Because this kit provides a new streams execlet for NetBEUI and TCP/IP, you MUST reboot all nodes in the cluster that are now running or have run PATHWORKS to complete installation of PATHWORKS.
If you do not reboot the nodes at this time, you must remember to reboot them later before starting PATHWORKS.

To complete the installation of this product, you should reboot the system. If it is not convenient to reboot at this time, then enter NO to the following question.

If you enter NO, the installation procedure will continue.

* Will you allow a system shutdown after this product is installed [YES]? NO

$PWRK-I-VERSION, Checking for OpenVMS version 6.2, or later...

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

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

$PWRK-I-FREEBLKS, Checking for 160000 free blocks

User Accounts and User Identification Codes (UICs)

PATHWORKS for OpenVMS creates two OpenVMS accounts: a default account, PWRK$DEFAULT, and a guest account, PWRK$GUEST. The default UIC group number for both these new accounts depends on the following:

- If you are installing the server for the first time, the default is the first unused UIC group number, starting with 360.
- If there is an existing account PCFS$ACCOUNT, the default is the UIC group number associated with PCFS$ACCOUNT.
If there is an existing account PWRK$DEFAULT or PWRK$GUEST, the default is the UIC group number associated with PWRK$DEFAULT or PWRK$GUEST, in preference to PCF$ACCOUNT. However, the default UIC group number will not be used to change the UIC of any existing accounts.

For more information about UIC group numbers, see the OpenVMS System Manager's Manual.

For the default UIC group number for PWRK$DEFAULT and PWRK$GUEST [360]:

All questions have been answered. The installation of PATHWORKS for OpenVMS will continue.

%PWRK-I-ACCOUNTS, Creating OpenVMS accounts for PWRK$DEFAULT and PWRK$GUEST
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named PWRK$DEFAULT.
%UAF-I-ADDMSSG, user record successfully added
%UAF-I-RDBADDSGU, identifier PWRK$DEFAULT value [000360,000001] added to rights database
%VMSINSTAL-I-ACCOUNT, This installation creates an ACCOUNT named PWRK$GUEST.
%UAF-I-ADDMSSG, user record successfully added
%UAF-I-RDBADDSGU, identifier PWRK$GUEST value [000360,000002] added to rights database
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%PWRK-I-DEFOBJRS, Defining DECnet objects PCX$SERVER and PCX$MAIL
%PWRK-I-DCLCMS, Installing PATHWORKS DCL commands
%PWRK-I-SPECIFY, Specifying target directories for the provided files
%PWRK-I-OBSOLETE, Deleting obsolete files

Next Steps
-----------

To continue the installation procedure, enter the following command to execute the server configuration command procedure:

$ @SYS$UPDATE:PWRK$CONFIG

For information about the configuration command procedure, see the PATHWORKS (Advanced Server) Installation and Configuration Guide.

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

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Starting Installation Verification Procedure for PATHWORKS V6.1 for OpenVMS (Advanced Server)

%PWRK-I-NORMAL, IVP completed successfully

Installation of PWRK V6.1 completed at 15:36
Sample Complete Server Installation and Configuration

B.1 Sample Server Installation

Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY
Creating installation data file: VMI$ROOT:[SYSUPD]PWRK061.VMI_DATA

VMSINSTAL procedure done at 15:36

B.2 Sample Server Configuration

The following example shows a sample configuration dialog for the PATHWORKS Advanced Server.

$ @SYS$UPDATE:PWRK$CONFIG
PATHWORKS V6.1 for OpenVMS (Advanced Server) Configuration Procedure

PATHWORKS stores and accesses the following types of data files:

- Configuration parameter files
- License Server data files
- Log files
- Printer spool files
- Virtual memory section files

You can specify any existing OpenVMS disk device that has at least 5000 free blocks of disk space to store these data files.

Note: the server frequently accesses the data files stored on the disk. If these files are stored on the system disk, it can degrade the performance of both the OpenVMS system and the server. Therefore, Compaq recommends that you specify a disk other than the system disk.

Press RETURN to continue:

If this OpenVMS Cluster has multiple system disks, make sure that all nodes on which you plan to run PATHWORKS:

- Use the same disk device to store and access PATHWORKS data files.
- Share the same SYSUAF.DAT file. In each system disk’s startup file, define a system logical name that points all nodes to the shared SYSUAF.DAT file. For example:

  $ define/system/exec sysuaf pencil@dka300:[sys0.sysexe]sysuaf.dat

  The startup file is called SYS$MANAGER:SYSTARTUP_VMS.COM

Enter disk device name where PATHWORKS data files will be stored

[SYS$SYSDEVICE:]: DISK$PWRK:  
Creating PATHWORKS directory tree on DISK$PWRK:....
Creating Advanced Server directory tree....
Copying client files to Advanced Server directory tree...
Creating PATHWORKS Monitor user authorization file
PWRK$COMMON:PWMONUAF.DAT ...
Changing the server configuration parameters will allow you to modify this server’s client capacity and select the transports to be used.

COBRAZ is currently configured to
   + support 20 PC clients
   + use the following transport(s): DECnet

If you want this server to be the primary domain controller, you should configure it to use all the transports used by any of the backup servers in the domain.

If you want this server to be a backup domain controller, you should configure it to have at least one transport in common with the domain’s primary domain controller, otherwise this configuration will fail.

If you do not change the configuration parameters now, you may do so later by typing ADMIN/CONFIG.

Do you want to change the server configuration parameters now? [YES]:

NO

Reading current configuration parameters ...

PATHWORKS V6.0 for OpenVMS is presently configured to run as follows:

1. Run the License Server: NO
2. Enable Timesource service: NO
3. Enable Alerter service: YES
3a. Alert user names: Administrator
4. Enable Netlogon service: YES
5. Advanced Server domain: LANGROUP
6. Advanced Server role: PRIMARY
7. Advanced Server computer name: COBRAZ
7a. PATHWORKS OpenVMS Cluster alias: COBRAZ_ALIAS
8. Server announce comment: PATHWORKS V6.1 for OpenVMS
   (Advanced Server)

Enter item number, or RETURN to use these values [DONE]:

Saving parameters ...

Checking the access control list file ...
Successfully created new ACL store
Creating sharefile PWRK$LMROOT:[LANMAN.DATAMAPS]SHAREDB. ...
New sharefile has been created.
ADMIN$ added
IPC$ added
PWUTIL added
The Advanced Server Administrator account is used to administer the server. The Administrator account is mapped by default to the OpenVMS SYSTEM account.

The Administrator account password can be up to 14 characters long and the case of the characters used will be preserved.

Enter Administrator account password: 

Re-enter to verify password: 

Changing password for Administrator account...

Checking system resources...

The current system configuration for COBRAZ will support 20 PC clients. PATHWORKS is configured to use DECnet.

To automatically start PATHWORKS V6.1 for OpenVMS at system startup, you should add the following line to the SYSSMANAGER:SYSTARTUP_VMS.COM file.

@SYS$STARTUP:PWRK$STARTUP

Note: Add this line below the lines that start all network transports (such as DECnet).

Before starting PATHWORKS V6.1 for OpenVMS on this system, be sure to execute @SYS$UPDATE:PWRK$CONFIG on each node that will run PATHWORKS.

Do you want to start PATHWORKS V6.1 for OpenVMS on node COBRAZ now [yes]: NO
Sample Standalone License Server Installation and Configuration

This appendix shows sample installation and configuration procedures for a standalone License Server on an OpenVMS Cluster.

