DigitalNetworks

Network Access Software Installation Guide

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This book describes how to install the Network Access software.

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Preface

Purpose

This guide describes how to install the Network Access Software on a system that runs the Windows 95/98/2000/ME/XP, Windows NT, Windows 2003 Server, OpenVMS, True64 UNIX, or UNIX operating system. It describes:

- Installing Network Access Software distribution software onto the appropriate system.
- Configuring the system so that it can operate as a load host for the Network Access Software.
- Verifying the installation by downloading the software to the network access server and testing a number of representative access server commands.

Intended Audience

The audience for this guide is the system or network manager responsible for making network access server products available on their Ethernet(s). The system manager is responsible for the system that is to be established as a load host. The network manager is responsible for the local area network (LAN). Readers should be familiar with both Internet network management concepts and the load host's operating system.

Supported Platforms

The Network Access Software runs on Digital Network's access server products, including the DECserver 90M, DECserver 90M+, DECserver ConX^4, DECserver 716, DECserver 732 family, and the DECserver 900TM.

Although Digital Networks currently only supports the aforementioned hardware platforms, this software also runs on the retired DECserver 90TL, DECserver 900GM, DECserver 900MC, DECserver 700-08 and DECserver 700-16 products.

Conventions

This guide uses the following conventions:

- The generic term access server instead of using the specific hardware product name.
- All numbers are decimal unless otherwise noted.
- All Ethernet addresses are hexadecimal.

Typographical Conventions

In addition, this guide uses the following typographical conventions:

Convention	Description
special type	This special type indicates system output or user input.
bold	All commands, file names, and directories are in bold type.
lowercase	If a command appears in lowercase letters in a command format or an example, you must enter it in lowercase letters.
italic	Italic type in command syntax or examples indicates variables for which either you or the system supplies a value.
Ctrl/X	Hold down the Control key and simultaneously press the key specified by X. The access server displays this key combination as ^X.
#	The pound sign (#) is the Tru64 UNIX and UNIX superuser prompt.

Associated Documents

The following documents are available:

- *Network Access Software Management* guide
- *Network Access Software Command Reference* guide
- Access Server Manager online help

Chapter 1

Introduction

Overview

In This Chapter

This chapter describes the components in your access server product kit.

The following are the topics in this chapter:

- Product Components List
- Component Descriptions

Product Components List

Introduction

Your access server product kits contain:

- Hardware components consisting of:
  - — DECserver access server
  - — User documentation
- Network Access Software (DNAS) CD consisting of:
  - — Network Access Software
    - WWENG2: Load image for DECserver 7xx and DECserver 900 series of access servers
    - MNENG2: Load image for the DECserver 90M access server configured with >1MB Flash RAM

  - MNENG3: Load image for the DECserver 90M access server configured with >2MB Flash RAM
  - MNENG4: Load image for the DECserver 90M+ access server configured with >4MB Flash RAM.

— Network Access Software support files

— Access Server Manager, the access server management tool

- Digital Networks RADIUS Software (DRAS)

  — Installation guides

  — All software guides

Component Descriptions

Hardware Components

The access server unit is a network access server that you can use to connect asynchronous devices (terminals, printers, modems, and PCs) to an Ethernet local area network (LAN). You can also use your access server unit with a modem for remote access connections. Remote access allows remote PC, Macintosh, and workstation users to dial into a remote network access server and use all of a network's available resources.

Hardware Installation

Follow the instructions in the access server user documentation and the documentation that shipped with the network device that you are connecting to the access server.

Network Access Software (DNAS) CD

The Network Access Software CD contains the software you need to download the operational software to the access server and to configure the hardware. The PC-based kit includes the Access Server Loader and the Access Server Manager. These are PC-based, Graphical User Interface loading and management tools.

The DNAS CD also includes the Digital Networks RADIUS Server software. The software allows you to install and configure a RADIUS server for remote access authentication and authorization. The DNAS CD also includes all DNAS software manuals in Adobe™ Acrobat (.pdf) format.

Software Installation

If you have a PC available, install the software on the DNAS CD on your PC and configure the Access Server Loader so it can download the DNAS software to your access server. If you do not have a PC, use an OpenVMS, UNIX, or Tru64 UNIX system as a load host to download the software. Use the access server console commands to configure the unit. Refer to the *Network Access Software Command Reference Guide*, *Network Access Software Management Guide*, or the online help for more information about the console commands.

Chapter 2

Windows 95/98/2000/Me/XP/2003 Server and Windows NT Installation

Overview

In This Chapter

This chapter describes the procedures necessary to install the access server management software on a Windows 95/98/2000/Me/XP/2003 Server or Windows NT management station and configure the access server for remote access. The topics in this chapter are:

- Introduction
- Installation Requirements
- Step 1: Installing Management Software
- Step 2: Configuring the Access Server Loader
- Step 3: Installing the Access Server and Network Device
- Step 4: Configuring the Access Server for Remote Access
- Step 5: Preparing for Client Installation

Introduction

Access Server Configuration

The windows-based kit includes tools that allow you to download the DNAS software and configure the hardware. The following table describes when to use the Access Server Loader and the Access Server Manager software:

Use the Access Server Loader Software to:	**Use the Access Server Manager Software to:**
Install the Network Access Software on access servers.	Configure your access server unit for remote access.
Set Internet addresses and subnet masks for access servers.	Reboot an access server and set IP characteristics.

Installation and Configuration Process

To install and configure a remote access server, you need to:

Step	**Action**
1	Install the software on the Network Access Software CD on a PC that runs the Windows NT or Windows 95/98/2000/Me/XP/2003 Servr operating system. This is the PC management station.
2	Configure the Access Server Loader. The Access Server Loader is a BOOTP and TFTP server that allows you to download the DNAS software from the PC management station to the access server. Keep the Access Server Loader running continuously to ensure that the DNAS image downloads when an access server requires it.
3	Install the access server and network devices.
4	Configure the access server. See the DNAS documentation and your network device documentation for details about configuration tasks. You can find the documentation in the DOCS directory of the DNAS CD.
5	Collect and distribute information for remote access client installation. Typically, the remote user installs the client software.

Other Configuration Tasks

For all other configuration tasks, use the access server console commands. Refer to the DNAS documentation located in the DOCS directory of the DNAS CD.

Installation Requirements

PC Management Station Hardware Requirements

The PC management station is the PC you use to manage the access server. It requires the following hardware to support the PC-based management applications:

- An Intel 386 or greater processor.
- A minimum of 16 megabytes of random access memory (RAM). Additional memory improves performance.
- A CD-ROM drive.
- A minimum of 5 megabytes of available disk space.
- A network interface card (NIC).
- A network cable connected to the PC.

PC Management Station Software Requirements

You need Microsoft Windows 95/98/2000/Me/XP/2003 Server or Windows NT Version 3.51 or greater to install the Windows-based management software.

Step 1: Installing Management Software

Introduction

Use this step to install the software from the Network Access Software CD on your PC management station. After you complete this step, you can:

- Configure the Access Server Loader and activate the BOOTP and TFTP servers.
- Use the Access Server Manager to configure and manage an access server for remote access.

Load Hosts on Other Machines

If you plan to use a different type of load host to download the DNAS software to your access server (for example, OpenVMS, UNIX, or Tru64 UNIX load hosts), see the appropriate chapter in this installation guide.

Installing the Network Access Software

To install the Network Access Server software, do the following:

Step	Action
1	Insert the DNAS CD in your CD-ROM drive. The CD automatically mounts as an ISO 9660 volume.
2	Are you using the Windows NT operating system? • If no, go to step 3. • If yes, do the following: a. For **Intel** systems only: From the Program Manager or Start menu, run the following: X:\DNAS\WIN95NT\SETUP.EXE The letter X represents the drive letter of your CD-ROM drive. This launches the Access Server Setup program. a. For **Alpha** systems only: From the Windows Explorer, click the Fx!32 folder and then double click instlx86.exe. From the instlx86 installation dialog, run the following: **(This is unsupported)** X:\DNAS\WIN95NT\SETUP.EXE The letter X represents the drive letter of your CD-ROM drive. This launches the instlx86 Setup program. b. Click Next in the Welcome dialog box. c. Go to step 4.

Step	Action
3	Are you using the Windows 95/98/2000/Me/XP operating system? • If no, go to step 2. • If yes, do the following: a. Select Start and choose Control Panel from the Settings menu. b. Select Add/Remove Programs from the Control Panel. c. Click Install in the Add/Remove Programs Properties dialog box. d. Click Next in the Install Program From Floppy Disk or CD-ROM dialog box. e. Enter the letter of your CD-ROM drive followed by \DNAS\WIN95NT\SETUP in the Run Installation Program dialog box and click Finish. f. This launches the Setup Program. Click Next in the Welcome dialog box. g. Go to step 4.
4	Select the components you want to install from the Select Components dialog box and click Next. The default is to install all components.
5	Are you installing the Access Server Loader? • If no, go to the step 6. • If yes, do the following: a. Choose the target drive and directory in the Choose Destination Location dialog. Click Next to accept the displayed default or click Browse and enter a new destination and click Next. b. If running Windows NT, enter the name of the Program Folder where you want the icons installed, or click Next to accept the displayed default.

Step	Action
6	Are you installing the Access Server Manager? • If no, go to step 7. • If yes, do the following: a. Choose the target drive and directory in the Choose Destination Location dialog. Click Next to accept the displayed default or click Browse, enter a new destination, and click Next. b. Choose the target drive and directory for the data and backup files. Click Next to accept the displayed defaults or click Browse, enter a new destination, and click Next. c. If running Windows NT, enter the name of the Program Folder where you want the icons installed, or click Next to accept the displayed default. d. Click Yes to open the README.TXT file when prompted to do so.
7	When the installation procedure displays the Installation Complete dialog box, click OK. Restarting Windows: If files that the installation procedure needs to update are in use, the procedure displays the Restart Windows dialog box instead of the Installation Complete dialog box. Select the restart option and click OK.

Step 2: Configuring the Access Server Loader

Introduction

Use this step to configure the Access Server Loader and activate the BOOTP server. After you complete this step, you can use the Access Server Loader to:

- Load the Network Access Software (DNAS) image on your access server.
- Configure IP characteristics on an access server.

