DEC Network Integration Server

Configuration and Management from MS–DOS PCs

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Preface

This manual explains how to:

- Install DECNIS software on an IBM®-compatible Personal Computer running MS–DOS® (PC).

- Configure the PC so it can load to DECNIS routers, and communicate with them on the network.

- Start and use the Digital Network Control Language (NCL) on the PC.

_____ **Note** _____

Note that this manual does not cover PCs running Windows NT™ or Windows 95®. The *clearVISN™ DECNIS Configurator User Guide* describes how to configure and manage a DECNIS from these hosts.

_____

Audience

This manual is intended for network managers. It assumes that you understand and have some experience of:

- MS–DOS PCs

- Local Area Networks (LANs)

- Wide Area Networks (WANs)

- The BOOTP/TFTP protocols

Associated Documentation

Product Documentation

- *DEC Network Integration Server Configuration and Loading*

- *DEC Network Integration Server Introduction and Glossary*

- *DEC Network Integration Server Management*

- *DEC Network Integration Server Problem Solving*

  This is only available on line as a text file.

- *DEC Network Integration Server Event Messages*

  This is only available on line in a text file.

- *DEC Network Integration Server Release Notes*

  This is only available on line in a text file.

- *Network Information*

  This supplies profile information about all the public Packet Switching Data Networks that Digital supports.

  This is only available on line in a text file.

Related Documentation

- *DEC Network Integration Server* clearVISN DECNIS Configurator User Guide

  This manual describes how to install and configure DECNIS software on a Windows NT or Windows 95 PC.

If you are running PATHWORKS™ on your PC, you may need to refer to the following:

- The PATHWORKS Version 5 or later manual set, in particular:

  - *PATHWORKS V5 for DOS and Windows DECnet Network Management Guide*

  - *PATHWORKS V5 for DOS and Windows Client Installation and Configuration Guide*

- *PATHWORKS for DOS DECnet Network Management Guide* from the PATHWORKS for DOS V4.1 manual set (only if you are using a PATHWORKS V4.1 system as a MOP load host)

Returning Comments About this Documentation

We would like to know what you think about the DECNIS documentation set and online help.

If you have any comments, or suggestions, please return them in any of the following ways:

- Send an electronic mail message to the Internet address books@reo.mts.dec.com

- Send an electronic mail message to the X.400 address S=IDC BOOKS; O=digital; OU1=reo; P=digital; A=CWMail; C=gb

- Send a fax to (+44)1734 206018

Conventions

The following conventions are used in this manual:

Return	Key names are shown enclosed to indicate that you press a key on the keyboard. Single letters are also denoted in this way.
Ctrl/*X*	This symbol indicates that you press the Ctrl key at the same time as you press another key. For example, Ctrl/C, Ctrl/Y, and so on.
Italics	This indicates variable information.
DECNIS	DEC Network Integration Server
PC	An IBM-compatible personal computer
Prompts	The following prompts precede commands that you enter:
	For MS–DOS: `C:\>`
	For NCL: `NCL>`
	For NCP: `NCP>`

1
Introduction

This manual describes how to configure, load and manage a
DECNIS from an MS–DOS PC.

Note

If you wish to configure, load and manage a DECNIS
from a Windows NT or Windows 95 PC using the
clearVISN DECNIS configurator, refer to the manual
clearVISN DECNIS Configurator User Guide.

To enable your MS–DOS PC to configure, load and manage the
DECNIS, you need to install two sets of software:

*   The DECROU software, which supplies the facilities needed
    to configure, load and manage your DECNIS from a PC.

*   The DECNIS software, which contains the facilities specific
    to your DECNIS.

1.1 Overview

There are three main tasks you need to carry out before you can
configure, load and manage your DECNIS from a PC:

*   Set up network facilities on the PC.

*   Configure the DECNIS.

*   Load the DECNIS.

1.1.1 Setting Up Network Facilities

In order to load and manage a DECNIS, the PC needs to be able to communicate with it on the network. There are two ways you can set up the PC to do this:

- Install PATHWORKS Version 5.

  Refer to the PATHWORKS Version 5 documentation set for details of installing and setting up PATHWORKS.

- Set up and run the Network Application Interface (NAI), supplied as part of the DECROU software.

  Refer to Chapter 3.

1.1.2 Configuring the DECNIS

To configure your DECNIS, you need to do the following:

1. Run the load-host configurator on the PC, and enter information needed to load your DECNIS.

2. Run the DECNIS text-based configurator on the PC, and enter information about your DECNIS; for example, addresses, protocol options, passwords.

3. Create a **master NCL script file**. The DECNIS text-based configurator will do this at your request when you finish entering information.

Definitions

The master NCL script file is a text file of NCL commands. NCL commands are the mechanism used to manage and monitor your DECNIS.

NCL (Network Control Language) is a utility that allows you to set, change and display the configuration parameters of systems on a network.

4. Create a **configuration load file**. The DECNIS text-based configurator will do this at your request, after it has created a master NCL script file.

Definitions

The configuration load file is the file actually loaded to the DECNIS. It can be either of the following:

- **CMIP file**. This is a binary version of the NCL script file. It is loaded together with the separate software image and any profile files.

- **Combined file**. This combines the software, CMIP file and profile files into one file. It is used if you configured the DECNIS to use nonvolatile memory (flash) loading.

Refer to the manual *DECNIS Configuration and Loading* for more details.

1.1.3 Loading the DECNIS

Once you have created a configuration load file, you can load your DECNIS.

- BOOTP/TFTP loading.

  PCs running the NAI or PATHWORKS Version 5 can use BOOTP/TFTP for loading.

  Definition **BOOTP/TFTP** is a set of protocols used for loading and dumping, defined in RFCs 783 and 951.

- MOP loading.

  Only PCs running PATHWORKS Version 5 can use MOP (Maintenance Operations Protocol) for loading.

  Definition **MOP** is a Digital-specific protocol used for loading and dumping.

  Note that you need to carry out extra steps to set up MOP loading; refer to Appendix C for details.

Part I

Installation and Configuration

Part I describes how to do the following:

- Set up a PC so it can load the DECNIS, and communicate with it on the network.

- Install and configure the DECNIS and DECNIS software on a PC.

It contains the following chapters:

- Chapter 2 describes how to install the DECNIS software.

- Chapter 3 describes how to set up the Network Applications Interface, which enables the PC to load the DECNIS, and to communicate with it on the network.

- Chapter 4 describes the Router Management menu.

- Chapter 5 describes how to use the load-host configurator.

- Chapter 6 describes how to start the DECNIS text-based configurator, and gives basic information on using it.

- Chapter 7 describes how to get online help when running the load-host and DECNIS configurators.

- Chapter 8 describes how to start, stop and monitor the BOOTP/TFTP server.

- Chapter 9 describes how to load your DECNIS from a PC.

2

Installing the Software

This chapter describes how to:

- Install the software to configure, load and manage your DECNIS from a PC.

- Update a previously configured DECNIS.

Table 2–1 lists information you need to check before you install the software.

Table 2–1   Prerequisite Information

Item	Value/Description
Prerequisite software	MS–DOS Version 5 (or later)
	If using PATHWORKS as the network operating system: PATHWORKS Version 5, with the following PATHWORKS services: DECnet and Utilities; TCP/IP and Utilities
Prerequisite hardware	80386-, 80486-, or Pentium®-based PC with at least 8 Mbytes of extended RAM, and a VGA monitor
	Supported Ethernet adaptor (see Section 3.8)
	DECNIS hardware unit
Memory required	At least 3 Mbytes of free extended memory

Table 2–1 (Cont.) Prerequisite Information

Item	Value/Description
Disk space required for installation	At least 20 Mbytes
Disk space required for dumping	Minimum: 12 Mbytes per DECNIS Maximum: 32 Mbytes per DECNIS

2.1 Installing the Software

You need to install two sets of software:

- The DECROU software, which supplies the facilities needed to configure, load and manage your DECNIS from a PC.