C.1 Sample Standalone License Server Installation

The following example shows a sample installation dialog for the standalone License Server.

```plaintext
$ @SYS$UPDATE:VMSINSTAL PWRK061 SYS$DEVICE:[KITS.PWRK]  
OpenVMS AXP Software Product Installation Procedure V7.2-1H1
It is 16-SEP-2001 at 16:08.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]?  

The following products will be processed:
PWRK V6.1
Beginning installation of PWRK V6.1 at 16:08
$VMSINSTAL-I-RESTORE, Restoring product save set A ...
$VMSINSTAL-I-RELMOVED, Product's release notes have been moved to SYS$HELP.
```

PATHWORKS for OpenVMS Installation

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Sample Standalone License Server Installation and Configuration
C.1 Sample Standalone License Server Installation

Please select from the following install options:

PATHWORKS V6.1 for OpenVMS (Advanced Server)
PATHWORKS V6.1 for OpenVMS (Advanced Server) License Server (only)
External Authentication images (only)

* Do you want to install the complete PATHWORKS V6.1 for OpenVMS [NO]? NO
* Do you want to install only the PATHWORKS License Server [NO]? YES
* Do you want to install only the External Authentication images [NO]? NO

The following components will be installed:

PATHWORKS V6.1 License Server

If the selection is correct, the installation will continue.
If the selection is not correct, you can change your selection.
Press CTRL/Y if you want to terminate the installation.

* Is the selection correct [YES]? YES

%PWRK-I-VERSION, Checking for OpenVMS version 6.2, or later...

NOTE
----

Because this kit provides a new streams execlet for NetBEUI and TCP/IP, you MUST reboot the system to complete installation of PATHWORKS. If you do not reboot the system at this time, you must remember to reboot later before starting PATHWORKS.

To complete the installation of this product, you should reboot the system. If it is not convenient to reboot at this time, then enter NO to the following question.

* Will you allow a system shutdown after this product is installed [YES]? YES

%PWRK-I-FREEBLKS, Checking for 160000 free blocks

All questions have been answered. The installation of PATHWORKS for OpenVMS will continue.

%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%PWRK-I-DEFOBJS, Defining DECnet objects PCX$SERVER and PCSA$MAIL
%PWRK-I-DCLMDS, Installing PATHWORKS DCL commands
%PWRK-I-ESPECIFY, Specifying target directories for the provided files
%PWRK-I-OBDELETE, Deleting obsolete files
C.1 Sample Standalone License Server Installation

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


Starting Installation Verification Procedure
for PATHWORKS V6.1 for OpenVMS (Advanced Server)

%PWRK-I-NORMAL, IVP completed successfully
Installation of PWRK V6.1 completed at 19:33
Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY
Creating installation data file: VMI$ROOT:[SYSUPD]PWRK061.VMI_DATA
VMSINSTAL procedure done at 19:34

C.2 Sample Standalone License Server Configuration

The following example shows a sample PATHWORKS Advanced Server configuration procedure for the standalone License Server.

$ @SYS$UPDATE:PWRK$CONFIG
PATHWORKS V6.1 for OpenVMS (Advanced Server) Configuration Procedure

PATHWORKS stores and accesses the following types of data files:

- Configuration parameter files
- License Server data files
- Log files
- Printer spool files
- Virtual memory section files

You can specify any existing OpenVMS disk device that has at least 5000 free blocks of disk space to store these data files.

Note: the server frequently accesses the data files stored on the disk. If these files are stored on the system disk, it can degrade the performance of both the OpenVMS system and the server. Therefore, Compaq recommends that you specify a disk other than the system disk.

If this OpenVMS Cluster has multiple system disks, make sure that all nodes on which you plan to run PATHWORKS:

- Use the same disk device to store and access PATHWORKS data files.
- Share the same SYSUAF.DAT file. In each system disk's startup file, define a system logical name that points all nodes to the shared SYSUAF.DAT file. For example:

  $ define/system/exec sysuaf pencil$dka300:[sys0.sysexe]sysuaf.dat

  The startup file is called SYS$MANAGER:SYSTARTUP_VMS.COM

Enter disk device name where PATHWORKS data files will be stored
[SYS$SYSDEVICE:]: DISK$PWRK: [PWD]
Creating PATHWORKS directory tree on DISK$PWRK:...
The PATHWORKS License Server can serve PATHWORKS licenses for Advanced Server clients over DECnet, NetBEUI, and TCP/IP. The Advanced Server file server does not need to be running for the License Server to operate.

Do you want to serve PATHWORKS licenses over DECnet [yes]: [Return]
Do you want to serve PATHWORKS licenses over NetBEUI [no]: YES [Return]
Do you want to serve PATHWORKS licenses over TCP/IP [no]: YES [Return]
Do you want to start the PATHWORKS License Server now [yes]: NO [Return]

$
D

Upgrade Utility Installation

This appendix shows a sample installation of the Upgrade utility.

D.1 Installing the Upgrade Utility

As a first step in upgrading a system that is running a previously released version of PATHWORKS Advanced Server, you can install the Upgrade utility without installing the server. Doing this allows you to run the PATHWORKS (LAN Manager) server while performing the upgrade procedure, avoiding any interruption of services to your users.

If you install the Upgrade utility only, the on-disk structure and datafile format are not changed, and the PATHWORKS (LAN Manager) executables are not replaced.

When you execute the installation procedure on a system that is running PATHWORKS (LAN Manager), the procedure offers you the option of installing the Upgrade utility only. To install the Upgrade utility only, select this option.

Note

When you install the Upgrade utility only, you cannot run the Installation Verification Procedure (IVP); therefore, the prompt asking whether you want to run the IVP is not displayed during the installation.

D.2 Sample Upgrade Utility Installation

The following example shows a sample procedure for installation of the Upgrade utility only.
Upgrade Utility Installation
D.2 Sample Upgrade Utility Installation

$ @SYS$UPDATE:VMSINSTAL PWRK061 SYS$DEVICE:[KITS.PWRK]

OpenVMS VAX Software Product Installation Procedure V6.2
It is 22-AUG-2001 at 15:14.
Enter a question mark (?) at any time for help.
* Are you satisfied with the backup of your system disk [YES]? Y

The following products will be processed:
  PWRK V6.1
  Beginning installation of PWRK V6.1 at 15:14
%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, Product's release notes have been moved to SYS$HELP.

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You have the option to install only the PATHWORKS for OpenVMS Advanced Server upgrade utility, which upgrades your server environment from V5 to V6. If you choose to install only the upgrade utility, no file server components will be installed.

The upgrade utility allows you to continue to run your V5 servers while you perform the upgrade. You may install the Advanced Server after your server environment has been upgraded.

However, if you choose not to install the upgrade utility only, the installation will proceed with the regular kit installation. You may invoke the upgrade utility after the installation by typing @SYS$UPDATE:PWRK$V6UPGRADE.

The following question allows you to install only the upgrade utility:

* Do you want to install the upgrade utility only [NO]? YES
%PWRK-I-VERSION, Checking for OpenVMS version 6.1, or later...
* Do you want to purge files replaced by this installation [YES]? Y
%PWRK-I-FREEBLKS, Checking for 30500 free blocks
%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%PWRK-I-SKIPSET, Skipping product save set C (Alpha Common only) ...
To upgrade the server, enter the following command to invoke the server upgrade utility:

```
$ @SYS$UPDATE:PWRK$V6UPGRADE
```

For information about the upgrade utility, see the PATHWORKS (Advanced Server) Server Migration Guide.

```
$ @SYS$UPDATE:PWRK$V6UPGRADE
```

Return

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

Installation of PWRK V6.1 completed at 15:15
VMSINSTAL procedure done at 15:15

This procedure is used to invoke the Upgrade utility. This command procedure will ask you a few questions before starting the Upgrade utility.