Before You Start

Before beginning this procedure, make sure you have:

- An Internet address for the access server
- The subnet mask for the access server
- The Ethernet address for the access server

Procedure

To configure the Access Server Loader, do the following:

Step	Action
1	Start the Access Server Loader on the PC management station. To learn about all of the Access Server Loader options, click Help on any of the application windows.
2	Select Setup. If a database file does not exist, the application asks if you want to create it. Click Yes.
3	Select the Clients tab and enter the following information for the access server: • Host name for the access server • Ethernet address • Internet address • Subnet mask • Gateway Internet address • Image file name for the access server. The default image for the DECserver 90M access server is MNENG3; The default image for the DECserver 90M+ and DECserver ConX^4 access server is MNENG4; WWENG2 is the default image for all other current access server models. • Click OK when finished.
4	Select the Files tab and enter the Request and Response file names. The Request File field contains the name of the file you expect to get from the access server in a BOOTP request. The Response File field contains the name of the factory load image you want to load on the access server using TFTP. Disabling Other Load Hosts: If other access server load hosts exist, you may want to disable them or load the new factory image on the other BOOTP loaders. This ensures that the access server receives the new factory image (WWENG2, MNENG3, or MNENG4) for the current device during a load operation.
5	Select the Options tab and check that the displayed PC management station's host name and IP address are correct.
6	Select the Logging tab and select any of the logging options. (This step is optional.)
7	Click on OK to close the Clients, Files, Options, or Logging dialog box and return to the Access Server Loader main window.
8	Start the BOOTP and TFTP servers by clicking on the server On/Off buttons. If you want the Access Server Loader to start automatically when you start Windows, copy the Access Server Loader icon into the Windows StartUp group. **Result**: Once activated, the Access Server Loader waits for access servers to send BOOTP and TFTP requests to it. When the Access Server Loader receives requests, it downloads the DNAS image file to the access server.

Step 3: Installing the Access Server and Network Device

Introduction

Use this step to:

- Download a new Network Access Server (DNAS) image to the access server.
- Configure IP characteristics on your access server.

Completing this step sets your access server configuration back to factory defaults. Your current access server configuration is lost.

Access Server Configuration Upgrade

If you want to upgrade your Network Access Software and preserve your current access server configuration, refer to Appendix C.

Flash RAM Upgrades

If your access server has Flash RAM, use the procedure in Appendix C to load the new DNAS image from ethernet and permanently save the new image in Flash RAM.

Procedure

To install the access server and network device, do the following:

Step	Action
1	Install the access server hardware. (Refer to the access server user documentation.)
2	Connect the Ethernet cable to the Ethernet connector on the access server.
3	Install the network device on the desired access server port using the appropriate cable. (Refer to the table in Step 4: Configuring the Access Server for Remote Access in this topic or the documentation that shipped with the device.)

Step	Action
4	Are you installing a modem? • If no, go to step 5. • If yes, and you did not preconfigure the modem for dial-in operations, reset it to factory defaults.
5	Turn on the power to the network device. Once loaded, the BOOTP requester in the access server activates and the BOOTP responder installed on the Access Server Loader or other load host responds with the Internet address for the access server. Initialization Time: See your access server user documentation for the time required for initialization.

Step 4: Configuring the Access Server for Remote Access

Introduction

Use this step to configure your access server for remote access. To configure the access server, you can do one (or both) of the following:

- Use the Access Server Manager to configure your access server and modems for remote access. The following sections describe how to configure an access server for remote access using this application.
- Use the access server console commands to configure your access server as a terminal server or for remote access use. After you complete this step, you can use your dial-up clients to make remote connections to the network.

For More Information

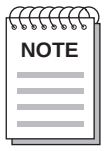
If using the Access Server Manager, see the application's How To... online help topics for step-by-step instructions for each step in the configuration process.

If using the access server command line interface, see the *Network Access Software Management* guide in the collection on the DOCS directory of the DNAS CD.

Before You Start

You need the following information:

- Access server type (DECserver 90M+, DECserver 7xx series, DECserver 900TM).
- Internet address currently assigned to the access server.
- For IPX, unique internal network number (optional).
- For IP remote client dial-in, unique Internet address for each port (optional).
- Modem manual for each modem that you want to configure. In some cases, the Access Server Manager prompts you to enter some modem commands to properly initialize the modem.
- New login and privilege passwords, if ports use login passwords for security (optional).
- If a port is to use Kerberos security, realm and domain name or Internet address of the Kerberos server.
- If a port is to use RADIUS security, realm, client secret, and domain name or Internet address of the RADIUS authentication and accounting servers.
- If a port is to use SecurID security, realm, encryption type, and domain name or Internet address of the SecurID ACE/server.



Telnet remote console must be enabled on the access server. This is the factory-default condition.

A: Start the Configuration Process

See the Access Server Manager's How To... online help topics to read step-by-step instructions for all of the configuration procedures. The application leads you through the configuration process by displaying the appropriate dialog boxes where you enter the required information.

The first step in the configuration process is to add your access server to the Browser view. Do the following:

Step	Action
1	Start the Access Server Manager on the PC management station.
2	Add the access server to the Browser. This step opens a new configuration data file for the access server.

Step	Action
3	Verify the access server's remote console connection using the Test Connection option on the Utilities tab.
4	Save the access server's Internet address and subnet mask in NVRAM (nonvolatile random access memory) using the Configuration tab. Click Apply to write your settings to the access server. See the online help for step-by-step instructions.

B: Configure Protocols

The next step is configuring the access server protocols. To configure the protocols:

Step	Action
1	Select Server Protocol IP and click Configure.
2	Configure the access server's Internet gateway address using the Gateway tab. Click Apply to execute the commands on the access server.
3	Configure the access server's Domain Name System using the DNS tab. Click Apply to execute the commands on the access server.
4	Configure other server protocols by selecting the appropriate server protocol option (Server IP, Server IPX, or Server AppleTalk). Depending on the protocol you select, you may need to select tabs to configure all protocol properties.
5	Click Apply to apply the server protocol settings on the access server.

C: Configure Ports

After configuring the access server protocols, configure the port properties. Do the following:

Step	Action
1	Configure the port that has the modem attached for PPP dial-up service by selecting the Port Dial-Up Service option. The application prompts you to specify modem data and network protocols for the port (IP, IPX, or AppleTalk). Initially, configure the port without security or dial-back properties. You configure these properties after you configure the port protocols. Use Your Modem Manual: If you add a modem that does not appear in the list of modems that the Access Server Manager displays, use your modem manual to find the modem commands required to configure the modem.
2	Click Apply to write the port settings to the access server.

Step	Action
3	Test the PPP dial-up service on the port you just configured by using a remote dial-up client, such as Microsoft's Windows 95/98/2000/Me/XP/2003 Server Dial-Up Networking.
4	Were you able to successfully connect to the access server? • If yes, go to the next step in the configuration process, D: Configure Dial-Back Services. • If no, refer to your modem manual and check that the modem commands are correct. Check that you configured the correct server protocols. Refer to the *Network Access Software Problem Solving* guide for more details.

D: Configure Dial-Back Services

Dial-back services enable the access server to terminate a user's session and dial the user with a specified telephone number. If you want to provide dial-back services to your users, do the following:

Step	Action
1	Configure dial-back services by selecting the Port Dialer Service option and enabling dial-back on a port configured for PPP dial-up service.
2	Click Write to apply the dial-back settings on the access server.
3	Test your dial-back configuration by using your dial-up client to make a network connection.
4	Did the access server respond properly to the remote access attempt? • If yes, go to the next step in the configuration process, E: Configure Security. • If no, see the Access Server Manager's online help or the DNAS documentation for information about configuring dial-back services.

E: Configure Security

The next step is configuring security for the access server. If you configure security settings on the access server, you may also need to have the appropriate security server on the network. Your security methods include:

- PAP or CHAP with the access server's login password (no network security server required)
- PAP or CHAP with the access server's local user accounts (no network security server required)
- PAP or CHAP with RADIUS security

- PAP with Kerberos V4 security
- PAP with SecurID security

The Access Server Manager's online help provides step-by-step instructions for configuring security. If you do not want to use any of these security methods, go to the next step.

To configure security on your access server:

Step	Action
1	Select the Port Dial-Up service option, enable port security, and select a security method.
2	Click Apply to apply the port security commands.
3	Configure security properties by selecting the Server Security option, selecting the type of security you want to configure, and entering the required information. References: Refer to the online help and the *Network Access Software Management* guide for more details about configuring security on the access server.
4	Click Apply to apply the security settings on the access server.
5	Test your security configuration by using your dial-up client to make a network connection. If using a remote server for authentication, make sure you install and configure the security server before you perform this test. Do the following: a. Log in using incorrect security information. If the access server rejects the access request, the test is successful. Go to the next test. b. Log in using correct security information. If the access server accepts the access request, the test is successful. Go to the next step.
6	Did the access server respond properly to the remote access attempts? • If yes, go to the next step in the configuration process, F: Save the Configuration File. • If no, reconfigure the security settings and check that your security server is properly installed, configured, and active.

F: Save the Configuration File

To save all of the configuration settings, select Save from the File menu.

Step 5: Preparing for Client Installation

Introduction

Use this step to prepare for client installation. If you are not configuring your access server for remote access, you can skip this step.

- If you plan to use the Windows 95/98/2000/Me/XP/2003 Server or Windows NT Dial-Up Networking client, see your Windows 95/98/2000/Me/XP/2003 Server or Windows NT documentation.
- If you plan to use a client other than the Windows 95/98/2000/Me/XP/2003 Server or Windows NT clients, refer to the documentation that shipped with it.

Information You Will Need

As the network administrator, you need to provide each user with one or more of the following:

- Remote access dial-up client. The DNAS software is compatible with most standard remote access clients, including the Windows 95/98/2000/Me/XP Dial-Up Networking client and the Windows NT dial-up client software.
- Access server's telephone number for dial-in.
- Port authentication login user name and password consistent with the method used during the access server configuration.
- Type of modem to specify during the installation.
- IRQ and I/O port settings for the modem.
- Type of LAN operating system to select.
- PPP IP address for port dial-in (optional).
- PC's IP address (optional).
- IP name server address and local domain name (optional).

Client Information

For additional information, refer to the client documentation.

Chapter 3

OpenVMS Installation

Overview

In This Chapter

This chapter describes how to install the Network Access Software on an OpenVMS system. This system is referred to as the load host.