- The DECNIS software, which contains the facilities specific to your DECNIS.

2.1.1 Installation Requirements

Note the following:

- You must install the DECROU software before you install the DECNIS software.

- You must not run Windows® while you install the software, or configure, load or manage the DECNIS.

- If your PC is using MS–DOS/V for Japanese, you must change your screen mode to English before you install the software. There are two ways to do this:

  - Switch the PC screen mode to English. Enter the following at the command prompt:

    ```
    CHEV US
    ```

  - Restart MS–DOS/V with English mode. Enter the following at the command prompt:

    ```
    SWITCH
    ```

2.1.2 Overwriting Previous Versions

If there is a previous version of DECNIS software installed on your PC, it will be overwritten when you install the new version.

2.1.3 Installing the DECROU Software

Follow these steps:

1. Insert the first DECROU disk in the drive.

2. Enter the following:

   ```
   A:\install
   ```

3. Two copyright screens are displayed. Follow the instructions on the screen.

4. An information screen is displayed. Follow the instructions on the screen.

5. A list of available disk drives is displayed. Select the drive on which you want to install the software.

6. Now, enter the directory in which you want to install the software. The default shown on the screen is:

   ```
   \DECROU
   ```

7. Insert each disk in turn as requested. Press Return after you enter each new disk.

8. A message will appear saying that the installation is complete.

2.1.4 Installing the DECNIS Software

Repeat the steps in Section 2.1.3, using the DECNIS disks. In step 6, be sure to enter the same directory in which you installed the DECROU software.

2.2 Online Documentation

Refer to Table B–1 for a list of the online documents installed. You can edit and print the text files if you wish.

2.3 The DECNIS V4.0 Software Images

The DECNIS software image, SYSTEM, is installed in the directory, *install-directory*\COMMON\NISV40. SYSTEM is a double image; it contains two system images, with the following internal names:

Internal Name	Description
NIS_*version-number*	Only supports MPC–I features
NIS_*version-number*B	Supports MPC–II/III features

Console Supported with MPC–II/MPC–III Only

Note that the DECNIS console is supported only if either the MPC–II or the MPC–III management processor card is installed. Refer to Table 2–2 for the part numbers of the management processor cards.

2.3.1 Which Internal Image Is Loaded?

The DECNIS only loads one of the internal images into nonvolatile memory. Which internal image is loaded depends on which management processor card is installed, as shown in Table 2–2:

Table 2–2   Images and Management Processor Cards

This internal image is used...	If this card is installed...	With this part number...
NIS_*version-number*	MPC–I	DNSAN-AH
NIS_*version-number*B	MPC–II	DNSAN-BH or Upgrade to MPC–II: contact Digital Services
NIS_*version-number*B	MPC–III	DNSBN-AH (16 MB DRAM) or DNSBN-BH (32 MB DRAM) or Upgrade to MPC–III: contact Digital Services

2.3.2 Deleting an Internal Image from the Double Image

If you wish, you can delete one of the internal images from the double image. You may want to do this to save disk space on the load host, or loading time to the DECNIS.

To delete an image, you use the program MOD_FLSH. Section 2.3.3 and Section 2.3.4 describe how to do this. For a detailed description of MOD_FLSH, refer to the *DECNIS Management* manual.

2.3.3 Load Host or Part Nonvolatile Memory Loading

If you have specified load host loading, or part nonvolatile memory loading, follow these steps:

1. On the load host, run the program MOD_FLSH, naming SYSTEM as the file. For example, if the installation directory is called DECROU, you could enter the following:

   ```
   C:\DECROU> MOD_FLSH COMMON\NISV40\SYSTEM
   ```

   The MPC-II/III image (NIS_*version-number*B) is index 1; the MPC-I image (NIS_*version-number*) is index 2.

2. Enter the following command:

   ```
   delete n
   ```

   where *n* is the index number of the image.

2.3.4 Full Nonvolatile Memory Loading

If you have specified full nonvolatile (flash) memory loading, the configurator will create a combined file. If you wish, you can delete the unwanted internal image from the double image, before you run the configurator, by following the steps in Section 2.3.3. Alternatively you can delete the internal image from the combined file.

To delete an internal image from the combined file, follow these steps:

1. When you have configured your DECNIS, create a combined file for loading. Refer to the manual *DECNIS Configuration and Loading* for details.

2. On the load host, run the program MOD_FLSH, giving the name of the combined file. For example, if the installation directory is called DECROU, you could enter the following:

   ```
   C:\DECROU> MOD_FLSH CLIENTS\client-name\SYSTEM
   ```

   where *client-name* is the load client name of the DECNIS.

3. Follow steps 2 and 3 in Section 2.3.3.

2.4 What to Do Next

The following table shows the remaining tasks you need to carry out in order to configure and load the DECNIS software.

Step	Task	Refer to...
1.	If required, set up the Network Applications Interface (NAI). Do not do this if you will run PATHWORKS V5	Chapter 3
2.	Call up the Router Management menu	Chapter 4
3.	Run the load-host configurator	Chapter 5
4.	Run the DECNIS text-based configurator	Chapter 6 and Chapter 7
5.	If using BOOTP/TFTP for loading, start the BOOTP/TFTP server	Chapter 8
6.	If using MOP for loading, supply MOP information and start MOP	Appendix C
7.	Load the DECNIS	Chapter 9
8.	Assign a name to the DECNIS	Section 9.3.1

Directory Used for Commands

This manual instructs you to use the installation directory as the current directory when entering commands. As an alternative, you can do either of the following:

- Add the installation directory to a PATH command in AUTOEXEC.BAT. This makes it more convenient to enter commands.

- Use the full directory specification.

Reminder   If you modify AUTOEXEC.BAT or CONFIG.SYS, you must reboot the PC for your changes to take effect.

2.4.1 Reporting Problems

For instructions on reporting problems to Digital, refer to the online manual *DECNIS Problem Solving*. Refer to Table B–1 for a list of the problem solving manual text files.

2.5 Updating a Configuration

If you have previously installed and configured DECROU and DECNIS software on your PC, you must update your configuration when you install a new version of the software. This section describes how to do this.

2.5.1 Updating the NAI

If you are using the NAI, you must rerun the NETSET software each time you install a new version of the DECROU software. Refer to Chapter 3 for details.

2.5.2 Updating Your Configuration

When you install a new version of the DECNIS software, you must update your DECNIS configuration. You must do this even if you do not want to change your configuration.

> **Procedure**

To update your configuration, follow these steps:

1. Run the automatic Update procedure, as described in Section 10.4.1 to Section 10.4.4.

2. Start the DECNIS text-based configurator, as described in Chapter 6.

3. Select `Modify an existing configuration` from the DECNIS text-based configurator Main Menu.

4. Select the DECNIS that you are updating from the list of load client names displayed.

5. The Sections Menu is now displayed. Select `NCL Script`. You will go to the `Create NCL Script` section.

6. Select `Create an NCL Script`. This creates a master NCL script file that is valid for the new version of the DECNIS software.