If you're upgrading this server as a backup domain controller it needs to communicate with the primary domain controller (PDC). In order to communicate with the PDC a transport needs to be started.

Will this server be upgraded as a BDC or Member server?
[NO]: Y

The upgrade procedure uses only one of the transports configured on the server. Choose a transport, and make sure that the designated primary domain controller is running that transport.

This PATHWORKS server is configured to use DECnet, NetBEUI, TCP/IP.

Which transport do you want to use for upgrade? [DECnet]:

Process PWRK$KNBDAEMON already created
This appendix shows a sample procedure for installing the external authentication software only.

E.1 Sample External Authentication Software Installation

The following example shows a sample installation dialog for the external authentication software only.

OpenVMS AXP Software Product Installation Procedure V7.2-1H1

It is 8-SEP-2001 at 19:48.

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

The following products will be processed:
  PWRK V6.1

Beginning installation of PWRK V6.1 at 19:48

%VMSINSTAL-I-RESTORE, Restoring product save set A ...
%VMSINSTAL-I-REMOVED, Product’s release notes have been moved to SYS$HELP.

PATHWORKS for OpenVMS Installation

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Sample External Authentication Installation
E.1 Sample External Authentication Software Installation

Please select from the following install options:

- PATHWORKS V6.1 for OpenVMS (Advanced Server)
- PATHWORKS V6.1 for OpenVMS (Advanced Server) License Server (only)
- External Authentication images (only)

* Do you want to install the complete PATHWORKS V6.1 for OpenVMS [NO]? [Return]
* Do you want to install only the PATHWORKS License Server [NO]? [Return]
* Do you want to install only the External Authentication images [NO]? YES

The following components will be installed:

- External Authentication images (only)

If the selection is correct, the installation will continue. If the selection is not correct, you can change your selection. Press CTRL/Y if you want to terminate the installation.

* Is the selection correct [YES]? [Return]

* Do you want to run the IVP after the installation is finished [YES]? [Return]
* Do you want to purge files replaced by this installation [YES]? [Return]

%PWRK-I-FREEBLKS, Checking for 160000 free blocks

All questions have been answered. The installation of PATHWORKS for OpenVMS will continue.

%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-RESTORE, Restoring product save set E ...
%PWRK-I-DEFOBJS, Defining DECnet objects PCX$SERVER and PCSA$MAIL
%PWRK-I-SPECIFY, Specifying target directories for the provided files
%PWRK-I-OBSPACE, Deleting obsolete files
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...


Starting Installation Verification Procedure for PATHWORKS V6.1 for OpenVMS (Advanced Server)

%PWRK-I-NORMAL, IVP completed successfully

Installation of PWRK V6.0 completed at 19:52

Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY

Creating installation data file: VMI$ROOT:[SYSUPD]PWRK061.VMI_DATA

VMSINSTAL procedure done at 19:54
This appendix includes the following sections:

- Section F.1, PATHWORKS Advanced Server Files, describes the files that are created during the installation procedure.
- Section F.2, PATHWORKS Advanced Server On-Disk Structure, shows the on-disk structure of the PATHWORKS Advanced Server.

### F.1 PATHWORKS Advanced Server Files

Table F–1, Files Installed for the PATHWORKS Advanced Server, describes the files created during the installation of the PATHWORKS Advanced Server.

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DCPS$EXAMPLES:PWRK$BORDER.LUP</td>
<td>DECprint Supervisor printer layup for borders</td>
</tr>
<tr>
<td>DCPS$EXAMPLES:PWRK$NOBORDER.LUP</td>
<td>DECprint Supervisor printer layup for no borders</td>
</tr>
<tr>
<td>DCPS$EXAMPLES:PWRK$REV_LANDSCAPE_BORDER.LUP</td>
<td>DECprint Supervisor printer layup for borders with Windows</td>
</tr>
<tr>
<td>DCPS$EXAMPLES:PWRK$REV_LANDSCAPE_NOBORDER.LUP</td>
<td>DECprint Supervisor printer layup for no borders with Windows</td>
</tr>
</tbody>
</table>

(continued on next page)
## PATHWORKS Advanced Server Files and On-Disk Structure

### F.1 PATHWORKS Advanced Server Files

#### Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$HELP:AS$HLP.HLB$</td>
<td>System Dump Analyzer (SDA) help library (associated with AS$SDA.EXE and invoked within SDA with the AS HELP command)</td>
</tr>
<tr>
<td>SYS$HELP:CS$HLP.HLB$</td>
<td>Help file for common services System Dump Analyzer (SDA) (associated with CS$SDA.EXE and invoked within SDA with the CS HELP command)</td>
</tr>
<tr>
<td>SYS$HELP:PCDISKHLP.HLB</td>
<td>DOS File Maintenance utility help library</td>
</tr>
<tr>
<td>SYS$HELP:PWRK$ADMIN_LIC.HLB</td>
<td>License Manager help library</td>
</tr>
<tr>
<td>SYS$HELP:PWRK$ADMIN_CFG.HLB</td>
<td>Configuration Manager help file</td>
</tr>
<tr>
<td>SYS$HELP:PWRK$MANAGER.HLB</td>
<td>ADMINISTER commands help library</td>
</tr>
<tr>
<td>SYS$HELP:PWRK$SHOWINI.HLB$</td>
<td>Help file for PWRK$SHOWINI.EXE</td>
</tr>
<tr>
<td>SYS$HELP:PWRK$V6UPGRADE.HLB</td>
<td>Upgrade utility help file</td>
</tr>
<tr>
<td>SYS$HELP:PWRK061.RELEASE_NOTES</td>
<td>PATHWORKS Advanced Server release notes</td>
</tr>
<tr>
<td>SYS$HELP:SDA.HLP</td>
<td>System Dump Analyzer help library</td>
</tr>
<tr>
<td>SYS$HELP:STREAMS$HLB.HLB$</td>
<td>Help file for System Dump Analyzer (SDA) for streams (protocol layer) analysis (associated with STREAMS$SDA.EXE and invoked within SDA with the STREAMS HELP command)</td>
</tr>
<tr>
<td>SYS$LIBRARY:AS$SDA.EXE$</td>
<td>System Dump Analyzer (SDA) extension for analyzing Advanced Server system and dumps</td>
</tr>
<tr>
<td>SYS$LIBRARY:CS$SDA.EXE$</td>
<td>System Dump Analyzer (SDA) extension for analyzing common services dumps</td>
</tr>
<tr>
<td>SYS$LIBRARY:NETBIOSSHR.EXE</td>
<td>NetBIOS for DECnet shareable image</td>
</tr>
</tbody>
</table>

1This file is (or is associated with) an unsupported utility or command procedure.