This chapter contains the following topics:

- Preparing to Install the Software
- Installing the Software
- Updating the Access Server Database
- Downloading the Software Image
- Verifying the Image Download
- Completing the Installation
- Installing Software on Additional OpenVMS Hosts

Preparing to Install the Software

Procedure

Before you install the software on your load host, do the following:

Step	Action
1	If you have a new access server with Flash RAM, follow the procedure to update the access server database. (See the Updating the Access Server Database section in this chapter.)
2	Check your load host for the following: a. OpenVMS V5.0 or any subsequent release is installed. b. DECnet VAX Phase IV or DECnet/OSI is running. c. The Ethernet controller is on the same Ethernet as the access server.
3	Make sure that the CMKRNL and SYSPRV privileges are set. For DECnet/OSI systems, make sure you have WORLD privilege and the NET$MANAGE rights identifier.
4	Verify that the load host has enough available disk space. (Refer to the release notes for memory requirements.)
5	Back up the system before installing the software.
6	Unless you are installing from save sets copied from another load host, mount the software media on an appropriate device drive.
7	Write down the access server DECnet node address and DECnet node name (Phase IV only), which the network manager supplies. Write down the Ethernet hardware address, which the hardware installer supplies.
8	Make sure the access servers have a minimum of 4 megabytes (MB) of physical memory.

Installation Time Required

Installation requires approximately 5 minutes to complete.

LMF Not Required

License Management Facility (LMF) is not required.

Installing the Software

Introduction

To install the Network Access Software on the load host, use the VMSINSTAL utility. To stop the installation at any time, press Ctrl/Y.

Step 1: Start VMSINSTAL

Do the following:

Step	Action
1	Log in to the system manager account.
2	Mount the CD-ROM drive as a ISO 9660 volume using the following command syntax: $ MOUNT device-id DNAS0xx/MEDIA=CD The device-id variable is the name of the CD-ROM drive on your system.
3	Invoke VMSINSTAL using the following command syntax: $ @SYS$UPDATE:VMSINSTAL DNASnnn -_$ device-id:[DNAS.OpenVMS] OPTIONS N where nnn is the software version, for example, DNAS023. Substitute your device drive identifier for device-id. The procedure displays the following: OpenVMS VAX Software Product Installation Procedure Vx.x It is 9-FEBRUARY-1999 at 17:05. Enter a question mark (?) at any time for help.
4	If there are any active processes, VMSINSTAL lists them and asks if you want to continue. Enter YES to continue the installation. Example: %VMSINSTAL-W-ACTIVE, The following processes are still active: SERVER_006C DECW$SERVER_0 DECW$TE_00EB DECW$TE_00F2 * Do you want to continue anyway [NO]? YES

Step 2: Confirm System Backup and Device Mount

If you have backed up your system disk, press the Return key when the procedure prompts you to do so. If you mounted the software media on the appropriate device, enter YES.

Example

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

Please mount the first volume of the set on DDCU:

* Are you ready? YES

%MOUNT-I-MOUNTED, DNASxx mounted on _SYSTEM$DDCU:

Step 3: Install Kit Components

The procedure asks which components of the installation kit you want to install.

If:	Then:
You are installing a load host for a DECserver 7xx series or DECserver 900TMaccess server or updating a previously installed version of the NA7 kit	Enter YES when the procedure asks if you want to install Network Access Software DS7xx/DS900 images.
You are installing a load host for a DECserver 90M+, DECserver ConX^4 or updating a previously installed version of the NA9 kit	Enter YES when the procedure asks if you want to install Network Access Software DS90M+ or ConX^4 images.
You want to install support and informational files to help manage access servers and your load host more easily	Enter YES when the procedure asks if you want to install Network Access Software common support files. Enter NO if you plan to use your system only to downline load access servers and want to save disk space.

Example

```
The following products will be processed:

DNAS Vx.x

Beginning installation of DNAS Vx.x at 17:06

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

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You will now be asked if you wish to install certain
components of this kit. These components used to be
available under the product kit names NA7xxx and NA9xxx. If
you need help understanding which of these components to
install, entering a question mark ("?") in response to any
one of these questions will display additional information
on the contents of that component.

*Do you want to install the Network Access Software
DS7xx/DS900 images [YES]?

*Do you want to install the Network Access Software DS90M/
DS90M+/ConX4 images [YES]?

*Do you want to install the Network Access Software common
support files [YES]?
```

Step 4: Purge Files

The procedure asks if you want to purge files. Enter YES to purge the files replaced by this installation.

Example

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

Step 5: Run the IVP

The system asks if you want to run the Installation Verification Procedure (IVP). To run the IVP, which is recommended, press the Return key when prompted to do so.

The IVP verifies that the DECSERVER directory exists and all the files from the distribution kit are in the DECSERVER directory. After the procedure runs the IVP, VMSINSTAL is completed. See the Updating the Access Server Database section in this chapter.

Example

The IVP command procedure described in this example is for informational purposes.

You do not need to run it again at this time.

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

%DNAS-I-RELAX, No further questions will be asked

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

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

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

%VMSINSTAL-I-SYSDIR, This product creates system directory

[DECSERVER].

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

$ CREATE /DIRECTORY SYS$SPECIFIC:[DECSERVER]
```

System Display

The procedure continues and displays the following message. (If you do not receive this message, no modifications to the system startup file are necessary.)

```
Your installation is now complete. After exiting from
VMSINSTAL:

1. Add the following command to your system startup file,

SYS$STARTUP:SYSTARTUP_VMS.COM:

$@SYS$STARTUP:DSV$STARTUP

Installing the Software

This procedure includes the SYS$SYSROOT:[DECSERVER]
directory specification in all the MOM$LOAD or MOP$LOAD
logical name search list, and loads all access server
information into the volatile MOP database.

If you have other directories of MOP load images or dump
files, be sure to place the customized DEFINE/SYSTEM
commands for MOM$LOAD, MOP$LOAD, and/or MOP$DUMP ahead of
the execution of DSV$STARTUP.COM in the system startup file.

2. Configure the server into your host's database.

Execute the command procedure called DSV$CONFIGURE.COM. This
command procedure is in the SYS$COMMON:[DECSERVER]
directory. If you have already executed this procedure from
previous installations, you only need to configure
additional units.

All previously defined units will still be configured.

The Installation Verification Procedure (IVP) for the
DECserver can be found in SYS$TEST and may be run at any time
by executing the command procedure DNAS$IVP.COM

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

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Installation Verification Procedure for Network Access
Software for OpenVMS VX.X

Verifying Network Access Software images for DECserver 7xx
and DECserver 900s.....
```

```
Verifying Network Access Software images for DECserver 90Ms
....

Verifying Network Access Software common support files ....

Installation Verification Procedure succeeded.

$
```

Updating the Access Server Database

Introduction

DSV$CONFIGURE enables you to:

- Maintain system information about access servers.
- Modify the local MOP (Maintenance Operations Protocol) client configuration.
- Connect to the access server using the remote console port.

DSV$CONFIGURE supports both DECnet Phase IV and DECnet/OSI. DSV$CONFIGURE also supports data created by the procedure DSVCONFIG. When you install the current version of the Network Access Software, DSV$CONFIGURE automatically converts any DSVCONFIG data to the format of the current version.

Command Information

For more information about DSV$CONFIGURE commands, refer to the *Network Access Software Management Guide*.

Executing DSV$CONFIGURE

Enter the following command to start DSV$CONFIGURE:

```
$ @SYS$COMMON:[DECSERVER]DSV$CONFIGURE
```

Defining a Symbol

You may find it useful to define a symbol for this procedure in your LOGIN.COM file as follows:

```
$ DSV == "@SYS$COMMON:[DECSERVER]DSV$CONFIGURE"
```

Example

If you define the symbol DSV, the following example shows how to start the procedure. This example also shows how to use HELP to display a list of DSV$CONFIGURE commands.