7. Create a new load file: either a CMIP file or a combined file, depending on what is displayed on the menu.

8. Repeat steps 2 to 7 for each DECNIS that will use the new version of the software.

9. Reload your DECNIS systems, as described in Chapter 9.

3

Setting Up the Network Application Interface

This chapter describes how to set up the Network Application Interface (NAI).

3.1 What Is the NAI?

The NAI is software that provides DECnet™ Phase IV, TCP /IP and BOOTP/TFTP capabilities on an MS–DOS PC. The NAI enables the PC to load software to the DECNIS, and to communicate with the DECNIS on the network.

3.2 Who Should Set Up the NAI?

If your PC is not running PATHWORKS Version 5, you must set up the NAI.

3.3 Before You Start

You cannot run the NAI if your PC is running any other network software, such as PATHWORKS. If you have another network system installed, remove it from memory. Refer to Section 3.9 for more information.

3.4 Setting Up the NAI

To set up the NAI, follow these steps:

Procedure

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NETSET
   ```

3. The following screen is displayed. Enter information in the fields. If you ran NETSET previously, the information already entered is displayed; you can change it if you wish.

   ```
                            DECROU NAI Setup

     Ctrl-Enter to accept completed form.
     Enter or TAB to cycle through fields.
     ESC to quit.

     Node Name:
     Node IP Address:
     Node IP Mask:
     Node DECnet Address:
     Datalink Driver Name:

     Is a Gateway to be used (Y/N):
     Gateway IP Address:
   ```

   You can use the up and down arrow keys to move between fields once they have been completed.

Table 3–1 explains the information you enter.

Table 3–1   NETSET Information

PC Information	Notes
Node Name	Node name of the PC. Maximum 6 characters. The name is used for both DECnet and TCP/IP.
Node IP Address	Internet protocol (IP) address for the PC.
Node IP mask	Subnet mask for the IP address.

(continued on next page)

Table 3–1 (Cont.)   NETSET Information

PC Information	Notes
Node DECnet address	DECnet address of the PC.
Datalink Driver Name	The name of a subdirectory of C:\ *install-directory*\ NET\ DRIVERS. For example, DEPCA™. See Section 3.8 for details.
Is a Gateway to be used?	Enter Y if there is an IP gateway on the LAN to which the PC is connected.
Gateway IP Address	IP Address of the IP gateway. If you entered N for the previous question, just press Enter. Do not enter an address.

Note
   You must rerun NETSET each time you install a new version of the DECROU software.

3.5 Starting the Network

Once you have entered the NETSET information, start the network. Follow these steps:

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NET\STARTNET
   ```

Problems when Starting the Network
If you enter STARTNET, and the network fails to start, you will need to reboot your PC.

3.6 Starting the NAI Automatically

To set up the NAI to start automatically, follow these steps:

Procedure
1. Set up the NAI, as described in Section 3.4.

2. Add the following line to your AUTOEXEC.BAT file:

   ```
   call C:\install-directory\NET\STARTNET.BAT
   ```

   where *install-directory* is the installation directory.

3.7 Stopping the NAI

To stop the NAI and remove it from memory, enter the following at the command prompt:

```
STOPNET
```

You will be asked to confirm that you want to stop the NAI.

<table>
<tr><td>Note</td><td>If the BOOTP/TFTP server is running, you must stop it before you stop the NAI. See Section 8.8 for details.</td></tr>
</table>

3.8 Ethernet Drivers

This section contains information about Ethernet controllers and drivers that you can use on your PC.

3.8.1 Ethernet Drivers Provided

The DECROU product provides a number of Ethernet drivers. These drivers have been tested by Digital, and are known to work with the DECROU software.

Each driver is located in a subdirectory of the following directory:

C:\ *install-directory* \ NET \ DRIVERS

where *install-directory* is the installation directory.

Table 3–2 shows the Ethernet drivers provided.

Table 3–2 Ethernet Drivers Provided

Driver File	Subdirectory	Ethernet Controller
DEPCA.DOS	DEPCA	DEPCA family of Ethernet adaptors
DEPEA.DOS	DEPEA	DEPEA Personal Ethernet adaptor
EWRK3.DOS	EWRK3	EtherWORKS™ and EtherWORKS 3 adaptors

Contents of Driver Subdirectories

Each driver subdirectory contains:

- The driver file
- The driver's PROTOCOL.INI file

3.8.2 Support for Other NDIS Drivers

In addition to the Ethernet controllers and drivers listed in Table 3–2, other Ethernet controllers that have their own NDIS drivers may work with the DECROU software. However, such drivers have not been tested by Digital.

3.8.3 Installing NDIS Drivers

The Ethernet drivers in Table 3–2 are automatically installed by the installation procedure.

If you wish to try using another NDIS driver, you need to install it yourself. To do this, follow these steps:

Procedure

1. Create a new subdirectory of C:\ *install-directory*\NET\DRIVERS, with the same name as the Ethernet driver. For example, if the installation directory is C:\DECROU, and the name of the driver is ELNKPL, create the directory:

   C:\DECROU\NET\DRIVERS\ELNKPL

2. Move the driver file and the driver's PROTOCOL.INI file to this subdirectory.

Requirements

• The name of the driver file must have the following format:

  driver-name.DOS

  For example, the name of the driver file for ELNKPL would be:

  C:\DECROU\NET\DRIVERS\ELNKPL\ELNKPL.DOS

3.8.4 Master PROTOCOL.INI File

NETSET automatically incorporates the driver's PROTOCOL.INI file into a master PROTOCOL.INI file, provided that either of the following are true:

• You are using one of the installed drivers.

• You are using a third party driver, and have followed the steps in Section 3.8.3.

The master PROTOCOL.INI file is held in the following directory:

C:\ *install-directory*\NET

where *install-directory* is the installation directory.

| **Note** | If your Ethernet adaptor settings are nonstandard, note the following: |

- Be sure to alter the settings in the driver's PROTOCOL.INI file before you run NETSET. This ensures that they will always be correct in the master PROTOCOL.INI file.

- If for some reason you change settings in the master PROTOCOL.INI file, rather than the driver PROTOCOL.INI file, the changed settings will be lost the next time you run NETSET.

3.9 Removing Network Systems

You cannot run another network system while you are running the NAI. For example, if you choose to run the NAI, you cannot run PATHWORKS.

3.9.1 Removing PATHWORKS Version 4

To remove PATHWORKS Version 4, follow these steps:

1. Remove any PATHWORKS entries from CONFIG.SYS and AUTOEXEC.BAT.

2. Reboot the PC.

3.9.2 Removing PATHWORKS Version 5

If the PC is running PATHWORKS Version 5, but you wish to use the NAI instead, follow these steps:

1. Enter the following at the command prompt:

```
STOPNET
```

2. Remove the DECnet environment variable, by entering the following command at the prompt:

```
SET DECNET=
```

If you do not enter the command to remove the DECnet environment variable, you will see the following message when you try to run the NAI:

```
ERROR : Network running (do stopnet first)
```

4

The Router Management Menu

This chapter describes the Router Management menu. You use the Router Management menu to select the applications you need to configure, manage and control your DECNIS.

4.1 Calling Up the Menu

To call up the Router Management menu, follow these steps:

Procedure
1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. If your PC has a color monitor, enter the following at the command prompt:

   ```
   DECROU
   ```

3. If your PC does not have a color monitor, enter the following at the command prompt:

   ```
   DECROU/BW
   ```

You will see the Router Management menu.

4.2 Router Management Menu Options

On the Router Management menu, any options that have not been installed are shown dimmed. The table explains the menu options.