(continued on next page)
<table>
<thead>
<tr>
<th>File Description</th>
<th>File</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$LIBRARY:PCDISKSHR.EXE</td>
<td>DOS File Maintenance utility shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PCSA_MAILSHR.EXE</td>
<td>Mail notification shareable image</td>
</tr>
<tr>
<td>SYS$STARTUP:PCSA$MAIL_STARTUP.COM</td>
<td>PCSAMAIL command for TCP/IP clients invoking the PATHWORKS mail server</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$ACME_MODULE_ALPHA.EXE</td>
<td>External authentication Alpha image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$ACME_MODULE_VAX.EXE</td>
<td>External authentication VAX image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$CMT_LM.EXE</td>
<td>User interface to the Configurator, Monitor, and Tuner utility</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$CMTLIBSHR.EXE</td>
<td>Configurator, Monitor, and Tuner (CMT) shareable library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$CMTSHR.EXE</td>
<td>Configurator, Monitor, and Tuner (CMT) shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$CSSHR_V7.EXE</td>
<td>Common services shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$CSSHR_V6.EXE</td>
<td>Common services shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_GENERIC.TLB</td>
<td>Generic device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA51.TLB</td>
<td>LA51 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA70.TLB</td>
<td>LA70 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA75P.TLB</td>
<td>LA75P device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LG01.TLB</td>
<td>LG01 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LG02.TLB</td>
<td>LG02 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LG06.TLB</td>
<td>LG06 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LG31.TLB</td>
<td>LG31 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LN03R.TLB</td>
<td>LN03R device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL1100.TLB</td>
<td>DEClaser 1100 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL2100.TLB</td>
<td>DEClaser 2100 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL2100P.TLB</td>
<td>DEClaser 2100P device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL2200.TLB</td>
<td>DEClaser 2200 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL2200P.TLB</td>
<td>DEClaser 2200P device control library</td>
</tr>
</tbody>
</table>

(continued on next page)
### Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
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<tbody>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_DL3200.TLB</td>
<td>DEClaser 3200 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_FX1050.TLB</td>
<td>FX1050 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_FX850.TLB</td>
<td>FX850 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_HP_LASERJ_ET.TLB</td>
<td>HP Laserjet device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA210.TLB</td>
<td>LA210 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA324.TLB</td>
<td>LA324 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA50.TLB</td>
<td>LA50 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LA75.TLB</td>
<td>LA75 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LJ_250.TLB</td>
<td>LJ 250 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LN03.TLB</td>
<td>LN03 device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_LN03P.TLB</td>
<td>LN03 PLUS device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_PROPRINTER.TLB</td>
<td>Proprinter device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$DEVCTL_SILENTWRITER.TLB</td>
<td>SilentWriter device control library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$FSLIB_ODS2.EXE</td>
<td>ODS2/ODS5 addon library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LICENSE_LIBSHR.EXE</td>
<td>License shareable library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LICENSE_MGMTSHR.EXE</td>
<td>License management shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMAPISHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMRPCAPISHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMRPCSHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMRPCXNPSHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMTASKSHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$MGTLIBSHR.EXE</td>
<td>PATHWORKS Advanced Server shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$LMLIB_DECNET.EXE</td>
<td>PATHWORKS Advanced Server network interface to DECnet</td>
</tr>
</tbody>
</table>

(continued on next page)
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<table>
<thead>
<tr>
<th>File</th>
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</tr>
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<tbody>
<tr>
<td>SYS$LIBRARY:PWRK$NBLIB_NETBEUI.EXE</td>
<td>PATHWORKS Advanced Server network interface to NetBEUI</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$NBLIB_TCP/IP.EXE</td>
<td>PATHWORKS Advanced Server network interface to TCP/IP</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$PCMSHR.EXE</td>
<td>Cache manager shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$PRINTER_INFORMATION.DAT</td>
<td>Printer information file</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$SDA.EXE</td>
<td>Extension for the System Dump Analyzer (SDA) for analyzing systems and dumps, for backward compatibility (replaced by AS$SDA.EXE, CS$SDA.EXE, and STREAM$SDA.EXE)</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$SDA_V1.EXE</td>
<td>Original extension for System Dump Analyzer</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$STREAMSSHR_V7.EXE</td>
<td>Streams shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$STREAMSSHR_V6.EXE</td>
<td>Streams shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$WINLIBSHR.EXE</td>
<td>PATHWORKS Advanced Server character-cell user interface shareable image</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$XTILIBSHR.EXE</td>
<td>X/Open Transport Interface shareable library</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$XTINETBIOSHR.EXE</td>
<td>X/Open Transport Interface shareable image for NetBIOS</td>
</tr>
<tr>
<td>SYS$LIBRARY:PWRK$XTINSPNBSHR.EXE</td>
<td>X/Open Transport Interface shareable image for DECSNET</td>
</tr>
<tr>
<td>SYS$LIBRARY:SDA.EXE</td>
<td>System Dump Analyzer</td>
</tr>
<tr>
<td>SYS$LIBRARY:STREAMS$SDA.EXE</td>
<td>Streams System Dump Analyzer image for analyzing streams (protocol layer) loadable images</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:PCFSDRIVERDEF.STB</td>
<td>Data structure definitions for PCFSDRIVER</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:PWRK$STREAMSOS_V6.EXE</td>
<td>Streams system-loadable image</td>
</tr>
</tbody>
</table>

1This file is (or is associated with) an unsupported utility or command procedure.

(continued on next page)
Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

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<tr>
<th>File</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SYS$LOADABLE_IMAGES:PWRK$STREAMSOS_V7.EXE</td>
<td>Streams system-loadable image</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:PWRK$STREAMSOS_V6.STB</td>
<td>Symbol table for PWRK$STREAMSOS_V6.EXE</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:PWRK$STREAMSOS_V7.STB</td>
<td>Symbol table for PWRK$STREAMSOS_V7.EXE</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCFSDRIVER_V7.EXE</td>
<td>DECnet I/O and double mapping driver</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCFSDRIVER_V6.STB</td>
<td>Symbol table for SYS$PCFSDRIVER_V6.EXE</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCFSDRIVER_V7.STB</td>
<td>Symbol table for SYS$PCFSDRIVER_V7.EXE</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCIDRIVER_V6.EXE</td>
<td>Cluster Interconnect I/O driver</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCIDRIVER_V7.EXE</td>
<td>Cluster Interconnect I/O driver</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCIDRIVER_V6.STB</td>
<td>Symbol table for SYS$PCIDRIVER_V6.EXE</td>
</tr>
<tr>
<td>SYS$LOADABLE_IMAGES:SYS$PCIDRIVER_V7.STB</td>
<td>Symbol table for SYS$PCIDRIVER_V7.EXE</td>
</tr>
<tr>
<td>SYS$MANAGER:PWRK$DEFINE_COMMANDS.COM¹</td>
<td>Command procedure that defines symbols for commands that run PATHWORKS Advanced Server utilities</td>
</tr>
<tr>
<td>SYS$MANAGER:PWRK$DEFINE_ROOT.COM</td>
<td>Directory tree logical command file created during PWRK$CONFIG.</td>
</tr>
<tr>
<td>SYS$MANAGER:PWRK$SHOWSYS.COM</td>
<td>Command procedure that shows status of file and print server processes</td>
</tr>
<tr>
<td>SYS$MESSAGE:PWRK$MSG.EXE</td>
<td>Advanced Server message file</td>
</tr>
<tr>
<td>SYS$STARTUP:PCSA$MAIL_STARTUP.COM</td>
<td>PCSAMAIL command for TCP/IP clients invoking the PATHWORKS mail server</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$ACME_STARTUP.COM</td>
<td>External authentication startup file</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$CHECK_PARAMS.COM</td>
<td>Command procedure that checks system resources</td>
</tr>
</tbody>
</table>

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### Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