```
$ DSV

% DSV-I-IDENT, executing DSV$CONFIGURE version X.X.X-nnn

-DSV-I-HELP, type ? any time for help

DSV> HELP

ADD - Add a server to the system

MODIFY - Modify an existing server's information

SET - Synonym for MODIFY

DELETE - Remove a comm. server from the system

LIST - Display information on one or all servers

SHOW - Synonym for LIST

CONNECT - Connect to a server via remote console

USE - Synonym for CONNECT

HELP - Displays summary of valid commands

EXIT - Exit this procedure
```

Adding New Access Servers

Do the following:

Step	Action
1	Enter one of the following commands: • $ @SYS$COMMON:[DECSERVER]DSV$CONFIGURE • $ DSV The system displays the following: %DSV-I-IDENT, executing DSV$CONFIGURE version X.X.X-nnn -DSV-I-HELP, type ? any time for help
2	Enter the ADD command using the following syntax: DSV> ADD [SERVER] [server-name] After you enter the ADD command, DSV$CONFIGURE displays a series of prompts. Some prompts display with defaults specified in square brackets. The values of the defaults are based on the running system.
3	DSV$CONFIGURE determines the load host service circuit-ID and displays this ID as the default. Press the Return key to select the default service circuit-ID. DECnet Errors: DSV$CONFIGURE adds the entry for the new access server to the NCP or MOP databases. If you get an error from DECnet while adding an access server, enter the DELETE command to remove the entry, correct the problem, then try again. The format of the DELETE command is identical to the ADD command. Example: The following example shows the ADD command on a DECnet/OSI system. In this example, a command not followed with a value indicates the selection of the default value. DSV> ADD SERVER -Server Name: DGD7xx -Ethernet Address: 08-00-2B-26-AE-32 -Server Type: DS7xx -Service Circuit: [SVA-0]: -Maintenance Password: [none]: %XBADCFE -Dump File [MOP$DUMP:DS7DGD7xx.DMP] -Load Image [MOP$LOAD:WWENG2.SYS]

Exiting DSV$CONFIGURE

To exit DSV$CONFIGURE, press Ctrl/Z or type EXIT.

Downloading the Software Image

Introduction

When you turn on power to the access server, it automatically requests downloading of the software image.

Procedure

Do the following to download software from your OpenVMS load host to your access server:

Step	Action
1	Do you have DECnet Phase IV software? • If no, go to the next step. • If yes, do the following: Enter the NCP CONNECT NODE node-name command to connect to the access server. Substitute your access server DECnet node name for node-name. If the access server manager defined a maintenance password, such as FEDCBA, enter the following command: $ MCR NCP Example: NCP> CONNECT NODE node-name SERVICE PASSWORD FEDCBA Console connected (press CTRL/D when finished)
2	If you have DECnet/OSI software, enter the following command: $ SET HOST/MOP=node-name/VERIFICATION=%XBADCFE % CCR-I-CONNEST, connection established to remote system 08-00-2B-26-AE-32 Note: For DECnet/OSI software, entering %XBADCFE equates to the DECnet Phase IV maintenance password FEDCBA.
3	Press the Return key to get the access server prompt. Enter the login password. ACCESS is the access server default login password. Example: # ACCESS (not echoed) Network Access SW Vn.n for DS716 (BLxx-xx) (c) Copyright 2004, Digital Networks - All Rights Reserved Please type HELP if you need assistance Downloading the Software Image
4	Enter your user name (any string of 1 to 16 characters). Example: Enter username> MANAGER

Step	Action
5	Enter the SET PRIVILEGED command and enter the password. SYSTEM is the default password. Example: Local> SET PRIVILEGED Password> SYSTEM (not echoed)
6	The Network Access Software is stored under the load image name of WWENG2, MNENG2, MNENG3, or MNENG4 depending on your hardware. WWENG2 is used for the DECserver 7xx or DECserver 900TM hardware. MNENG2 and MNENG3 are used for the DECserver 90M hardware. MNENG4 is used with DECserver 90M+. The software requires hardware with at least 4 MB of physical memory. To complete the upgrade, all access servers must be aware of the new load image on the access server. Enter the CHANGE SERVER SOFTWARE command. Example: Local> CHANGE SERVER SOFTWARE WWENG2
7	Determine if you have Flash RAM installed. Enter the following command: Local> SHOW MEMORY CONFIGURATION Example: This command displays information about memory installed on the access server and the functional status of Flash RAM. Dynamic RAM: 4 M bytes Non-Volatile RAM: 32 K bytes Flash RAM: Installed: Yes Total size: 2 M bytes Boot block: Valid Load Image: Name: WWENG2 Size: 1771348 bytes Version: Network Access SW Vn.n BLnn-xx Step Action Downloading the Software Image
8	Do you have Flash RAM? • If no, go to the next step. • If yes, do the following: Enter the following command to update your Flash RAM from the network. The qualifier, DELAY nn, causes the access server to wait nn minutes before initializing. This permits any existing users time to log out. You must also wait nn minutes before you can continue with the procedure. Local> INITIALIZE FROM ETHERNET UPDATE FLASHRAM [DELAY 10]
9	If you do not have Flash RAM, enter the following command to update your load image from the network: Local> INITIALIZE FROM ETHERNET [DELAY 10]

Verifying the Image Download

Procedure

To verify the image download, do the following:

Step	Action
1	Enter the NCP CONNECT NODE node-name command to connect to the access server. Substitute your access server DECnet node name for node-name. If the access server manager defined a maintenance password, such as FEDCBA, enter the following command: Example: $ MCR NCP NCP> CONNECT NODE node-name SERVICE PASSWORD FEDCBA Console connected (press CTRL/D when finished) DECnet/OSI Command: If you have DECnet/OSI, enter the following command: $ SET HOST/MOP=node-name/VERIFICATION= %XBADCFE % CCR-I-CONNEST, connection established to remote system 08-00-2B-26-AE-32 Note: For DECnet/OSI, entering %XBADCFE equates to the DECnet Phase IV maintenance password FEDCBA.
2	Press the Return key to get the access server prompt. Enter the login password. ACCESS is the access server default login password. Example: # ACCESS (not echoed) Network Access SW Vn.n for DS716 (BLxxx-xxx) (c) Copyright 2004, Digital Networks - All Rights Reserved Please type HELP if you need assistance
3	Read the identification message to ensure the latest version of the DECserver Network Access Software image was downloaded. Verifying the Image Download Next Step If this installation is a software upgrade, you can now reload all existing access servers.
4	Return to the NCP prompt by pressing Ctrl/D (Phase IV) or Ctrl/ \ (DECnet/OSI). DECnet Phase IV Example: Local> <Ctrl/D> DECnet/OSI Example: Local> <Ctrl/\>

Next Step

If this installation is a software upgrade, you can now reload all existing access servers

Completing the Installation

Procedure

To complete the installation, do the following:

Step	Action
1	Install the software kit on at least two load hosts (this is optional). Digital Networks recommends that you have one load host for every 10 access servers. See the section, Installing Software on Additional OpenVMS Hosts, for more information.
2	Inform the system or network manager that the installation is complete.
3	Give this guide and any other software documents to the person who will be managing the access server.

Problem Solving Information

If you have any problems installing the software, refer to the *Network Access Software Problem Solving Guide*.

Next Step

After you complete the installation, you are ready to configure the access server. You can use the Access Server Manager, a PC-based management tool, or the access server's command line interface.

If using the Access Server Manager, see the application's online help for instructions. If using the command line interface, see the *Network Access Software Management* and the *Network Access Software Command Reference Guides* for instructions.

Installing Software on Additional OpenVMS Hosts

Procedure

To install the access server distribution software onto an additional OpenVMS load host that is not a member of a VAXcluster system, do the following:

Step	Action
1	Invoke VMSINSTAL at the original load host using the following command syntax. Substitute your device drive identifier for device-id. $ @VMSINSTAL DNASnnn device-id:[DNAS.OpenVMS] OPTIONS G SYS$UPDATE: OPTIONS G: OPTIONS G stores the save sets in the SYS$UPDATE directory.
2	Copy the save sets from the original load host to the alternate load host SYS$UPDATE directory. The save sets are: DNASnnn .A, .B, .C, and .D where nnn is the version number of the software. For example, 020 stands for version 2.0.
3	Run VMSINSTAL on the alternate load host.

Chapter 4

Tru64 UNIX Installation

Overview

Introduction

This chapter describes how to install the Network Access Software on a Tru64 UNIX system. This system is referred to as the load host. This chapter also describes how to download the software to the access server.

In This Chapter

This chapter contains the following topics:

- Preparing to Run the Installation Procedure
- Installing the Software
- Installing Onto Alternate Load Hosts
- Removing the Software
- Configuring the BOOTP Load Mechanism
- Configuring the Load Host Database
- Downloading the Software Image
- Verifying the Download
- Completing the Installation

Preparing to Run the Installation Procedure

Pre-Installation Steps

Before running the installation procedure:

- Determine which systems are load hosts for the access server network. You must install the distribution software onto all load hosts.
- Check that each load host has free disk space for downloading the Network Access Software subsets specified in the following section. If you are installing multiple subsets, then accumulate the disk space requirements for each subset.
- Determine which partition contains /usr/tftpboot and /usr/opt and how much free disk space is available on that partition.

  # df/usr
- Back up the system disk.

Subset Disk Space

Refer to the online release notes to determine how much disk space you need for the subsets.

Time Required

Installation takes approximately 5 minutes.

Installing the Software

Introduction

Use the setld command to install the DNAS software. The setld command is an automated process that maintains a register of all product subsets installed on the Tru64 UNIX system. The setld command also provides an automated mechanism for the removal of a subset from the Tru64 UNIX system.

What setld Does

The setld command:

- Creates a directory called /usr/tftpboot on the load host, if it does not already exist.
- Creates a soft link from /tftpboot to /usr/tftpboot.
- Copies the files from the distribution media into their destination directories.
- Maintains a database of subsets installed on the Tru64 UNIX system.

Step 1: Start the Procedure

Do the following to start the installation procedure:

Step	Action
1	Log in to the system as superuser.
2	Place the distribution media on the appropriate device drive and mount the CD-ROM drive as an ISO 9660 volume with Rock Ridge Extensions. Use the following command syntax: # mount -rt cdfs -o noversion,rrip /dev /dir The /dev variable is the device name on your system. The /dir variable is a directory in which you are mounting the CD-ROM file system.
3	Enter the setld command: # setld -l /dir/DNAS/DUNIX C Compiler Required: The installation operation requires a C compiler. The Common Utilities subset is a prerequisite for the other two subsets.

Step 2: Answer Prompts

After you start the installation procedure, it prompts you to select the DNAS software subsets to install. Do the following:

Step	Action
1	Select the subsets to install. The procedure displays the following: You are installing the following optional subsets: Network Access SW DS7xx/DS900 Vx.x Network Access SW Utilities Vx.x Is this correct? (y/n): y
2	Confirm that the subsets are correct. The procedure displays the following: Checking file system space required to install selected subsets: File system space checked OK.

Subset Selection Example

The following example installs two of the DNAS software subsets:

```
The subsets listed below are optional:
```

There may be more optional subsets than can be presented on a single screen. If this is the case, you can choose subsets screen by screen or all at once on the last screen. All of the choices you make will be collected for your confirmation before any subsets are installed.

```
1) Network Access SW DS7xx/900TM Vx.x

2) Network Access SW 90M/90M+ Vx.x

3) Network Access SW Utilities Vx.x

Or you may choose one of the following options:

4) ALL of the above

5) CANCEL selections and redisplay menus

6) EXIT without installing any subsets

Enter your choices or press RETURN to redisplay menus.

Choices (for example, 1 2 4-6): 1 3
```

Step 3: Read Installation Messages

After checking available disk space, the procedure ensures that you are aware of the BOOTP requirements. The messages that the daemons are not currently running are advisory and do not necessarily mean that the daemons will not be run from the inetd

daemon when required. However, you should respond to the notices regarding the /etc/inetd.conf configuration file. (Refer to the Configuring the BOOTP Server section in this chapter.)

Example: Installation Messages

```
Beginning installation of Network Access SW Vx.x common
Utilities (NACBASEnnn) subset.

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The bootpd daemon is not now running.

The /etc/inetd.conf file is not configured to start the
bootpd daemon. Edit the /etc/inetd.conf file, uncomment or
insert the line containing bootpd, write out the file, and
restart inetd by issuing a 'kill -HUP'command to its process
id.

The tftpd daemon is not now running.

The /etc/inetd.conf file is not configured to start the
tftpd daemon. Edit the /etc/inetd.conf file, uncomment or
insert the line containing tftpd, write out the file, and
restart inetd by issuing a 'kill -HUP'command to its process
id
```

TFTP Boot Directory Messages

The procedure informs you if it is using an existing /tftpboot directory or creating a /usr/tftpboot directory and a symbolic link from /tftpboot to /usr/tftpboot.

```
Using existing /tftpboot directory.
```

Subset Installation Messages

The procedure then begins the installation of the specified load image subsets.

```
Network Access SW Utilities Vx.x

Copying from /mnt/NACnnn/kit (disk)

Verifying

Beginning installation of Network Access SW DS7xx/DS900
(NAC7IMAGEnnn) subset.