Option	Explanation	Refer to...
NCL	Starts the Network Control Language (NCL) management tool	Chapter 11
BOOTP	Starts the BOOTP/TFTP server	Chapter 8
MOP	Starts the NAI MOP server, only used to load WANrouter 90/250 routers	WANrouter 90/250 series manual set
DECNIS Host	Starts the DECNIS load-host configurator	Chapter 5
DECNIS Config	Starts the DECNIS configurator	Chapter 6
WR90/250 Host	Starts the WANrouter 90 /250 load-host configurator	WANrouter 90/250 series manual set
WR90/250 Config	Starts the WR90/250 configurator	WANrouter 90/250 series manual set
CONSOLE	Starts console terminal emulation on the PC	Chapter 12
DOS	Runs a new copy of the MS–DOS command processor	Your PC documentation
EXIT	Returns to the MS–DOS operating system	Your PC documentation

4.2.1 Selecting Options

To select a menu option, do the following:

Move the cursor to the application you want, using the arrow keys, and press press Enter .

4.2.2 Moving Back

From the Router Management menu, you can move back to the screen displayed just before the menu.

To do this, press PG UP or PG DN .

For example, an application may display an error message and exit back to the Router Management menu. If the error message was displayed too quickly for you to see it, you can press PG UP or PG DN on the Menu to see the error message.

5

Using the Load-Host Configurator

This chapter describes how to use the load-host configurator to configure the DECNIS to load from PC load hosts.

5.1 What Is the Load-Host Configurator?

The load-host configurator is a menu-based program, supplied with the DECNIS software. You use the program to:

- Enter information required for a PC to load software and configuration files to a DECNIS, and receive dumps. This is described in the present chapter.

- Delete, modify, list, update and restore loading information. This is described in Chapter 10.

You must run the load-host configurator before you run the DECNIS text-based configurator.

Definition   A **load host** is a PC which can load the configured DECNIS software to the DECNIS hardware in response to a load request.

5.1.1 Using BOOTP/TFTP

In the load-host configurator, you enter information that enables the PC to use **BOOTP/TFTP** to load the DECNIS. BOOTP/TFTP is a set of protocols for loading and dumping, defined in RFCs 783 and 951.

Note   In order to use BOOTP/TFTP to load the DECNIS, you must start the BOOTP/TFTP server, as described in Chapter 8.

5.1.2 Using MOP

A PC may use **MOP** to load the DECNIS. MOP (Maintenance Operations Protocol) is a Digital-specific protocol used for loading and dumping.

If you intend to use MOP for loading, note the following:

Note

- The load-host configurator does not set up MOP loading information.

- In order to use MOP, the PC must be running PATHWORKS:

  - Refer to Appendix C for information on loading from a PATHWORKS Version 5.0 PC.

  - Refer to Appendix D for information on loading from a PATHWORKS Version 4.1 PC.

5.2 Starting the Load-Host Configurator

To start the load-host configurator, follow these steps:

Procedure

1. Call up the Router Management menu, as described in Section 4.1.

2. Select `DECNIS Host`.

5.3 Menu Options

The load-host configurator Main Menu displays these options:

- `Add a router`

  To set up DECNIS loading information for the first time.

- `Delete a router`

  To delete loading information for a router.

- `Modify a router`

  To modify information previously set up using the load-host configurator.

- `List a router`

  To display DECNIS systems previously set up using the load-host configurator.

- `Restore a router`

  To recreate loading and dumping information for a DECNIS.

- `Update a router option`

  To update loading information to the latest version of DECNIS software.

5.4 How to Enter Load Information

To enter load configuration information about a DECNIS for the first time, follow these steps:

1. Select `Add a router` from the Main Menu.

2. The screen displays a list of routers, depending on the routers installed. If you have only installed DECNIS software, it will display:

   ```
   Select the type of router, or return to the Main Menu.

   Return to Main Menu
   DECNIS 600
   DECNIS 500
   ```

   Select the type of DECNIS to load.

3. Enter load information on the screens. Section 5.5 describes the information in detail.

5.5 Load Information

This section describes the information you enter on the load-host configurator screens.

5.5.1 Load Client Name

The load client name identifies the DECNIS for downline loading and upline dumping.

Finding the Load Client Name

You create the load client name yourself. The only restrictions are:

- The name must be unique to this DECNIS.

- The maximum length of the name is 6 characters.

5.5.2 Hardware Address

This is the hardware address of the DECNIS. The format is six pairs of hexadecimal digits, separated by hyphens.

Example   08-00-2b-35-8A-70

Finding the Hardware Address

The hardware address is printed on the label on the DECNIS Management Processor Card. Enter the address just as it is on the label, including the 0 (zero) as the final digit.

5.5.3 IP Address

You must supply an IP address for the DECNIS. This is required for BOOTP/TFTP loading.

Format

The format of the IP address is four decimal integers, separated by decimal points.

Example

24.45.21.8

5.5.4 Phase IV Address

This is the DECnet™ Phase IV address of the DECNIS.

You must enter this address if any of the following are true:

*   You plan to manage the DECNIS from the PC. The DECnet address is used to identify the DECNIS in management commands. See Section 11.2.2 and Section 11.2.3 for details.

*   The DECNIS will need to communicate with DECnet Phase IV systems.

Otherwise, it is optional.

Format

The format of the Phase IV address is:

area-number.node-number

where: *area-number* is the number of the area where the DECNIS is located

node-number is the node number of the DECNIS

Example

21.47

5.5.5 Type of Loading

The load-host configurator asks how the DECNIS is to be loaded when it is rebooted:

```
Nonvolatile memory for both CMIP and image
Load host for CMIP; nonvolatile memory for image
Load host for both CMIP and image
```

Definition

The term **nonvolatile memory** refers to an area of DECNIS memory that is used to store its software image and (as an option) its CMIP and profile files.

Nonvolatile memory is sometimes referred to as **flash** memory.

Advantages

The main advantages of nonvolatile memory loading are:

- It is quicker than loading from a load host.

- Once the DECNIS is loaded, you do not need a load host on the network to reload it when it is rebooted.

Refer to the manual *DECNIS Configuration and Loading* for more information about nonvolatile memory loading.

5.5.6 Specifying a Dump File

The load-host configurator asks if you want a dump file to be created on the load host.

- If you select No, the load host will not be able to receive dumps from the DECNIS.

- If you select Yes, the DECNIS will dump to the file:

  install-directory\CLIENTS\ *load-client-name*\DUMP

It is important to check that there is enough disk space on the PC to receive dumps. Table 2–1 shows the amount of disk space required for dumps.

5.6 Getting Help

You can get online help at any time while running the load-host configurator. Refer to Chapter 7 for details.

5.7 Errors

If there are any errors when you are running the load-host configurator, they will be recorded in the following log file: *install-directory*\NIS\NIS_DNIS.LOG

5.8 The Load-Host Data File

The load-host configurator saves all load-host configuration information in a private data file, known as the **load-host data file**. When you modify or delete routing information, the load-host configurator uses the load-host data file to find the information that was previously entered.

The name of the load-host data file is:

install-directory\NIS\NIS_HCFG.DAT where *install-directory* is the installation directory.

5.8.1 Saving the Load-Host Data File

Each time you use the load-host configurator to add, modify or delete information, it creates a new load-host data file. It also saves the previous version of the load-host data file.

The name of the previous version is the same as the name of the current one, except that it has the suffix .OLD instead of the suffix .DAT.