<table>
<thead>
<tr>
<th>File</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SYS$STARTUP:PWRK$COMMON_LOGICALS.COM</td>
<td>Command procedure that defines common logicals</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$COMMON_SHUTDOWN.COM</td>
<td>Common shutdown command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$COMMON_STARTUP.COM</td>
<td>Common startup command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$GATHER_INFO.COM</td>
<td>Command procedure that gathers information into a save set for reporting problems</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LICENSE_R_START.COM</td>
<td>Startup for the License Registrar</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LICENSE_S_START.COM</td>
<td>Startup for the License Server</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LICENSE_SHUTDOWN.COM</td>
<td>License Server shutdown command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LICENSE_STARTUP.COM</td>
<td>License Server startup command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LMBROWSER_START.COM</td>
<td>Browser startup file</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LMMCP_START.COM</td>
<td>Command procedure that runs the PATHWORKS Advanced Server controller</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LMSRV_START.COM</td>
<td>Command procedure that runs the PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$LOGICALS.COM</td>
<td>Command procedure that defines logical names</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$PCSA_SHUTDOWN.COM</td>
<td>PATHWORKS for VMS V4.x shutdown command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$SHUTDOWN.COM</td>
<td>Shutdown command procedure</td>
</tr>
<tr>
<td>SYS$STARTUP:PWRK$STARTUP.COM</td>
<td>Startup command procedure</td>
</tr>
<tr>
<td>SYS$SYSTEM:NetBIOS.EXE</td>
<td>NetBIOS for DECnet</td>
</tr>
<tr>
<td>SYS$SYSTEM:PCDISK.EXE</td>
<td>DOS File Maintenance utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PCSA$MAIL_SERVER.EXE</td>
<td>PATHWORKS client mail server</td>
</tr>
<tr>
<td>SYS$SYSTEM:PCSA_CLAIM_NAME.EXE</td>
<td>PCSA claim name utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PCX$SERVER.COM</td>
<td>Command procedure that starts the PC DECwindows X server (eXcursion)</td>
</tr>
</tbody>
</table>

(continued on next page)
Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

<table>
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<tr>
<th>File</th>
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</tr>
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<tr>
<td>SYS$SYSTEM:PWRK$ACLADM.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$ADMIN.COM</td>
<td>Remote Net Admin command procedure</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$ADMIN_CFG.EXE</td>
<td>Configuration Manager utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$ADMIN_LIC.EXE</td>
<td>License Manager utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$BANNER.EXE</td>
<td>Utility that collects system information and inserts it at top of log files</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$BLOBADM.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$CHACL.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$CHDOMAIN.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$CHGROUP.EXE¹</td>
<td>Standalone utility that manages the PATHWORKS Advanced Server groups database</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$CHUSER.EXE¹</td>
<td>Standalone utility that manages the PATHWORKS Advanced Server user accounts database</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$CHANGEV5ROLE.EXE</td>
<td>V5 to V6 Upgrade utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$DELETEACE.EXE</td>
<td>File ACE utility that removes unwanted ACEs</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$ELFREAD.EXE</td>
<td>Event log file reader utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$EVTREPORT.EXE</td>
<td>Event logger report generator</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$FIXACE.EXE</td>
<td>File ACE utility that compresses ACEs, removes unnecessary ACEs, and so forth</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$GETROLE.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$KNBDAEMON.EXE</td>
<td>Kernel NetBIOS daemon process</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LICENSE_REGISTRAR.EXE</td>
<td>License Registrar</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LICENSE_SERVER.EXE</td>
<td>License Server</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LMECHO.EXE</td>
<td>Debugging utility¹</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LMBROWSER.EXE</td>
<td>PATHWORKS Advanced Server browser image</td>
</tr>
</tbody>
</table>

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(continued on next page)
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<th>File</th>
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</tr>
</thead>
<tbody>
<tr>
<td>SYS$SYSTEM:PWRK$LMMCP.EXE</td>
<td>PATHWORKS Advanced Server controller</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LMSHARE.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Standalone utility that manages the PATHWORKS Advanced Server shares database</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LMSRV.EXE</td>
<td>PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LMSTAT.EXE</td>
<td>Debugging utility&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LOADSTREAMS_V6.EXE</td>
<td>Loader for streams system-loadable image</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LOADSTREAMS_V7.EXE</td>
<td>Loader for streams system-loadable image</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LR_SHOW_USAGE.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>License count units utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$LSACL.EXE</td>
<td>Debugging utility&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MAKEMACH.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MANAGER.EXE</td>
<td>ADMINISTER command line user interface utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MAPUNAME.EXE</td>
<td>Debugging utility&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MASTER.EXE</td>
<td>Master process and event logger</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MODAL.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Standalone utility that manages the PATHWORKS Advanced Server modals database</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$MONITOR.EXE</td>
<td>PATHWORKS Monitor utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$NBDAEMON.EXE</td>
<td>NetBIOS daemon process</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$NBSHOW.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>NetBEUI show status utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$NETEVENT.EXE</td>
<td>Debugging utility&lt;sup&gt;1&lt;/sup&gt;</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$PWMON.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Host-based monitor utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$RMACL.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$SAMCHECK.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$SETSHO.EXE</td>
<td>Set/Show Parameters utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$SHOWINI.EXE&lt;sup&gt;1&lt;/sup&gt;</td>
<td>Utility that displays file and print server parameters</td>
</tr>
</tbody>
</table>

<sup>1</sup>This file is (or is associated with) an unsupported utility or command procedure.

(continued on next page)
<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$SYSTEM:PWRK$SHOWQUOTA.EXE</td>
<td>Show Disk Quota utility</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$SRVCONFIG.EXE</td>
<td>Debugging utility(^1)</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$START.EXE</td>
<td>Utility that starts detached master process and other processes</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$START_PRINTERS.EXE</td>
<td>Utility that starts printer queues and printer destinations</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$STARTSVC.EXE</td>
<td>Debugging utility(^1)</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$STOP.EXE</td>
<td>Utility that stops server processes</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$VAPFADM.EXE</td>
<td>Server configuration tool</td>
</tr>
<tr>
<td>SYS$SYSTEM:PWRK$VERIFY.EXE</td>
<td>Utility that verifies configuration parameters</td>
</tr>
<tr>
<td>SYS$TEST:PWRK$IVP.COM</td>
<td>Installation Verification Procedure (IVP)</td>
</tr>
<tr>
<td>SYS$TEST:PWRK$IVP.DAT</td>
<td>Installation Verification Procedure data file</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$COMMANDS.CLD</td>
<td>Server command line definitions</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$COMMON.SAV(^2)</td>
<td>Backup saveset for the initial server directory tree</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$COMMON_CONFIG.COM</td>
<td>Common configuration command procedure</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$CONFIG.COM</td>
<td>Main configuration command procedure</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$DEFINE_FORMS.COM(^2)</td>
<td>Command procedure that defines printer forms</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$DEINSTAL.COM</td>
<td>PATHWORKS Advanced Server removal command procedure</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$GETPARAM.COM</td>
<td>Command procedure that gets a parameter from PWRK.INI</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$INSTALL_COMMANDS.COM</td>
<td>Command procedure that installs server DCL commands</td>
</tr>
</tbody>
</table>

\(^1\)This file is (or is associated with) an unsupported utility or command procedure.
\(^2\)This file is deleted while you configure the server.