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```

```
Software Version: Network Access SW Vx.x

Do you wish to continue? [Yes]
```

Step 4: Complete Installation

After displaying installation messages, the procedure prompts you to confirm whether you want to continue. Type yes and press Return to complete the installation. The procedure installs and verifies the selected subsets.

```
Network Access SW DS7xx/DS900

Copying from /mnt/DNAS/DUNIX/NACnnn/kit (disk)

Verifying

Continuing installation of Network Access SW common
Utilities (NACBASEnnn) subset.

The addDECserver.c utility program will now be compiled and
moved to the /usr/bin directory.
```

The procedure informs you if it is using an existing /etc/bootptab file or creating a prototype /etc/bootptab file.

```
Using existing /etc/bootptab file.

The procedure then completes and updates the subset
database.

Network Access Software Utilities Vx.x (NABASEnnn) installed
successfully

Network Access SW DS7xx/DS900 Vx.x (NA7IMAGEnnn) installed
successfully

Read the release notes and check for any changes that affect
either this installation or the load host node database
configuration.

Installation of the software is complete.
```

Utilities Subset Required

The Network Access Software Utilities Version x.x subset is considered optional by setld, but is required to install either of the other two subsets. The DECserver 90M+ DECserver ConX[4] and DECserver 7xx/DECserver 900 subsets both have a specified dependency on the utilities subset and will not install unless the dependency is met.

Installing Onto Alternate Load Hosts

Introduction

Digital Networks recommends that you establish an alternate load host. If the original load host is unavailable for downloading the software image, any alternate load host can load the access server unit. In addition, alternate load hosts can receive upline dumps from access server units and can perform other maintenance functions.

Requirements

To serve as an alternate load host, a system must have the distribution software installed and it must have entries for one or more access servers in its node database.

Installing Onto Alternate Tru64 UNIX Systems

To install the distribution software onto an alternate Tru64 UNIX load host, repeat the installation procedure detailed in Installing the Software for each load host.

Removing the Software

Procedure

To remove the Network Access Software, do the following:

Step	Action
1	Log on to the system as superuser in the root directory.
2	Issue the setld -d command for each subset that you wish to remove. The setld -i command lists the names of all installed subsets. Examples: # setld -d NAC7IMAGEnnn Deleting Network Access SW DS7xx/DS900 Vx.x (NAC7IMAGEnnn). NAC7IMAGEnnn software deleted successfully. # setld -d NACBASEnnn Deleting Network Access SW Utilities Vx.x (NACBASEnnn). Do you wish to remove the /etc/DECservers database (used by the /etc/add_DECserver and related shell scripts)? [Yes] Yes NACBASEnnn software deleted successfully. #

The /etc/bootptab File

The procedure does not remove the /etc/bootptab file. You can delete it manually.

Configuring the BOOTP Load Mechanism

Tru64 UNIX Load Host Requirements

To be used as a load host for access server units, a Tru64 UNIX system must have BOOTP installed and configured on the operational system. A Tru64 UNIX system must be able to answer BOOTP requests for an automatic load from an access server unit defined in its node database.

Reference

For additional information on downloading, refer to the *Network Access Software Management Guide*.

Verifying BOOTP Server Operation

To verify that the BOOTP server is running, execute the netstat command. The UDP protocol should contain an entry for the BOOTP server and the TFTP server. If no such entry exists, then it is likely that the BOOTP server is not configured into the operational Tru64 UNIX system. The section, Configuring the BOOTP Server, contains the procedure necessary to configure the BOOTP server.

netstat Example

```
# netstat -a

Active Internet connections (including servers)

Proto Recv-Q Send-Q Local Address Foreign Address (state)

. . .

udp 0 0 *.bootps *.*

. . .

udp 0 0 *.tftp *.*

. . .
```

Configuring the BOOTP Server

The following steps are generic instructions necessary to configure a BOOTP server into an operational Tru64 UNIX system:

Step	Action
1	Ensure that both the TFTP and the BOOTP servers are enabled in the configuration file /etc/inetd.conf. These protocols are enabled when the following [uncommented] lines appear in the nominated file: tftp dgram udp wait root /usr/sbin/tftpd tftpd -r /tftpboot bootps dgram udp wait root /usr/sbin/bootpd bootpd Editing: Use a text editor to add these lines to the file or to remove the comment prefix (#) from the existing lines. Use Restricted TFTP: Digital Networks recommends that you use restricted TFTP for security reasons. For the rest of this document, examples are given under the assumption that restricted TFTP is used with a restricted path called /tftpboot. It is not required to call the TFTP restricted path /tftpboot.
2	Ensure that the BOOTP server listening port (bootps), the BOOTP client destination port (bootpc), and the TFTP server listening port (tftp) are configured into the configuration file /etc/services. Use a text editor to add these lines to the file or to remove the comment prefix (#) from the existing lines. bootps 67/udp # BOOTP server listening port bootpc 68/udp # BOOTP client destination port tftp 69/udp # TFTP listening port
3	Ensure that the UDP and the IP are configured in the /etc/protocols file: ip 0 IP # internet protocol, pseudo protocol number udp 17 UDP # user datagram protocol
4	The system must signal the inetd daemon to enable any modifications you make to any configuration file mentioned in this topic. You usually achieve this by entering the kill -HUP command for the inetd process. # ps aux | grep inetd | egrep -v grep root 219 0.0.0.0 3.16M OK ?? IW May 20 0:02:90 /usr/sbin/inetd # kill -HUP 219

Configuring the Load Host Database

Introduction

After installing the software and checking that a BOOTP server is configured, configure the load host database so that it complies with the access server load request, and the requirements for a Tru64 UNIX system to accept an access server dump request.

The database that the BOOTP daemon uses is located in the file /etc/bootptab. The manipulation of this database is common across Tru64 UNIX systems. For explicit information, refer to the online man pages for the BOOTP daemon. These man pages are supplied on the Tru64 UNIX system. You can access them using the following command:

man [-] bootpd

When configuration is complete, the Tru64 UNIX operating system acts as a load host for each access server client that has an entry in the node database.

Required Information

When you configure the load host database, provide the following information for each DECserver client:

- The DECserver platform type (DECserver 90M+ DECserver ConX^4, DECserver 7xx, and DECserver 900).
- The subnet mask for the Internet subnetwork. Obtain this parameter, which is usually common across all access server networks being served by the load host, from the network manager.
- The hardware Ethernet address of the access server client. Obtain the hardware Ethernet address of the access server client from the access server hardware.
- A name for the access server client. Obtain the name from the network manager who is responsible for ensuring the unique name in the Internet network.
- An Internet address for the access server client. Obtain the address from the network manager who is responsible for ensuring the unique Internet address in the Internet network.

Optionally, when you update the database, you can specify an alternate load image name and gateway address.

Configuring the Load Host Database

To configure the load host database, do the following:

Step	Action
1	To add an access server client to the database, enter the /etc/add_DECserver command. To get help, type a question mark (?). Example: # /etc/add_DECserver DECserver Node Name ? myds DECserver DS7xx or DS90M ? DS716 DECserver Load Image <WWENG2> ? WWENG2 DECserver Ethernet Address ? 08-00-2B-FC-01-76 DECserver Internet Address ? 192.12.79.6 DECserver Gateway Address ? 192.12.79.3 (optional) DECserver Subnet Mask ? 255.255.255.0 (optional) Alternative Method: You can also enter the /etc/add_DECserver command with the appropriate arguments on a single command line. The format is as follows: # /etc/add_DECserver node server_type load_image ethernet_address internet_address [gateway_address] [subnet_mask] DECserver Names: A DECserver name must be 1 to 16 alphanumeric characters; the first character must be alphabetic. Underscores are not permitted. DECserver names are case sensitive.
2	Check to see if a message displays the location of the dump file. For example: DECserver Dump File: /tftpboot/WW08002BFC0176 Do Not Delete Dump Files: Do not delete the DECserver dump file because it disables dumps. Also, do not delete any files in the /tftpboot directory ending with .dump.
3	Compare the file you have in /etc/bootptab with the sample file from the software distribution kit (/usr/opt/DECserver/bootptab). Do one of the following: • If the entries have compatible formats, enter the /etc/upd_DECserver command. • If you are running a BOOTP server with a file format different from the sample bootptab file, manually convert the database file to the format you are using. The database file to convert is in the /etc/DECservers file. The sample bootptab file describes the format of the entries.

Step	Action
4	After you add one or more access servers, enter the /etc/upd_DECserver command to put the access servers into the /etc/bootptab database. TFTP Server in Restricted Mode: If the TFTP server runs in restricted mode, do not use the home directory field in the /etc/bootptab file, unless the concatenation of the tftp restricted path, the home directory path, and the bootfile generate a valid (existing) file specification. TFTP Server in Nonrestricted Mode: If the TFTP server runs in a nonrestricted mode, the concatenation of the home directory path and the bootfile must generate a valid (existing) file specification. Bootfile Name: The bootfile name (absolute or relative) must not exceed 31 characters. However, the concatenation of the home directory and the bootfile can exceed 31 characters, with an upper limit of 128 characters, as defined in the bootstrap protocol.
5	To display the contents of the DECserver database, enter the following command: # /etc/list_DECserver myds: tc=DS.default ha=08002BFC0176 ip=192.12.79.6: bf=WWENG2 gw=192.12.79.3 sm=255.255.255.0
6	To remove an access server from the database, enter the following command: # /etc/rem_DECserver DECserver_name
7	After you remove one or more access servers, enter the /etc/upd_DECserver command to remove the access servers from the /etc/bootptab database.

Load Host Database File Structure

The structure of the load host database file (/etc/bootptab) constitutes one declaration per loadable client. The syntax for the declaration of each DECserver client is as follows:

```
client_name:ht=1:ha= hardware_address:ip= internet_address:
tc=DECserver:
```

- Client_name is a name of the DECserver as defined by the network manager.
- Hardware_address is obtained from the DECserver hardware.
- Internet_address is a unique address obtained from the network manager.

Example: BOOTP Load Host Database File

The following example of a BOOTP load host database file illustrates:

- An Internet subnetwork mask of 255.255.255.0
- A database entry for a DECserver 7xx unit whose name is DS700A, whose Ethernet address is 08-00-2B-A1-2D-18, and whose Internet address is 16.153.64.9
- A database entry for a DECserver 90M whose name is DS90B, whose Ethernet address is 08-00-2B-25-CD-A6, and whose Internet address is 16.153.64.32

```
#
# Generic DECserver BOOTP database definitions
#
DECserver:hd=/tftpboot:bf=null:sm=255.255.255.0:hn:vm=auto:bs=auto
#
# Specific DECserver BOOTP database definitions
#
DS700A:ht=1:ha=08002BA12D18:ip=16.153.64.9:tc=DECserver:
DS90B:ht=1:ha=08002B25CDA6:ip=16.153.64.32:tc=DECserver:
```

Configuring the Image Dumping Capability

Each individual access server client has the capability to dump its memory image for analysis by your authorized service representative. The access server invokes this capability under the following conditions:

- A privileged user enters the CRASH command.
- An unrecoverable system error occurs.
- Certain unrecoverable hardware faults occur.