5.9 What Happens to the Load Information

When you have finished entering information in the load-host configurator, it does the following:

- Saves the information in the load-host data file

- Writes information about the DECNIS to be loaded in the following file:

  C:\ *install-directory*\ BOOTP.TAB

  where *install-directory* is the installation directory.

6

Using the DECNIS Configurator

This chapter describes how to start the DECNIS configurator, and how to get help.

6.1 What Is the DECNIS Configurator?

Once you have set up loading information in the load-host configurator, you need to run the DECNIS text-based configurator.

You use the DECNIS text-based configurator to enter the information needed for the DECNIS to communicate with other systems. For example, you enter information about network addresses, routing options, interfaces and protocols.

The DECNIS text-based configurator is a menu-based program, with screens on which you select or type in information. The screens are grouped into sections, each corresponding to a type of configuration information. When you finish a section, you can go to the next one, or go back and change information you previously entered.

For detailed information on the DECNIS configurator, refer to the *DECNIS Configuration and Loading*.

6.2 Starting the DECNIS Configurator

To start the DECNIS text-based configurator, follow these steps:

| Procedure |

1. Call up the Router Management menu, as described in Section 4.1.

2. Select `DECNIS Config`.

6.3 Using the DECNIS Configurator Keys

Table 6–1 shows the keys you use to enter and change information, and to move through the configurator sections.

Table 6–1 Configurator Keys

Use this key...	To do this...
Up Arrow	Move the cursor to the field above
Down Arrow	Move the cursor to the field below
Left Arrow	Move the cursor to the left within a field
Right Arrow	Move the cursor to the right within a field
Enter or Return	Enter the option you have chosen
F1	Get help on a field or section
F10	Leave Help and go back to entering data
F8	Quit the configurator without saving any data
PG UP	Go to the previous data entry screen in a section
PG DN	Go to the next data entry screen in a section
Insert	Shift between inserting characters and overtyping characters
Delete	Remove all text in a field
Ctrl/W	Refresh the screen
<— (Backspace)	Delete the character to the left of the cursor
F7	Move the cursor to the previous column (on screens with two columns)

7

Getting Help when Running the Configurators

You can get online help when running the load-host configurator and your DECNIS text-based configurator. This chapter describes how to get online help, how to leave online help, and the different types of online help you can get.

7.1 How to Get Online Help

To get online help in either configurator, press [F1].

7.2 Help on Fields and Menu Choices

If you press [F1] when the cursor is on a field or menu, three lines of text appear near the bottom of the screen, telling you what sort of value to enter, or what the results are of making a menu choice.

If you press [F1] again, another screen appears with more information. If there are several screens of information, you can page through them by pressing [PG DN] or [PG UP].

If you look in the upper righthand corner of a Help screen, it will say how many pages of Help text there are. For example, `Page 1 of 2`.

To leave a Help information screen, press [F10].

7.3 Help on the Configurators

To get help on using the configurators themselves (for example, the keys you can use), press [F1] while you are on any other Help screen.

7.4 Keys to Get Help

Table 7–1 shows the keys you can use to get Help, or to leave
Help.

Table 7–1 Keys Used to Get Help

Pressing this key...	From this screen...	Gives you this...
F1	Data entry screen	3-line Help
F1	Data entry screen with 3-line Help displayed	Full screen of help
F1	Full screen of help	Procedures Help menu
PG DN	Full screen of help, Procedures Topic	Next screen of information
PG UP	Full screen of help, Procedures Topic	Previous screen of information
F9	Procedures Topic	Return to Procedures Help Menu
F10	Full screen of help, Procedures Help menu, Procedures Topic	Leave Help and return to entering data

8

Setting Up and Using BOOTP/TFTP

This chapter describes how to control the BOOTP/TFTP server.

8.1 Introduction

You must start the BOOTP/TFTP server before you attempt to use BOOTP/TFTP to load your DECNIS.

8.1.1 What Is BOOTP/TFTP?

BOOTP/TFTP is a set of protocols used for loading devices such as routers. The protocols are defined in RFCs 783 and 951.

Definition

The BOOTP/TFTP server is the software that enables the PC to use the BOOTP/TFTP protocols to load to and dump from the DECNIS.

- For loading, BOOTP determines the IP address of the device to be loaded, and the name of a file to be loaded. TFTP is the protocol actually used for loading.

- For dumping, the DECNIS uses BOOTP to find a host that can receive a dump. TFTP is used to write the dump.

8.2 Before You Start

Check the following:

- If the PC is running PATHWORKS Version 5.0 (rather than the NAI), make sure that the installation option TCP/IP and Utilities was selected during PATHWORKS installation.

  If the PC is not running PATHWORKS Version 5.0, make sure that you have set up the NAI, as described in Section 3.4.

- If you are loading several DECNIS routers, you may wish to increase the number of UDP sockets supported, as BOOTP /TFTP can use up to 12 sockets.

8.3 Starting the BOOTP/TFTP Server

There are two methods for starting the BOOTP/TFTP server, depending on whether you wish to run it in **foreground mode** or **background mode**.

8.3.1 Starting: Foreground Mode

Follow these steps:

1. Call up the Router Management menu, as described in Section 4.1.

2. Select BOOTP

| Note |

If you use this method, you cannot run any other application while BOOTP/TFTP is running. This is referred to as running in foreground mode.

8.3.2 Starting: Background Mode

Follow these steps:

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   RBOOT
   ```

With this method, you can run other applications while BOOTP /TFTP is running. This is referred to as running in background mode.

Problems with Background Mode

If there are problems while running the BOOTP/TFTP server in background mode, you should switch to running it in foreground mode. For advice on possible problems, see the manual *DECNIS Problem Solving*.

8.4 Starting the BOOTP/TFTP Server Automatically

If you wish, you can start the BOOTP/TFTP server automatically whenever you start up your PC. With automatic starting, the BOOTP/TFTP server will run in background mode.

| Procedure |

Add the following command to the AUTOEXEC.BAT file:

```
call C:\install-directory\RBOOT.BAT
```

where *install-directory* is the installation directory.

| Note | You must add this command after the STARTNET line in the AUTOEXEC.BAT file. See Section 3.6 for more information. |

8.5 The BOOTP/TFTP Server Window

The BOOTP/TFTP server provides a window to monitor the progress of a BOOTP/TFTP load (or dump). The window also allows you to do the following:

- Control the BOOTP/TFTP server.

- Stop the BOOTP/TFTP server.

- Control the display of information about a load or dump.

Section 8.6 explains how to start and use the window in foreground mode; Section 8.7 explains how to start and use the window in background mode.

8.6 Displaying the Foreground Mode BOOTP/TFTP Server Window

If you selected BOOTP from the Router Management menu, the BOOTP/TFTP server window is automatically displayed.

Initially, the window only shows a command prompt:

time Command (? for list) > _

where *time* is the time in hours, minutes and seconds.

8.6.1 The Foreground Mode Menu

If you enter ?, the following menu appears:

```
d           to toggle responding to dump
l /PG DN    to show the lower log display
t           to toggle display of unsatisfied requests
u /PG UP    to show the upper log display
x /END      to exit from bootp
z           to clear the log file
```

The first column shows the key to press. The second column explains what happens if you press the key.

Table 8–1 explains these actions more fully.

Table 8–1 BOOTP/TFTP Server Menu: Foreground Mode

Action	Explanation
Toggle responding to dump	Decides whether this PC will accept a BOOTP/TFTP dump request from a router
Show the lower log display	Displays the last twelve events that have been sent during a load or dump
Show the upper log display	Displays the twelve events previous to the last twelve sent during a load or dump
Toggle display of unsatisfied requests	Shifts between displaying and not displaying requests from devices‡ for a load
Exit from BOOTP	Closes down the BOOTP/TFTP server
Clear the log file	Deletes the contents of the log file so far

‡Devices other than routers make BOOTP load requests, for example, printers

8.7 Displaying the Background Mode BOOTP/TFTP Server Window

If you are running the BOOTP/TFTP server in background mode, you can display the BOOTP/TFTP server window. Do the following:

`Procedure`　At the command prompt, hold down the following keys at the same time:

> Alt
> Left Shift
> The letter b

Initially, the window looks like the foreground mode window described in Section 8.6.

8.7.1 The Background Mode Menu

If you enter ?, the following menu appears:

```
e        to exit leaving the window up
r        to terminate and remove the TSR
d        to toggle responding to dump
l /PG DN to show the lower log display
t        to toggle display of unsatisfied requests
u /PG UP to show the upper log display
x /END   to exit leaving the TSR running
```

Table 8–2 explains these actions more fully.

Table 8–2 BOOTP/TFTP Server Menu: Background Mode

Exit leaving the window up	For diagnostic purposes only
Toggle responding to dump	Same as Table 8–1
Show the lower log display	Same as Table 8–1
Show the upper log display	Same as Table 8–1
Toggle display of unsatisfied requests	Same as Table 8–1
Terminate and remove the TSR	Closes down the BOOTP/TFTP server
Exit leaving the TSR running	Return to command prompt. The server continues to run in background mode

8.8 Stopping the BOOTP/TFTP Server

You stop the BOOTP/TFTP server from the BOOTP/TFTP server window. There are two methods, depending on whether the server is running in foreground mode or background mode.

8.8.1 Foreground Mode

If the BOOTP/TFTP server is running in foreground mode, the window will be started. Do the following:

| Procedure |

On the BOOTP/TFTP server window, press the letter $\boxed{\text{x}}$.

8.8.2 Background Mode

To stop the BOOTP/TFTP server when it is running in background mode, follow these steps:

| Procedure |

1. Start the BOOTP/TFTP server window as described in Section 8.7.

2. Press the letter $\boxed{\text{r}}$.

9

Loading a DECNIS

9.1 Introduction

Once you have configured your DECNIS, you can load the load file or files from the PC to the DECNIS hardware. This chapter describes how to do this.

The method of loading described in this chapter is direct loading.

Definition   With direct loading, the PC that holds the files to be loaded is on the same Local Area Network (LAN) as the DECNIS.

9.2 Before You Load

This section describes the checks you should make before you attempt to load or reload your DECNIS.

9.2.1 BOOTP/TFTP Loading

If you are using BOOTP/TFTP loading, make sure that the BOOTP/TFTP server is running on the PC load host, as follows:

- If the BOOTP/TFTP server menu is displayed on the screen of your PC, the server is running in foreground mode.

- If the BOOTP/TFTP server menu is not displayed, the server may be running in background mode. To check this, hold down the following keys at the same time:

    Alt
    Left Shift
    The letter b

  If the menu appears, then the server is running.

- Press the key e to leave the menu.

If the BOOTP/TFTP server is not running, then start it as described in Section 8.3.

9.2.2 MOP Loading

The PC load host must be running PATHWORKS in order to use MOP loading. Refer to Appendix C and Appendix D for details.

9.3 How to Load

To downline load a DECNIS from a load host, follow these steps:

1. Connect the DECNIS hardware unit to the LAN.

2. Plug the hardware unit in to the power supply and power up.

9.3.1 Loading a DECNIS

When you first load a DECNIS, by default it does not know its name. You need to assign a name to the DECNIS.

After the DECNIS is first loaded, enter the following command:

```
NCL> RENAME NODE p4-name NEW NAME decnis
```

where *p4-name* is the Phase IV name for the DECNIS, and *decnis* is its DECdns name (including the namespace name).

This places the name in DECNIS nonvolatile memory.

9.4 How to Reload

If the DECNIS has been loaded previously, you can reload it by issuing Network Control Language (NCL) commands. You can also reload the DECNIS by powering it up, as described in Section 9.3.

Section 9.4.1 to Section 9.4.3 describe various methods of reloading.

For more information about the NCL commands described here, refer to NCL help.

9.4.1 Default Type of Reloading

This section explains how to cause the DECNIS to reload using its default type of loading. The default is the type of loading set up for the DECNIS during load-host configuration: Full nonvolatile memory loading, partial nonvolatile memory loading, or load host loading.

Issuing the NCL LOAD Command

Follow these steps:

`Procedure`	1. Call up the Router Management menu, as described in Section 4.1.
	2. Select `NCL`
	3. Issue the following command:

`NCL> LOAD NODE `*`router`*`/`*`username`*`/`*`password`*` DEVICE UNIT `*`device`*

where: *router* is either the DECnet Phase IV address or node name of the DECNIS.

username and *password* are the user name and password you enter when using NCL commands to manage the DECNIS.

device is MP* for the DECNIS.

Powering Up

If you power up the DECNIS, as described in Section 9.3, this will have the same effect as issuing the NCL LOAD command.

9.4.2 Reloading from a Load Host

This section describes how to cause the DECNIS to reload from a load host, rather than from nonvolatile memory.

Issuing NCL Commands

To cause the DECNIS to reload from a load host, follow these steps:

`Procedure`

1. Call up the Router Management menu, as described in Section 4.1.

2. Issue the following command:

```
NCL> SET NODE router/username/password HARDWARE -
_NCL> DEBUG FLAGS 1073741952
```

This tells the DECNIS to load from a load host the next time it reloads.

3. Issue the following command:

`NCL> LOAD NODE `*`router`*`/`*`username`*`/`*`password`*` DEVICE UNIT `*`device`*

where *router*, *username*, *password* and *device* are defined as in Section 9.4.1.

This reloads the DECNIS.

Note that these commands do not specify which load host on the network will be used.

Powering Up

If you power up the DECNIS with the dump button pressed in, this will cause the DECNIS to load from the load host.

Powering up with the dump button pressed in empties the nonvolatile memory in the DECNIS hardware unit. The DECNIS always attempts to load from a load host if there is no load file in its memory.

9.4.3 Reloading from a Specified MOP Load Host

You can cause the DECNIS to reload from a particular MOP load host, provided that the load host is reachable from the DECNIS.

To reload the DECNIS from a particular MOP load host, follow these steps:

Procedure

1. Call up the Router Management menu, as described in Section 4.1.

2. Issue the following command:

   ```
   NCL> LOAD NODE load-host/username/password -
   _NCL> MOP CLIENT client-name
   ```

   where: *load-host* is the DECnet node name of the MOP load host.

   username and *password* are the user name and password you must enter when using NCL commands to manage the DECNIS.

   client-name is the MOP client name of the DECNIS, as set up on the MOP load host.

9.5 More Information About Loading

Refer to the *DECNIS Configuration and Loading* manual for more information about loading the DECNIS.

Part II

Using DECNIS Applications on the PC

This part gives more information about the applications you can run from the Router Management menu.

It contains the following chapters:

- Chapter 10 describes how to use the load-host configurator to delete, change, update and restore load information.

- Chapter 11 describes how to use the Network Control Language (NCL) on a PC.

- Chapter 12 describes the CONSOLE option on the Router Management menu.

10

Using the Load-Host Configurator Options

This chapter briefly describes the following load-host configurator Main Menu options:

- `Delete a router`

- `Modify a router`

- `Restore a router`

- `Update a router`

Refer to Chapter 5 for more information about the load-host configurator.

10.1 Delete a Router

`Delete a router` displays a list of routers that were previously entered using the load-host configurator. You select the name of the router you wish to delete.

10.1.1 Deleted Files

If you delete a DECNIS, the load-host configurator renames the DECNIS configuration files previously created for that DECNIS. The files are saved in the following directory:

install-dir\CLIENTS*client-name*

where *install-dir* is the installation directory and *client-name* is the load client name of the DECNIS.

The file names are in the following table:

File Name	Description
NCLSCRPT.OLD	Master NCL script file for deleted DECNIS
SCRIPT.OLD	CMIP file for deleted DECNIS
client-name.OLD	Data file for the deleted DECNIS

Example

In the load-host configurator, you set up a DECNIS with the load client name EAST. You then configure EAST using the DECNIS configurator. A master NCL script file is created with the name:

EAST.NCL

If you delete EAST in the load-host configurator, the master NCL script file will be renamed:

EAST.OLD

10.2 Modify a Router

`Modify a router` displays a list of routers that were previously entered using the load-host configurator. You select the name of the router you wish to modify.

Information You Cannot Modify

The only load information you cannot modify is the load client name.

10.2.1 After Modifying

It is strongly recommended that you rerun the DECNIS text-based configurator after using Modify. This is because changes to loading information may affect or even invalidate information entered in the DECNIS text-based configurator.

10.2.2 Modifying Type of Loading

If you change the type of loading—for example, from nonvolatile memory loading to load-host loading—you must do the following for your changes to take effect:

Procedure

1. Run the DECNIS configurator, and go to the `Create NCL Script` section.

2. Create an NCL script file.

3. Create a new CMIP file or combined file.

Effect of Modifying Type of Loading

If you change from nonvolatile memory loading to load-host loading, the combined file is deleted on the load host.

10.3 Restore a Router

Restore a router reenters information in the file BOOTP.TAB, which contains BOOTP loading information.

This option is useful if the permanent load information is lost or deleted.

There are two ways of using the Restore option:

- Restore a router option in the load-host configurator, to restore an individual DECNIS.

- The automatic Restore procedure, to restore all DECNIS systems set up by the load-host configurator.

10.3.1 Automatic Restore

You use automatic Restore to restore load information for all DECNIS systems in the load-host data file.

Procedure Follow these steps:

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NIS\NIS_HCFG/RESTORE
   ```

10.4 Update a Router

When you install a new version of DECNIS software, you need to update existing DECNIS systems so that they can use the new version of the software. There are two kinds of update procedure:

- Update a router option in the load-host configurator, to update an individual DECNIS.

- The automatic Update procedure, to update all DECNIS systems in the load-host data file.

10.4.1 Automatic Update

To use automatic Update, run the automatic Update procedure. When you start this procedure, you can also specify the type of loading for the updated systems. The default type of loading is full nonvolatile memory loading.

10.4.2 Update: Full Nonvolatile Memory

To update all DECNIS systems and specify that the combined image and configuration file be loaded from nonvolatile memory, follow these steps:

| Procedure |

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NIS\NIS_HCFG/UPDATE
   ```

You can achieve the same result by entering:

```
NIS\NIS_HCFG/UPDATE=FLASH_FULL
```

10.4.3 Update: Part Nonvolatile Memory

To update all DECNIS systems, and specify that CMIP and profile files be loaded from the load host and the software image from nonvolatile memory, follow these steps:

| Procedure |

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NIS\NIS_HCFG/UPDATE=FLASH_PART
   ```

10.4.4 Update: Load Host Loading

To update all DECNIS systems, and specify that the CMIP and profile files and the software image be loaded from the load host, follow these steps:

| Procedure |

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Enter the following at the command prompt:

   ```
   NIS\NIS_HCFG/UPDATE=NETWORK
   ```

11

Using the Network Control Language

This chapter describes how to run the Network Control Language (NCL) on your PC.

11.1 What Is NCL?

The Network Control Language (NCL) is a utility that enables you to manage and monitor your DECNIS on the network. You can enter NCL commands on a PC to:

- Set and change the configuration parameters of your DECNIS systems.

- Monitor your DECNIS systems.

11.2 Using NCL

To use NCL on your PC, follow these steps:

| Procedure |

1. Call up the Router Management menu, as described in Section 4.1.

2. Select NCL.

3. The NCL prompt will appear:

   `ncl>`

4. Enter the NCL commands at the NCL prompt.

11.2.1 NCL Command Format

NCL commands have the following format:

verb NODE *node-name entity-name* [{*argument*(*s*)/*attribute*(*s*)}]

11.2.2 Node Names in NCL Commands

You must include a node name to identify the system being managed in each NCL command you enter on the PC. The node name must be one of the following:

- The DECnet Phase IV address of the node being managed. For your DECNIS, this must be the address that you entered in the load-host configurator. See Section 5.5.4 for details.

- The DECnet Phase IV node name of the node being managed. Section 11.2.3 describes how to create a node name.

Note

You cannot use NCL on the PC to manage the PC itself. You can only use it to manage the following:

- The DECNIS

- The WANrouter 90/250 series routers

- Any system running DECnet/OSI™, provided that the entities you wish to manage require only the standard NCL dictionary

11.2.3 Setting Up DECnet Node Names

To create a DECnet node name for your DECNIS, follow these steps:

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. Start the Network Control Program (NCP) utility, by entering the following at the command prompt:

   ```
   NET\NCP
   ```

3. Enter the following NCP command:

   ```
   NCP> DEFINE NODE n.nnn NAME name
   ```

   where: *n.nnn* is the DECnet Phase IV address of the DECNIS

   name is a 6-character DECnet node name

11.2.4 Example

In the load-host configurator, you have entered 5.67 for the Phase IV address of your DECNIS. To create a node name for the DECNIS, follow these steps:

1. Change directories to the installation directory. For example:

   ```
   C:\> cd DECROU
   ```

2. At the command prompt, enter:

   ```
   NET\NCP
   ```

3. Enter the following command:

   ```
   NCP> DEFINE NODE 5.67 NAME PEACH
   ```

You can now enter NCL commands using either the address or node name. For example, both of the following commands are valid:

```
ncl> SHOW NODE PEACH ROUTING CIRCUIT * ALL
```

```
ncl> SHOW NODE 5.67 ROUTING CIRCUIT * ALL
```

11.3 Help on NCL

To find out more about NCL, refer to the online help within NCL. To call up the online help, enter HELP at the NCL prompt:

```
ncl> HELP
```

This will give you details of the commands, entities, attributes and characteristics supported.

Refer to the manual *DECNIS Management* for details of the NCL commands used to carry out specific tasks.

11.3.1 Structure of NCL Help

NCL Help is a hierarchical system with a number of levels. The method for navigating through Help is as follows:

1. The first Help screen displays a list of Help topics.

2. Enter the name or letter identifying a Help topic.

3. The screen displays a sublist of Help topics. Repeat step 2. This will give you information or display a further list of topics.

4. To go back to the Help topics on the level above, press ⎡Return⎤.

5. To leave Help, keep pressing ⃞Return until you reach the ncl>
   prompt.

11.4 Editing NCL Commands

Table 11–1 lists the keys you can use to help you edit NCL
commands.