(continued on next page)
Table F–1 (Cont.) Files Installed for the PATHWORKS Advanced Server

<table>
<thead>
<tr>
<th>File</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYS$UPDATE:PWRK$LANMAN.SAV²</td>
<td>BACKUP saveset for the initial PATHWORKS Advanced Server directory tree</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$LICENSE_CONFIG.COM</td>
<td>License Server configuration command procedure</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$LICENSE.SAV</td>
<td>PATHWORKS client license saveset</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$LMCONFIG.COM</td>
<td>Command procedure that sets up the initial PATHWORKS Advanced Server directory tree</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$SETINI.COM</td>
<td>Command procedure that updates file and print server parameters</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$SETPARAM.COM</td>
<td>Command procedure that sets a parameter in PWRK.INI</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$VERSIONS.COM</td>
<td>Command procedure that shows server image versions</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$ROLLBACK.COM</td>
<td>Command procedure for restoring the V5 environment</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$V6 UPGRADE.EXE</td>
<td>V5 to V6 Upgrade utility</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$V6 UPGRADE.COM</td>
<td>V5 to V6 upgrade command procedure</td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$V6 UPGRADE_V6.EXE</td>
<td></td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$V6 UPGRADE_V7.EXE</td>
<td></td>
</tr>
<tr>
<td>SYS$UPDATE:PWRK$PWUTIL.SAV²</td>
<td>BACKUP saveset for PATHWORKS client-based utilities</td>
</tr>
</tbody>
</table>

²This file is deleted while you configure the server.

F.2 PATHWORKS Advanced Server On-Disk Structure

Figure F–1, PATHWORKS Advanced Server On-Disk Structure Diagram, shows the PATHWORKS Advanced Server on-disk structure. Note that only a portion of the substructure is shown.
Figure F–1 PATHWORKS Advanced Server On-Disk Structure Diagram

pwrk$commonroot, pwrk$lmroot
  - lanman
  - -.accounts
  - -.datafiles
  - -.debug
  - -.domains
  - -.logs
  - -.repl
  - -.samsave
  - -.shares
  - -.upgrade
  - license
  - logs
  - params
  - perfdata
  - print
  - section
  - spool
  - temp

VM-0127A-AI
Table G–1, PATHWORKS Advanced Server Logical Names, describes the logical names that are created when you configure or start the PATHWORKS Advanced Server.

<table>
<thead>
<tr>
<th>Logical Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>NETBIOS$DEVICE</td>
<td>Used for the DECnet device. This logical name is not defined during installation; it is used to define network adapters under certain circumstances. (For more information, see Section 3.8, The Advanced Server Network Adapter.)</td>
</tr>
<tr>
<td>PWRK$ACME_MODULE</td>
<td>System-specific external authentication software (either VAX or Alpha).</td>
</tr>
<tr>
<td>PWRK$ACME_SERVER</td>
<td>On an OpenVMS Cluster member that is not running the Advanced Server software and does not have access to external authentication software by means of a shared cluster disk, defines OpenVMS Advanced Server cluster members designated to process external authentication requests for that member. This logical name is not defined during installation. (For more information, see Section 5.6.1, Setting Up External Authentication in OpenVMS Clusters.)</td>
</tr>
</tbody>
</table>

(continued on next page)
### Table G–1 (Cont.) PATHWORKS Advanced Server Logical Names

<table>
<thead>
<tr>
<th>Logical Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWRK$ACME_DEFAULT_DOMAIN</td>
<td>Defines the default domain for users using external authentication. This logical name is not defined during installation. (For more information, refer to the Compaq PATHWORKS for OpenVMS (Advanced Server) Server Administrator's Guide.)</td>
</tr>
<tr>
<td>PWRK$ADDON_LIBRARY</td>
<td>Location of file system shareable images</td>
</tr>
<tr>
<td>PWRK$COMMON</td>
<td>Top-level directory for PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>PWRK$COMMONROOT¹</td>
<td>Root of the PATHWORKS Advanced Server common directory tree</td>
</tr>
<tr>
<td>PWRK$CSSHR</td>
<td>Common services module</td>
</tr>
<tr>
<td>PWRK$KNBDAEMON_DEVICE</td>
<td>Used for the TCP/IP device, this logical name is not defined during installation; it is used to define network adapters under certain circumstances. (For more information, see Section 3.8, The Advanced Server Network Adapter.)</td>
</tr>
<tr>
<td>PWRK$LANMAN</td>
<td>PATHWORKS Advanced Server area</td>
</tr>
<tr>
<td>PWRK$LANMAN_STARTED</td>
<td>Indicates whether the PATHWORKS Advanced Server has been started.</td>
</tr>
<tr>
<td>PWRK/LICENSE</td>
<td>PATHWORKS Advanced Server license area</td>
</tr>
<tr>
<td>PWRK$LMDATAFILES</td>
<td>PATHWORKS Advanced Server data files area</td>
</tr>
<tr>
<td>PWRK$LMDEBUG</td>
<td>Area where trace files are written</td>
</tr>
<tr>
<td>PWRK$LMDOMAINS</td>
<td>PATHWORKS Advanced Server domain area</td>
</tr>
<tr>
<td>PWRK$LMLOGS</td>
<td>PATHWORKS Advanced Server log file area</td>
</tr>
<tr>
<td>PWRK$LMMSGFILES</td>
<td>Advanced Server message files</td>
</tr>
<tr>
<td>PWRK$LMROOT¹</td>
<td>Root of the PATHWORKS Advanced Server directory tree</td>
</tr>
<tr>
<td>PWRK$LMMSGFILES</td>
<td>Advanced Server message files</td>
</tr>
</tbody>
</table>

¹This logical name requires that you specify the directory with it.

(continued on next page)
Table G–1 (Cont.)  PATHWORKS Advanced Server Logical Names

<table>
<thead>
<tr>
<th>Logical Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWRK$LMUPGRADE</td>
<td>PATHWORKS Advanced Server upgrade area</td>
</tr>
<tr>
<td>PWRK$LMREPLEXPORT</td>
<td>Export replication files area</td>
</tr>
<tr>
<td>PWRK$LMREPLIMPORT</td>
<td>Import replication files area</td>
</tr>
<tr>
<td>PWRK$LSAMSSAVE</td>
<td>SAM database backup area</td>
</tr>
<tr>
<td>PWRK$LSAMSSAVEX</td>
<td>SAM database backup area</td>
</tr>
<tr>
<td>PWRK$LOADSTREAMS</td>
<td>Logical for LoadStreams image</td>
</tr>
<tr>
<td>PWRK$LOGS</td>
<td>Common log file area</td>
</tr>
<tr>
<td>PWRK$LR_DISABLE_CLIENT_PING</td>
<td>Defines whether the License Registrar checks for a client-based license or, instead, attempts immediately to assign a server-based license. (For more information, refer to the Compaq Advanced Server for OpenVMS Guide to Managing Advanced Server Licenses.)</td>
</tr>
<tr>
<td>PWRK$LR_LICENSE_REPORT_INTERVAL</td>
<td>Determines the interval at which reports about server-based licenses are generated in the License Registrar log file; by default, these reports are not generated.</td>
</tr>
<tr>
<td>PWRK$LR_LOG_SERVERBASED_ACTIVITY</td>
<td>Determines whether events related to server-based licensing are logged.</td>
</tr>
<tr>
<td>PWRK$LS_V6_ACCESS_UPGRADE</td>
<td>Included in the License Server startup file to allow upgrades of PATHWORKS V5 for OpenVMS (LAN Manager) client license requests.</td>
</tr>
<tr>
<td>PWRK$LS_V7_ACCESS_UPGRADE</td>
<td>Included in the License Server startup file to allow upgrades of PATHWORKS V5 for OpenVMS (LAN Manager) client license requests.</td>
</tr>
<tr>
<td>PWRK$NETBEUI_DEVICE</td>
<td>Used for the NetBEUI device, this logical name is not defined during installation; it is used to define network adapters under certain circumstances. (For more information, see Section 3.8, The Advanced Server Network Adapter.)</td>
</tr>
<tr>
<td>PWRK$PARAMS</td>
<td>Parameter area</td>
</tr>
</tbody>
</table>