Preventing Dump Operations

One of the following can prevent access server dump operations:

- A privileged access server user disabling the capability using the following command:

  ```
  Local> CHANGE SERVER DUMP DISABLED
  ```

- The absence of a load host to accept the dump image from the access server. The default condition is that the load host does not accept the dump image from an access server unit. You must configure the ability of the load host to accept a dump image of each access server unit on the network. A load host accepts a dump image from an access server unit under the following conditions:

  — A base dump image file is created on the load host.

  # cp /usr/tftpboot dump_image_filename

  — The permission mode for the dump image file provides global write access.

  # chmod a+w dump_image_filename

  The construction of the dump_image_filename is critical for the successful completion of the image dump process. The rules that ensure correct construction of the dump_image_filename are as follows:

  — The file must reside on a directory path to which the TFTP daemon has access. (Refer to Configuring the BOOTP Server.)

  — The file name must be in upper case.

  — The syntax for the file name is {WW } or {MN }_hardware_address.

  The file name prefix defines the type of access server to which the dump image refers. The hardware address is the same value used in Required Information.

Downloading the Software Image

Introduction

This procedure verifies that the load host is configured correctly so that the access server unit loads its software image from the load host using the BOOTP mechanism.

Procedure

If you want the access server unit to run the most recently installed software, reload the software from the load host by performing the following steps:

Step	Action
1	Enter the telnet internet-address command to connect to the Telnet remote console. Substitute the Internet address of the access server for nn.nn.nn.nn. peach# telnet nn.nn.nn.nn Trying nn.nn.nn.nn. Connected to nn.nn.nn.nn. Escape character is "^]".
2	Press the Return key to get the access server prompt, then enter the login password. ACCESS is the default login password. # ACCESS (not echoed) Network Access SW Vx.x for BLnn-nn (c) Copyright 2004, Digital Networks - All Rights Reserved Please type HELP if you need assistance.
3	Enter your user name (any string of 1 to 16 characters) and press Return. Enter username> swinstaller
4	Enter the SET PRIVILEGED command, enter the password and press Return. SYSTEM is the default password. Local> SET PRIVILEGED Password> SYSTEM (not echoed) Downloading the Software Image
5	Version 1.3 (and later) of the Network Access Software is stored under the load image name of WWENG2, MNENG2, MNENG3, or MNENG4 depending on your hardware. WWENG2 is used for the DECserver 7xx or DECserver 900 series hardware and MNENG2 and MNENG3 are used for the DECserver 90M hardware. MNENG4 is used for the DECserver 90M+ and DECserver ConX^4 hardware. Version 2.0 requires hardware with at least 4 MB of physical memory. To complete an upgrade, all access servers must be aware of the new load image. Enter the CHANGE SERVER SOFTWARE command. Local> CHANGE SERVER SOFTWARE WWENG2

Step	Action
6	To determine if you have Flash RAM installed, enter the following command: Local> SHOW MEMORY CONFIGURATION Dynamic RAM: 4 M bytes Non-Volatile RAM: 32 K bytes Flash RAM: Installed: Yes Total size: 2 M bytes Boot block: Valid Load image: Name: WWENG2 Size: 978148 bytes Version: Vx.x for DS716 BLnn-xx This command displays information about memory installed on the access server and the functional status of Flash RAM.
7	If you have Flash RAM, enter the following command to update your Flash RAM from the network. The qualifier, DELAY nn, causes the access server to wait nn minutes before initializing. This permits any existing users time to log out. You need to wait nn minutes before continuing. Local> INITIAL FROM ETHERNET UPDATE FLASHRAM DELAY 10
8	If you do not have Flash RAM, enter the following command to update your load image from the network: Local> INITIALIZE DELAY 10

Verifying the Download

Procedure

To verify the download, do the following:

Step	Action
1	Enter the telnet internet-address command to connect to the Telnet remote console. Substitute the internet address of the access server for nn.nn.nn.nn. peach# telnet nn.nn.nn.nn Trying nn.nn.nn.nn... Connected to nn.nn.nn.nn. Escape character is "^]".
2	Press the Return key to get the access server prompt, then enter the login password. ACCESS is the access server default login password. # ACCESS (not echoed) Network Access SW Vn.n for BLnn-nn (c) Copyright 2004, Digital Networks - All Rights Reserved Please type HELP if you need assistance
3	Read the identification message to ensure that the correct version of the Network Access Software was downloaded.
4	Enter the logout command to log out of the access server and press Return. Local> logout
5	Enter the logout command to log out of the system and press Return. peach> logout If this installation is a software upgrade, either you or the network manager can now reload all existing access servers.

Completing the Installation

Procedure

To complete your installation, do the following:

Step	Action
1	Install the software kit on at least two load hosts. This is recommended but not required.
2	Inform the system or network manager that the installation is complete.
3	Give this guide and other software documents to the person who manages the access server.
4	Save any MIB files that you want to keep for use with network management in the /usr/opt/DECserver directory.
5	Delete the kit files if you no longer need them.

Problem Solving Information

If you have any problems installing the software, refer to the *Network Access Software Problem Solving Guide*.

Next Step

After you complete the installation, you are ready to configure the access server. You can use the Access Server Manager, a PC-based management tool, or the access server's command line interface.

If using the Access Server Manager, see the application's online help for instructions. If using the command line interface, see the *Network Access Software Management* and the *Network Access Software Command Reference Guides* for instructions.

Chapter 5

UNIX Installation

Overview

Introduction

This chapter describes how to install the Network Access Software onto a generic, third-party UNIX system. This system is the load host.

In This Chapter

This chapter contains the following topics:

- Preparing for Installation
- Extracting the Installation Files from the Distribution Media
- Building Carnegie Mellon University (CMU) BOOTP
- Installing the Software on the Load Host
- Configuring the Load Host
- Downloading the Software Image
- Verifying the Software Download
- Completing the Installation

Note: DECserver 90M+ and DECserver ConX^4 family have onboard FLASH loaded with the DNAS software. Loading DNAS to DECserver 90M+ and DECserver ConX^4 should only be required to upgrade the onboard software. This procedure is provided in order to perform this upgrade.

Preparing for Installation

Pre-Installation Steps

Before you install the software on your load host, perform the following steps:

- Read the release notes.
- If you have a new access server unit with Flash RAM, follow the procedure to update the access server database. See the Configuring the Load Host section.
- Verify that you have superuser privileges.
- Back up the system disk before installing the software.

Time Required

Allow approximately 10 to 30 minutes to complete the installation procedure on your UNIX system.

Extracting the Installation Files from the Distribution Media

Procedure

Before you perform the installation procedure, you need to extract the appropriate files from the distribution media. Do the following:

Step	Action
1	Log in to the system as superuser.
2	Mount the CD-ROM drive as an ISO 9660 volume using a command syntax similar to the following (this example shows the mount command for systems that support Rock Ridge Extensions): # mount -rs hsfs -o noversion /dev /dir The /dev variable is the device name on your system. The /dir variable is a directory in which you are mounting the CD-ROM file system. Rock Ridge Extensions Support: Not all UNIX systems support the Rock Ridge Extensions. On Solaris systems, the system automatically mounts the CD-ROM. Consult your system's mount documentation for instructions.

Step	Action
3	Create a directory to contain the installation files using the following command syntax: # mkdir /temp-dir The /temp-dir variable is the name of the temporary file where you plan to dearchive the installation tar file.
4	Create a directory to contain the images that you downline load using the following command syntax: # mkdir /tftpboot or mkdir /usr/tftpboot The /tftpboot directory contains files that the BOOTP/TFTP services use to handle downline load requests from network clients. An access server uses BOOTP/TFTP to load its image from a UNIX host.
5	Change to the directory you created. For example: # cd /temp-dir Extracting the Installation Files from the Distribution Media
6	Extract the files from the media using one of the following command syntaxes: # tar -xvf /dir/DNAS/UNIX/UNIX.TAR or # tar -xvf /dir/DNAS/UNIX/unix.tar This preserves the case on systems without Rock Ridge Extensions. The /dir variable is a directory in which you mounted the CD-ROM file system.
7	Invoke the installation shell script by entering: # ./INSTALL or ./install You need to reference the shell script as ./INSTALL or ./install so that you do not invoke a system utility of the same name (as you might on Solaris systems). The installation operation requires a C compiler. If your system does not have a compiler, linker, and stripper, you can receive an error message similar to the following: ./.INSTALL: cc: not found ./.INSTALL: strip: not found chmod: WARNING: can’t access /bin/_addDECserver
8	Change the directory: # cd ..
9	Delete your temporary directory using the following command syntax: # rm -fr /temp-dir

Building Carnegie Mellon University (CMU) BOOTP

Introduction

Your system might not have BOOTP. If not, you can build BOOTP from the CMU BOOTP sources supplied with the software distribution media, as described in the section, Making a New Version of the CMU BOOTP.

If your system has BOOTP, refer to the section, Determining the Status of the BOOTP and TFTP Daemons to determine the status of the BOOTP daemon.

The CMU BOOTP sources supplied with the software distribution media are designed for BSD-style UNIX systems and are not compatible with non-BSD style UNIX systems. Some ULTRIX and Sun systems might have an older version of the CMU BOOTP program.

You should update that version with the new version supplied with the software distribution media because it uses the /etc/bootptab file format that the /etc/upd_DECserver command expects. The CMU BOOTP needs no arguments when invoked with inetd.conf.

Making a New Version of the CMU BOOTP

The software supplied with this kit is tailored to run with the CMU version of the /etc/bootptab file, which is the configuration file for the BOOTP daemon. A version of the BOOTP daemon is supplied with the software kit that is compatible with that specific style of the /etc/bootptab file. To make this version of bootpd, perform the following steps:

Step	Action
1	Change to the cmubootp directory as follows: # cd ./cmubootp
2	Depending on your platform, enter the following command: Platform Sun OS SCO UNIX IBM AIX HP UX OSF/1 All others Command # make -f Makefile.SUN # make -f Makefile.SCO # make -f Makefile.IBM # make -f Makefile.HP # make -f Makefile.OSF # make
3	Copy the new executable image to /etc as follows: # cp bootpd /etc/bootpd If you do not have an /etc/bootptab file, copy the bootptab file supplied with the kit to /etc. If you have a bootptab file supplied with the kit, merge this file with the existing one in /etc/bootptab.

Determining the Status of the BOOTP and TFTP Daemons

The following guidelines for the BOOTP and TFTP daemons are generic. If your UNIX reference pages conflict with these, follow the guidelines in the reference pages.

Step	Action
1	Determine if a group guest exists by entering one of the following commands: # grep guest /etc/group # cat /etc/group If a group guest does not exist, edit the /etc/group file and add the member TFTP to that group. For example: guest::32123:tftp
2	Edit the /etc/passwd file and add the user TFTP. The file password should be an asterisk (*). The default directory should be tftpboot, and the shell should be /bin/false. For example: tftp:*:32123:32123:tftp server:/tftpboot:/bin/false
3	Enter the grep command to see if the /etc/services file contains the following lines: bootp 67/udp # Bootstrap protocol server or bootps 67/udp # Bootstrap protocol server bootpc 68/udp # Bootstrap protocol client tftp 69/udp # ARPA Trivial File Protocol Transfer If these lines are missing, add them to the file.
4	Check the /etc/inetd.conf file for a line containing TFTP. Make sure this line is not preceded by a pound sign (#). For example: tftp dgram udp wait nobody /usr/etc/initftpd initftpd Restricted TFTP: Digital Networks recommends that you use restricted TFTP for security reasons. For the rest of this document, examples are given under the assumption that restricted TFTP is used, with a restricted path called /tftpboot. It is not required to call the TFTP restricted path /tftpboot. If you use the restricted TFTP server with a path, an example of a tftp entry is as follows: tftp dgram udp wait nobody /usr/etc/initftpd initftpd -r /tftpboot The -r option ensures that the boot file can be accessed only from the /tftpboot directory.
5	The inetd.conf file should also contain one of the following lines for BOOTP: bootp dgram udp wait root /etc/bootpd bootpd or bootps dgram udp wait root /etc/bootpd bootpd If this line is missing, add it to the inetd.conf file using bootp or bootps as determined by the entry in your /etc/services file. Refer to step 3.

Step	Action
6	If you have updated the inetd.conf file, restart inetd.
7	Enter the ps command to verify that inetd is running. For example: # ps -aux | grep inetd For more information on the inetd and the ps commands, consult your system-specific reference pages.

Installing the Software on the Load Host

Procedure

To install the Network Access Software on the load host, do the following (the install operation requires a C compiler):

Step	Action
1	Make sure you have a /tftpboot directory. If you do not have a /tftpboot directory, create one by entering one of the following commands: # mkdir /tftpboot # mkdir /usr/tftpboot Installing in Other Directories: If you want to install the software in a directory other than /tftpboot, you can create a symbolic link from /tftpboot to the actual location of the files. For example: # ln -s /usr/tftpboot /tftpboot Using tftp with restricted path: If you are running tftp with restricted path /tftpboot, enter the following commands. Note the period (.) in the second line. # cd /tftpboot # ln -s . tftpboot # cd / Not all UNIX systems support symbolic links.
2	After you have extracted the installation files from the distribution media and have ensured that the BOOTP and TFTP daemons are installed and running, enter the following command, which does not display any text: # ./INSTALL
3	Remove the temporary directory that you used when you dearchived the installation tar file. Use the following commands: # cd .. # rm -fr /temp-dir When you complete the installation procedure, you can add an access server to the database as described in the section, Configuring the Load Host.

Configuring the Load Host

Procedure

To configure the load host, do the following:

Step	Action
1	Update the DECserver database. You need the following information to add a DECserver access server: • Access server node name. The name must be 1 to 16 alphanumeric characters; the first character must be alphabetic. Underscores are not permitted. DECserver node names are case sensitive. • Access server type (DS700, DS90M+, ConX^4 or DS900TM). • Access server Ethernet address (printed on the back of the hardware). • Access server Internet address (assigned by the network administrator). Optionally, when you update the database, you can specify an alternate load image name, a gateway address, and subnet mask, if applicable. To add a DECserver to the database, enter the /etc/add_DECserver command. To get help, type a question mark (?). Add Example: # /etc/add_DECserver DECserver Node Name ? myds DECserver DS700 or DS90M ? DS90M DECserver Load Image <MNENG3> ? DECserver Ethernet Address ? 08-00-2B-FC-01-76 DECserver Internet Address ? 192.12.79.6 DECserver Gateway Address ? 192.12.79.3 (optional) DECserver Subnet Mask ? 255.255.255.0 (optional) Alternative Method: You can also enter the /etc/add_DECserver command with the appropriate arguments on a single command line. The format is as follows: /etc/add_DECserver node server_type load_image ethernet_address\ internet_address [gateway_address][subnet_mask]
2	Check to see if a message displays the location of a dump file. For example: DECserver Dump File: /tftpboot/MN08002BFC0176 Do not delete the previous file because it disables dumps. Also, do not delete any files in the /tftpboot directory ending in .dump, if present.
3	After you have added one or more access servers, enter the /etc/ upd_DECserver command to put the access servers into the /etc/bootptab database.

You can compare the file you have in /etc/bootptab with the sample file in the software distribution kit (./cmubootp/bootptab). If the format of the entries is compatible, enter the /etc/upd_DECserver command.

Non-CMU Files

If you are running a BOOTP server with a file format different from the CMU /etc/ bootptab file, you need to manually convert the database file to the format you are using. The database file to convert is in the /etc/DECservers file. The ./cmubootp/ bootptab file describes the format of the entries.

Restricted and Unrestricted Mode TFTP

If the TFTP server runs in restricted mode, do not use the home directory field in the /etc/bootptab file unless the concatenation of the TFTP restricted path, the home directory path, and the boot file generate a valid (existing) file specification.

If the TFTP server runs in a nonrestricted mode, then the concatenation of the home directory path and the boot file must generate a valid (existing) file specification. In either case, restricted or nonrestricted mode, the boot file name (absolute or relative) must not exceed 31 characters. However, the concatenation of the home directory and the boot file can exceed 31 characters, with an upper limit of 128 characters, as defined in the bootstrap protocol.

Displaying the DECserver Database

To display the contents of the DECserver database, enter the following command:

```
# /etc/list_DECserver

myds: tc=DS.default: ha=08002BFC0176: ip=1

2.12.79.6: bf=MNENG3: gw=192.12.79.3: sm=255.255.255.0
```

Removing Access Servers

To remove an access server from the database, do the following:

Step	Action
1	Enter the following command: # /etc/rem_DECserver DECserver_name
2	After you have removed one or more access servers, enter the /etc/ upd_DECserver command to remove the access servers from the /etc/bootptab database.

Downloading the Software Image

Introduction

When you turn on the power to the access server, downloading of the software image occurs automatically.

Accessing the Remote Console from the Load Host

If you want the access server to run the most recently installed software, reload the software from the load host by doing the following:

Step	Action
1	Enter the telnet internet-address command to connect to the Telnet remote console. Substitute the Internet address of the access server for nn.nn.nn.nn. peach# telnet nn.nn.nn.nn Trying nn.nn.nn.nn... Connected to nn.nn.nn.nn. Escape character is "^]".
2	Press the Return key to get the access server prompt, then enter the login password. ACCESS is the default login password. # ACCESS (not echoed) Network Access SW Vn.n for BLnn-nn (c) Copyright 2004 Digital Networks - All Rights Reserved Please type HELP if you need assistance
3	Enter your user name (any string of 1 through 16 characters). Enter username> swinstaller

Step	Action
4	Enter the SET PRIVILEGED command and enter the password. SYSTEM is the default password. Local> SET PRIVILEGED Password> SYSTEM (not echoed) Downloading the Software Image
5	To determine if you have Flash RAM installed, enter the following command: Local> SHOW MEMORY CONFIGURATION Dynamic RAM: 4 M bytes Non-Volatile RAM: 32 K bytes Flash RAM: Installed: Yes Total size: 2 M bytes Boot block: Valid Load image: Name: WWENG2 Size 1771348 bytes Version Vn.n for DS716 BLnn-xx
6	Do you have flash RAM? • If yes, enter the following command to update your flash RAM from the network. The qualifier, DELAY nn, causes the access server to wait nn minutes before initializing. This permits any existing users time to log out. You need to wait nn minutes before continuing. Local> INITIAL FROM ETHERNET UPDATE FLASHRAM [DELAY 10] • If no, enter the following command to update your load image from the network: Local> INITIALIZE FROM ETHERNET

Memory Requirements

Network Access Software Version 2.0 requires at least 4 MB of RAM in the access server hardware platform.

Verifying the Software Download

To verify the downline load, do the following:

Step	Action
1	Enter the telnet internet-address command to connect to the Telnet remote console. Substitute the Internet address of the access server for nn.nn.nn.nn. peach# telnet nn.nn.nn.nn Trying nn.nn.nn.nn... Connected to nn.nn.nn.nn. Escape character is "^]".
2	Press the Return key to get the access server prompt, then enter the login password. ACCESS is the access server default login password. # ACCESS (not echoed) Network Access SW Vn.n for BLxx-xx (c) Copyright 2004, Digital Networks - All Rights Reserved Please type HELP if you need assistance
3	Read the identification message to ensure that the correct version of the Network Access Software was downline loaded.
4	Enter the logout command to log out of the access server. Local> logout
5	Enter the logout command to log out of the system. peach> logout

If this installation is a software upgrade, either you or the network manager can now reload all existing access servers.

Completing the Installation

Steps

To complete the installation, do the following:

Step	Action
1	Optionally, you should install the software kit on at least two load hosts.
2	Inform the system or network manager that the installation is complete.
3	Give this guide and other software documents to the person who manages the access server.
4	Save any MIB files that you want to keep for use with network management in the ./mibs directory.
5	Delete the kit files if you no longer need them.

Problem Solving Information

If you have any problems installing the software, refer to the *Network Access Software Problem Solving Guide*.

Next Step

After you complete the installation, you are ready to configure the access server. You can use the Access Server Manager, a PC-based management tool, or the access server's command line interface.

If using the Access Server Manager, see the application's online help for instructions.

If using the command line interface, see the *Network Access Software Management* and the *Network Access Software Command Reference Guides* for instructions.

Appendix A

Distribution Files

Overview

Introduction

This appendix lists the Network Access Software distribution files for the DECserver 7xx, DECserver 90M+, DECserver ConX^4 and DECserver 900TM access servers.

In This Appendix

This appendix contains the following topics:

- OpenVMS Distribution Files
- Tru64 UNIX Distribution Files
- UNIX Distribution Files

About File Names

Most of the files listed are common to the above-listed products. If an asterisk (*) is in the file name, it means the number of your hardware module should be inserted (90, 900, or 7xx). An xx in a file name represents the current software version.