(continued on next page)
<table>
<thead>
<tr>
<th>Logical Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>PWRK$PCFSDRIVER</td>
<td>PCFS driver</td>
</tr>
<tr>
<td>PWRK$PCIDRIVER</td>
<td>PCI driver</td>
</tr>
<tr>
<td>PWRK$PERFDATA</td>
<td>PATHWORKS monitor performance data directory</td>
</tr>
<tr>
<td>PWRK$PRINT</td>
<td>PATHWORKS Advanced Server printer database directory</td>
</tr>
<tr>
<td>PWRK$ROOT</td>
<td>Top-level directory for PATHWORKS Advanced Server</td>
</tr>
<tr>
<td>PWRK$SAMSAVE</td>
<td>SAMCHECK data area</td>
</tr>
<tr>
<td>PWRK$SAMSAVEX</td>
<td>SAMCHECK data area</td>
</tr>
<tr>
<td>PWRK$SECTION</td>
<td>Section file area</td>
</tr>
<tr>
<td>PWRK$SHARED/Images</td>
<td>Indicates whether shared images have been loaded.</td>
</tr>
<tr>
<td>PWRK$SPOOL</td>
<td>Spool area</td>
</tr>
<tr>
<td>PWRK$TEMPE</td>
<td>Temporary PATHWORKS Advanced Server files</td>
</tr>
<tr>
<td>PWRK$VERSION</td>
<td>File and print server version number</td>
</tr>
</tbody>
</table>
Index

A
ADMINISTER/CONFIGURATION
  See Configuration Manager
Administrator account
  local to member server, 3–9
password
    changing, 3–11
    for member server, 3–9
    joining a domain, 3–10
    setting, 3–9
    verifying, 3–10
    whether to provide during
    configuration, 3–10
Advanced Server
  cluster alias, 3–9
  configuring, 3–1
  data files, removing, 7–2
  files installed for, F–1
  installing, 2–2
  kit contents, 2–2
  logical names, G–1
  logical names, deassigning, 7–3
  NETBIOS image, removing, 7–2
  role, 3–8, 3–16
    changing, 3–18
    configuring, 3–16
  sample deinstallation procedure, 7–3
  sample installation and configuration,
  B–4
  starting, 5–3
  starting during configuration, 3–11, 3–14
  startup, 5–3
  stopping, 5–6
Advanced Server (cont’d)
  user accounts, removing, 7–2
Advanced Server disk
  changing the, 3–4
Advanced Server images
  checking status of, 1–17
Alerter service
  description of, 3–7
Automatic shutdown
  of file and print server, 5–7

B
BACKUP command, 1–14
Backup domain controller
  configuring transports, 3–4
  designating, 3–8, 3–16
BDC
  See Backup domain controller
Boot
  See Reboot

C
Checklist for installation and configuration,
  A–1
Client-based server administration tools,
  5–14
Client software
  LAN Manager, 1–7
  supported, 1–7
Clusters
  See OpenVMS Clusters
Computer name, 3-8
  SCSNODE parameter and, 1-12
Configuration Manager, 3-2, 3-4
Configuration procedure
  changing default settings, 3-14
  disk space required for complete server data files, 3-3
  disk space required for standalone License Server data files, 4-4
  for Advanced Server, 3-1
  for previously configured server, 3-24
  preparing for the Advanced Server, 3-3
  prerequisites, 3-3
  responding to prompts, 3-12, 4-3
  sample script for PATHWORKS Advanced Server, B-4
  sample script for standalone License Server, C-3
  starting, 3-11
  starting server during, 3-11, 3-14
  starting standalone License Server during, 4-4
Configuring
  backup domain controller transports, 3-4
  member server, 3-19
  member server transports, 3-4
  standalone License Server, 4-2
  wide area networks, 3-4

Data files
  removing, 7-2
Data loss
  preventing, 1-14
  restoring during reconfiguration, 3-24
DCPS
  See DECprint Supervisor (DCPS) software
DECnet
  starting, 1-16
  DECnet (Phase IV)
    checking status, 1-16
DECnet objects
  removing, 7-2
DECnet-Plus
  checking status, 1-16
  starting, 1-16
DECnet transport, 1-7
  running during configuration, 1-15
  status of, 1-15
DECprint Supervisor for OpenVMS (DCPS) software, 1-2
Deinstallation procedure
  description of, 7-2
  guidelines for, 7-1
  PATHWORKS Advanced Server, 7-3
  PATHWORKS for OpenVMS (NetWare), 7-4
Device name, 2-3
Disk space requirements, 1-14
  configuring complete server data files, 3-3
  configuring License Server, 4-4
  determining, 1-14
DNS
  configuring to use, 6-8
  setup, 6-8
Domain
  joining automatically, by PWRK$CONFIG, 3-10
  joining manually, by ADMINISTER ADD COMPUTER command, 3-10
Domain administrator account
  local to member server, 3-9
  password
    changing, 3-11
    for member server, 3-9
    joining a domain, 3-10
    verifying, 3-10
    whether to provide during configuration, 3-10
Domain name
  term defined, 3-8
Domain role
  changing, 3-8
  configuring, 3-16
ENQLM quota
minimum required, 1-13

External authentication
See also Pass-through authentication bypassing, 5-13
configuring client connections for, 5-13
on a system not running the Advanced Server, 5-10
requirement over DECnet-Plus, 5-12
server capacity, 5-13
setting up, 5-8
setting up OpenVMS Clusters, 5-10

External authentication software
installing, 2-19
sample installation script, E-1
separate installation, 2-4

File and print servers
NetWare, 1-2
starting, 5-3
stopping, 5-7

Files
created by installing PATHWORKS Advanced Server, F-1

GBLPAGES parameter
checking and defining, 1-10

GBLSECTIONS parameter
checking and defining, 1-11

Hardware requirements, 1-6, 1-9

Installation kit
contents of, 2-2

Installation procedure
checklist, A-1
description, 2-1
failure, another server running, 2-18
files created by, F-1
files installed, 2-17
information required for, 2-2
interrupting, 2-7
logical names created by, G-1
options, 2-2
prerequisites, 2-2
PWRK$STREAMSOS_Vn.EXE detected, 2-9
questions in, 2-7
responding to prompts, 2-5
sample script for external authentication software, E-1
sample script for PATHWORKS Advanced Server, B-1
sample script for standalone License Server, C-1
sample script for Upgrade utility, D-1
standalone License Server, 4-1
starting, 2-5

Installation requirements
disk space, 1-14
hardware, 1-6
in OpenVMS Clusters, 1-18
licensing, 1-3
memory, 1-7
software, 1-6, 1-9

Installation Verification Procedure
See IVP

Installed files
displaying, 2-17

IVP
during installation, 2-12
restriction when installing Upgrade utility only, D-1
running after installation, 5-2
IVP (cont’d)
running automatically, 2-16

K
Kit contents
checking, 1-9

L
License Server, 1-3, 3-7
configuration procedure, 4-1
installation procedure, 4-1
standalone installation, 2-4, 2-19
startup and shutdown, 4-3
Licensing
requirements, 1-3
LMHOSTS
configuring to use, 6-2
transport configuration, 3-6
LMHOSTS name resolution, 3-6
Load balancing, 3-5, 3-6, 6-2, 6-8
Logical names
created by PATHWORKS Advanced Server installation, G-1
deassigning, 7-3
startup procedure, 5-4