OpenVMS Distribution Files

OpenVMS Distribution File Listing

The following table lists the OpenVMS distribution files:

File Name	Description
SYS$TEST:DNAS$IVP.COM	Installation Verification Procedure.
The following files are located in SYS$COMMON:[DECSERVER]:	
DSV$CONFIGURE.COM	Configuration procedure.
NA*_0xx_CRASH_DISPLAY.COM	Crash dump identification procedure.
WWENG2.SYS	DECserver Network Access Software Version 2.n for DECserver 7xxs or DECserver 900s with at least 4 MB RAM.
MNENG2.SYS	DECserver Network Access Software Version 2.n for DECserver 90Ms configured with at least 4 MB RAM and 1MB Flash RAM.
MNENG3.SYS	DECserver Network Access Software Version 2.n for DECserver 90Ms configured with at least 4 MB RAM and >1MB Flash RAM.
MNENG4.SYS	DECserver Network Access Software Version 3.n for DECserver 90M+ and DECserver ConX^4 configured with 4 MB RAM and > 4 MB Flash RAM.
RFC-1158.TXT	SNMP MIB II user reference file.
RFC-1213.TXT SNMP	MIB II user reference file (obsoletes RFC1158.TXT).
RFC-1243.TXT	SNMP MIP: AppleTalk.
RFC-1243_ENROLL.TXT	Text for enrolling into an SNMP management station (edited version of RFC1243.TXT).
RFC-1284.TXT	SNMP MIB: Definitions of managed objects for Ethernet-like interfaces.
RFC-1284_ENROLL.TXT	Text for enrolling into an SNMP management station (edited version of RFC1284.TXT).
RFC-1316.TXT	SNMP MIB: Definitions of managed objects for character stream devices.

File Name	Description
RFC-1316_ENROLL.TXT	Text for enrolling into an SNMP management station (edited version of RFC1316.TXT).
RFC-1317.TXT	SNMP MIB: Definitions of managed objects for RS232-like hardware devices.
RFC-1317_ENROLL.TXT	Text for enrolling into an SNMP management station (edited version of RFC1317.TXT).
RFC-1471.TXT	SNMP MIB: The definitions of managed objects for the Link Control protocol of the Point-to-Point protocol.
RFC-1471_ENROLL.TXT	Text for enrolling into an SNMP management station (edited version of RFC1471.TXT).
RFC-1473	SNMP MIB: The definitions of managed objects for the IP Network Control Protocol of the Point-to-Point protocol.
RFC-1473_ENROLL	Text for enrolling into an SNMP management station (edited version of RFC1473.TXT).
IPX_MIB	MIB for IPX network stack. A Novell private MIB.
IPXCP_MIB	MIB for PPP IPXCP configuration. Digital Networks private MIB.
DEC-DECSERVER-ACCOUNTING-MIB.TXT	Accounting MIB for host systems.
DEC-DECSERVER-ACCOUNTING_MIB.HP	Accounting MIB for HP host systems.
DEC-DECSERVER-ACCOUNTING_MIP.SUN	Accounting MIB for Sun host systems.
HARVESTD1-3.TAZ	Compressed tar file for the harvestd utility.
RADIUS_SURVIVAL.TXT	Guide to the access server’s RADIUS client implementation.
SNMP_SURVIVAL.TXT	Guide to managing access servers through SNMP.

Tru64 UNIX Distribution Files

Tru64 UNIX Distribution Files

The following table lists the Tru64 UNIX distribution files:

File	Description
/tftpboot directory:	
WWENG2	Network Access Software Version 2.n for DECserver 7xx or DECserver 900s with at least 4MB RAM.
MNENG2	Network Access Software Version 2.n for DECserver 90Ms configured with at least 4 MB RAM and 1MB Flash RAM.
MNENG3	DECserver Network Access Software Version 2.n for DECserver 90Ms configured with at least 4 MB RAM and >1MB Flash RAM.
MNENG4	DECserver Network Access Software Version 3.n for DECserver 90M+ and DECserver ConX^4 configured with 8 MB RAM and >4 MB Flash RAM.
/usr/opt/DECserver directory:	
addDECserver.c	Source file for a program used in managing the access server database.
add_DECserver	Shell script to add an access server to the database.
bootptab	Sample /etc/bootptab file.
DEC-DECserver-accounting-mib.hp	DECserver accounting MIB
DEC-DECserver-accounting-mib.sun	DECserver accounting MIB
DEC-DECserver-accounting-mib.txt	DECserver accounting MIB
harvest.tar.z	harvestd build kit
nrsetup.tar.z	nrsetup build kit
list_DECserver Shell script to list the contents of the database.	
rem_DECserver	Shell script to remove an access server from the database.

File	Description
upd_DECserver	Shell script to update an /etc/bootptab file.
DECspool.c	Sample spooling program.
README	Additional notes that are not in this document.
rfc-1158.txt	SNMP MIB II user reference file.
rfc-1213.txt	SNMP MIB II user reference file (obsoletes rfc-1158.txt).
rfc-1243.txt	SNMP MIP: AppleTalk.
rfc-1243_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1243.txt).
rfc-1284.txt	SNMP MIB: Definitions of managed objects for Ethernet-like interfaces.
rfc-1284_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1284.txt).
rfc-1316.txt	SNMP MIB: Definitions of managed objects for character stream devices.
rfc-1316_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1316.txt).
rfc-1317.txt	SNMP MIB: Definitions of managed objects for RS232- like hardware devices.
rfc-1317_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1317.txt).
rfc-1471.txt	SNMP MIB: The definitions of managed objects for the Link Control protocol of the Point-to-Point protocol.
rfc-1471_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1471.txt).
rfc-1473	SNMP MIB: The definitions of managed objects for the IP Network Control Protocol of the Point-to-Point protocol.
rfc-1473_enroll.txt	Text for enrolling into an SNMP management station (edited version of rfc-1473.txt).
DEC-DECSERVER-ACCOUNTING-MIB.TXT	Accounting MIB for host systems.
DEC-DECSERVER-ACCOUNTING_MIB.HP	Accounting MIB for HP host systems.
DEC-DECSERVER-ACCOUNTING_MIP.SUN	Accounting MIB for Sun host systems.

File	Description
radius_survival.txt	Guide to the access server's RADIUS client implementation.
snmp_survival.txt	Guide to managing access servers through SNMP.
/usr/bin directory:	
_addDECserver	Stripped executable file used by /etc/add_DECserver
/etc directory:	
add_DECserver	Shell script to add an access server to the database.
bootptab	Sample /etc/bootptab file.
list_DECserver	Shell script to list the contents of the database.
upd_DECserver	Shell script to update an /etc/bootptab file.
DECservers	Database used by add_DECserver and upd_DECserver.

UNIX Distribution Files

Refer to the README file for information about UNIX distribution files.

Appendix B

Cabling and Hardware

Overview

Introduction

This appendix lists the recommended cabling hardware for connecting various network devices to your access server.

More Information

For further information, refer to the User's Guide included with your access server hardware.

Cables and Hardware

Cables and Hardware Table

The following table lists the hardware you need to connect different network devices to your access server:

To Connect:	To DECserver 90M+ DECserver 716, or DECserver 732, DECserver 900TM (32 port)	To DECserver 708
Terminal/printer with MMJ port	BN24H-xx cable	H8575-A adapter and BC16E-xx cable
Terminal/printer with DB25 male port	H8575-A adapter and BN24H-xx cable	BC17D-xx (10-wire) cable or BC22D-xx (6-wire) cable
Terminal/printer with DB9 male port	H8575-B adapter and BN24H-xx cable	H8575-A and H8571-J adapters and BC16E-xx cable
PC communication interface with DB9 male port	H8585-AA adapter and BN25G-xx cable	H8575-A and H8571-J adapters and BC16E-xx cable
Modem using RI-DCD-DSRS-DTRsignals (typically <9600 baud) with DB25 female port	H8585-AB adapter and BN25G-xx cable	BC22E-xx (10-wire) cable or BC22F-xx (25-wire) cable
Modem using CTS-DSR-RTS-DTR signals (typically =>9600 baud) with DB25 female port	H8585-AC adapter and BN25G-xx cable	BC22E-xx (10-wire) cable or BC22F-xx (25-wire) cable
Non-Digital Networks systems with DB25 male ports (reverse-LAT configuration)	N/A	BC22R-xx cable

Appendix C

Upgrading Access Server Software

Overview

Introduction

This appendix describes how to upgrade your access server (with or without Flash RAM) with the latest Network Access Software using the PC-based management tools. This procedure:

- Turns on power to the access server and loads the latest software upgrade while preserving your current access server configuration. This can also upgrade your Flash RAM.
- Assigns an Internet address to the access server if necessary.
- Prepares the access server's default Telnet remote console for connection.

In This Appendix

This appendix contains the following topic:

Upgrade Procedure

Procedure

Do the following to upgrade your access server:

Step	Action
1	Start the Access Server Loader utility on the PC management station.
2	Click on Setup and enter the host name, Ethernet address, Internet address, subnet mask, gateway Internet address, and image file name for the access server in the Clients dialog box. If the access server already has an Internet address assigned, you do not need to change it. If you decide to change the Internet address, enter the new IP address in the Clients dialog box and manually change the address on the access server before issuing the INIT command described in step 11.
3	Click on the Files tab and verify that one of the request file names (default is MNENG3, MNENG4, and WWENG2) corresponds to the request file name that the access server requests. The access server default request file names are MNENG3 for the DECserver 90M, MNENG4 for DECserver 90M+, WWENG2 for others. If the file names do not match, add an entry on the Files dialog box with a request file name that matches the file the access server requests.
4	Disable other network load hosts that could load the access server (this is optional). This ensures that the Access Server Loader loads the access server with the latest image. Alternatively, you may want to load the access server upgrade image on the other load hosts.
5	Start the Access Server Loader BOOTP and TFTP servers by clicking on the server On/Off buttons. When on, the button lights are green.
6	If necessary, install the modem(s) on the desired access server ports using the appropriate modem cable (see the documentation included with your modem).
7	If you did not preconfigure your modem for dial-in previously, reset it to factory defaults.
8	Turn on the power to the modem. If power to the the access server is off, turn on the power and wait for it to finish rebooting.
9	Connect to the server console by means of a directly attached terminal, MOP, or Telnet.

Step	Action
10	Make sure that the default Telnet remote console is enabled in the permanent database by issuing the following command: Local> PURGE TELNET LISTENER 23
11	To load the access server with the upgraded image, use one of the following commands: For an access server with Flash RAM Local>INIT FROM ETHERNET UPDATE FLASHRAM DELAY 0 For an access server without Flash RAM (or an access server with Flash RAM that you do not want to permanently upgrade) Local> INIT FROM ETHERNET DELAY 0 To continue installation and configuration, refer to Installation and Configuration Process in Chapter 2.