M
Management commands
shortcuts for, 5-7
Member server
advantage of, 3-19
configuring, 3-19
configuring transports, 3-4
designating, 3-8, 3-16
in OpenVMS Cluster, 3-4
local Administrator account password, 3-9
Memory requirements, 1-7

N
NETBIOS$ACCESS OpenVMS identifier removing, 7-2
NETBIOS$DEVICE, 3-25
NETBIOS image removing, 7-2
NetBIOS name resolution
using DNS, 6-8
using LMHOSTS, 6-2
using WINS, 6-7
NETBIOS process, 3-26
NetLogon service
fails to start, 3-9
function of, 3-8
NetWare server
See PATHWORKS for OpenVMS (NetWare)
Network adapter, 3-25
defining, 3-25
NETBIOS$DEVICE, 3-25
not found, 3-26
OpenVMS logicals, 3-25
PWRK$KNBDAEMON_DEVICE, 3-25
PWRK$NETBEUI_DEVICE, 3-25
Network interface card
See Network adapter
Network transport requirements, 1-7
NIC
See Network adapter

O
OpenVMS Clusters
checking configuration, 1-8
cluster alias, 3-9, 3-16
configuring nodes in, 3-2, 3-11
disk device for Advanced Server files, 3-4
enabling external authentication in, 5-8
installing server in, 1-18, 2-10, 3-11
LMHOSTS file, 3-6, 6-5
load balancing, 3-5, 3-6, 6-2
load balancing using DNS, 6-8
loading client license PAKs on, 4-2
OpenVMS Clusters (cont’d)
loading PAKs on, 1-4, 4-2
member servers, 3-4
running License Server on, 1-4, 4-2
sample installation on, C-1
sample standalone configuration procedure, C-3
server role in, 3-8
setting up external authentication, 5-10
starting server in, 3-11, 5-5
starting standalone License Server in, 4-6
WINS setup for, 6-8
OpenVMS reboot
delaying, 2-10
preventing if unnecessary, 2-10
when needed, 2-9, 2-10
Operating system requirements, 1-6
Optional software, 5-14

Parameters
affecting system, 3-2, 3-4
server configuration, 3-13
configuring, 3-14

Part listing
checking, 1-9

Pass-through authentication, 6-5
See also External authentication

Password
administrator account, 3-10
PATHWORKS cluster alias, 3-9
PATHWORKS for OpenVMS (NetWare), 1-2, 2-18
deinstallation procedure, 7-4
licenses, 4-2
sample deinstallation procedure, 7-5

PDC
See Primary domain controller
Postinstallation tasks, 1-5
Preinstallation tasks, 1-9, 2-2
checklist, 1-7

Primary domain controller
designating, 3-8, 3-16
PROCSECTCNT parameter
checking and defining, 1-11
Product identifier, 2-2

Protocols
See Transports
PWRK$ACME_SERVER logical, 5-11
PWRK$CONFIG.COM configuration procedure
See also Configuration procedure
description and usage, 3-1
PWRK$DEFINE_COMMANDS.COM, 5-7
PWRK$DEINSTALL procedure
See Deinstallation procedure
PWRK$DELETEACE.EXE, 7-2
PWRK$FIXACE.EXE, 7-2
PWRK$NBDAEMON process, 3-26
PWRK$NBDAEMON_DEVICE, 3-25
PWRK$NETBEUI_DEVICE, 3-25
PWRK$STARTUP.COM
See Startup procedure
PWRK$STREAMSOS_Vn.EXE
detected during installation, 2-9
PWVN$STARTUP.COM
description of, 5-4

Queue manager
checking, 1-14
running during configuration, 1-14
starting, 1-14

Reboot
and DECprint Supervisor for OpenVMS
installation, 1-2
and system changes, 1-10
delaying, 2-10
preventing if unnecessary, 2-10
when needed, 2-9, 2-10
Reconfiguration, 3–24
Release notes, 1–10, 2–3, 2–13
  in SYSSHELP: area, 1–5
  location after installation, 2–17
  printing, 1–5
Requirements
  hardware, 1–9

S
SCSNODE parameter
defining, 1–12
Security Account Manager (SAM) database files, 3–3
Security accounts database
  on primary domain controllers, 3–17
Server
  capacity for external authentication, 5–13
  on-disk structure, F–11
  starting during configuration, 3–14
Server administration tools
  installing, 5–14
Server announce comment, 3–9
Server configuration, 3–7
Server configuration parameters, 3–13
  affecting server configuration, 3–7
  affecting system environment, 3–2, 3–4
  configuring, 3–14
SHOW QUEUE/MANAGER command, 1–14
Shutdown procedure
  for file and print server, 5–7
Software requirements, 1–6, 1–9
Standalone License Server, 1–4, 4–2
  sample installation and configuration procedure, C–1
  starting during configuration, 4–4
  startup, 4–5
START/QUEUE/MANAGER command, 1–14
Starting
  Advanced Server, 5–3
  Advanced Server during configuration, 3–11
  DECnet, 1–16
PATHWORKS Advanced Server
  automatically, 5–5

Starting (cont’d)
PATHWORKS Advanced Server in
  OpenVMS Clusters, 5–5
PATHWORKS Advanced Server manually, 5–4
standalone License Server, 4–5
standalone License Server automatically, 4–5
standalone License Server during configuration, 4–4
standalone License Server in a cluster, 4–6
standalone License Server manually, 4–5
TCP/IP, 1–16

Startup
  Advanced Server, 5–3
  automatic, 5–5
  manual, 5–4
  procedure for file and print server, 5–3
  troubleshooting, 5–6
  using the SYMAN utility, 5–6
Stopping the server, 5–6
SYLOGIN.COM
  conditionalizing, 5–6
SYSSINGLE_SIGNON, 5–8, 5–11, 5–13
SYMAN utility
  using STARTUP, 5–6
SYSTEM account
  logging in to, 1–9
System backup, 1–14
System disk
  space needed for installation, 1–14
System parameters
  checking and defining, 1–10
System reboot
  delaying, 2–10
  preventing if unnecessary, 2–10
  when needed, 2–9, 2–10
System shutdown
  file and print server shutdown and, 5–7
System startup
  troubleshooting, 5–6
System startup file
  editing, 5–5
Task summary, A–1
TCP/IP, 1–7
  configuring the Advanced Server to support, 1–17
  in clusters, 1–18
  starting, 1–16
  status of, 1–16
TCP/IP cluster alias, 3–6, 3–9
TCP/IP cluster impersonator name, 3–6, 3–9
Timesource service
  description of, 3–7
Time zone
  checking setting, 1–15
Transports
  for LMHOSTS, 3–6
  for WINS, 3–5
  selecting, 3–4

Upgrade utility, 1–2, D–1
Upgrading PATHWORKS (LAN Manager), 2–19
User accounts
  removing, 7–2

VMSINSTAL
  See also Installation procedure
  description, 2–1
  starting, 2–5

Wide area domain, 6–1
Wide area networking
  providing, 3–4
Windows 2000
  domain environment, 3–17, 3–19
  mixed-mode domain, 3–17
  native-mode domain, 3–17

Windows NT server administration tools, 5–14
  installing, 5–14
WINS
  configuring to use, 6–7
  setup for OpenVMS Clusters, 6–8
  transport configuration, 3–5