Table 11–1 Keys for Editing NCL Commands

Use this key...	To do this...
Up Arrow	Recall a previous command
Down Arrow	After recalling a previous command, recall the next command in the series
Left Arrow	Move the cursor one character to the left
Right Arrow	Move the cursor one character to the right
⃞Enter or ⃞Return	Enter a command you have typed
⃞Insert	Toggle between inserting characters and typing over characters
⃞Ctrl/A	Move the cursor to the start of the command line
⃞Ctrl/E	Move the cursor to the end of the command line
⃞⟨X] or DEL	Delete the character to the left of the cursor
⃞Ctrl/U	Delete text from the cursor to the start of the line
⃞-	Type a hyphen at the end of a line to continue typing a command on the next line

**11.4.1 Line
Length**

The maximum length of a line in an NCL command is 1024
characters. The effect of this is as follows:

• If you are typing in an NCL command, when you reach the
  righthand side of the screen, the cursor automatically moves
  to the next line.

- If you have typed 1024 characters or less, you can at any point go back to previous lines (using the left arrow key) and edit the command.

- Once you type more than 1024 characters, the cursor jumps to the next line. At this stage, you cannot go back and edit previous lines. You must press ⃞Enter to enter the command.

11.4.2 Command Length

The maximum length of an NCL command (as opposed to a line) is 2048 characters. To type in a command longer than 1024 characters, use a hyphen as a continuation character.

You can enter the hyphen at any point, as long as it is before you have typed 1024 characters.

11.5 Displaying NCL Output

You use NCL SHOW commands to display information about your system.

The output from SHOW commands is automatically displayed one screen at a time. Table 11–2 shows the keys you can then use to control the display of NCL command output.

Table 11–2 Keys to Control NCL Output

Use this key...	To do this...
Space bar	Display the next screen of output
⃞Return	Scroll one line of output
⃞q or ⃞Q	Terminate the output and return to the NCL prompt
⃞b or ⃞Ctrl/B	Display the previous screen of output
⃞? or ⃞h	Display help text
⃞s or ⃞S	Scroll continuously to the end of the output

11.5.1 The More Prompt

When you enter an NCL SHOW command, the console displays the following prompt at the bottom of the screen:

`--More--(x)`

where *x* is the screen number of this screen of output.

The screen number is relative to the other screens of output for this command. For example, if an NCL command produces three screens of output, and you are looking at the second screen, the prompt is:

```
--More--(2)
```

If you page back to a previous screen of output, the prompt will contain an arrow. For example, if you page back to the first screen of output, the prompt will be:

```
--More->(1)
```

If you page back until you are looking at the output from a previous command, the prompt will show a negative number. For example:

```
--More->(-3)
```

When the last saved screen is displayed, you will see the prompt:

```
No more screens saved
```

11.6 Exiting from NCL

To exit from NCL at the ncl> prompt, type any of the following:

- Ctrl/Z

- Exit and Return

You will return to the Router Management menu.

11.7 Restrictions

This section describes restrictions in the use of NCL on the PC that do not apply to other systems that support NCL.

11.7.1 SNAPSHOT Command

When entering the SNAPSHOT command, you must specify the name of a file to hold the output of this command.

SNAPSHOT Command Example

For example, you wish to capture information about the counters produced by the CSMA/CD stations on a DECNIS named PEACH. You wish to hold the information in the file DECROU /PEACH. Enter the following command:

```
ncl> SNAPSHOT NODE PEACH CSMA-CD STATION * ALL COUNTERS, -
_ncl> TO PEACH.TMP
```

11.7.2 SHOW Command for SNAPSHOT

When entering a SHOW command to look at the output of a SNAPSHOT command, you must specify the name of the file that holds the SNAPSHOT output.

SHOW Command Example

To show the information in PEACH.SNP, enter this command:

```
ncl> SHOW NODE PEACH CSMA-CD STATION * ALL COUNTERS, -
_ncl> FROM PEACH.TMP
```

11.7.3 DECdns Names in NCL Commands

A restriction applies to NCL commands containing attributes which are DECdns names. In such commands, the DECdns name must have the following format:

NSCTS:*.dns-name*

where: *NSCTS* is the namespace creation timestamp of the namespace in which the full name is registered.

dns-name is the DECdns name of the node.

Definition

The NSCTS is a unique identifier for the namespace in which the DECdns full name is registered. The NSCTS is automatically created when the namespace is created. It consists of 14 hexadecimal digits.

Finding the NSCTS

There are two ways to find the NSCTS for a DECnet node. These are described in **Procedure 1** and **Procedure 2**

Procedure 1

If the node has a DECnet Phase IV address, follow these steps:

1. Find the DECnet Phase IV address of the node.

2. Enter the following NCL command:

    ```
    ncl> SHOW NODE phase-iv-address NAME
    ```

    where *phase-iv-address* is the Phase IV address of the node.

3. In the display, the hexadecimal digits appearing before the colon (:) make up the NSCTS.

Procedure 2	If the node does not have a DECnet Phase IV address, you cannot find its NSCTS from the PC. Instead, follow these steps:

1. At a DECnet/OSI node, enter the following NCL command:

   ```
   ncl> SHOW NODE node-name DNS CLERK KNOWN NAMESPACE * NSCTS
   ```

   where node-name is the DNS name of the node whose NSCTS you are attempting to find.

2. The NSCTS is displayed next to the label NSCTS.

Example Commands

This section gives example NCL commands to which this restriction applies. In the examples:

- The node name to be used as an attribute is:

  shrub.leaf

- The NSCTS is:

  00-12-23-56-77-A0-A1-A2-A3-A4-A5-A6-A7-18

Example 1	To define **shrub.leaf** as an event sink for a DECNIS called PEACH, enter this command:

```
ncl> SET NODE peach EVENT DISPATCHER SINK NODE -
_ncl> {00-12-23-56-77-A0-A1-A2-A3-A4-A5-A6-A7-18:.shrub.leaf}
```

Example 2	To set up X.25 security for outgoing calls for the node **shrub.leaf**, enter this command:

```
ncl> SET X25 SERVER SECURITY NODES security_out NODES -
_ncl> {00-12-23-56-77-A0-A1-A2-A3-A4-A5-A6-A7-18:.shrub.leaf}
```

12

Connecting to a Console

This chapter describes the CONSOLE option on the Router
Management menu.

12.1 Selecting CONSOLE

The CONSOLE option on the Router Management menu
provides console terminal emulation on your PC. This allows the
PC to connect to routers that support a console connection, for
example, the DECNIS.

12.2 Before You Start

Before you select CONSOLE from the Router Management
menu, make sure that there is a physical connection between
your PC and the system that you wish to connect to.

12.3 Connecting to the DECNIS Console Port

When you select CONSOLE, you will see a blank screen.
To connect to the console port, follow the instructions in
Table 12–1.

Table 12–1 Starting the Console

If...	Then do this...
Autobaud on the DECNIS console port is enabled	1. Press Return twice.
	2. When the character # is displayed, press Ctrl/C.
	3. If # is not displayed immediately, repeat steps 1 and 2
Autobaud on the DECNIS console port is disabled	Press Ctrl/C.

12.4 Exiting from the Console

To exit from the console, do either of the following:

- Enter the following command:

  console> Exit

- Press Ctrl/C.

12.5 More Information

For more information about connecting to the DECNIS console port, see Chapter 2 in the manual *DECNIS Management*.

Part III

Appendixes

This part contains the following appendixes:

- Appendix A lists the information needed when running the load-host configurator.

- Appendix B lists the online documentation files, the files created by the configurators, and the files loaded to the DECNIS from the PC.

- Appendix C describes how to use MOP to load to the DECNIS from a PC running PATHWORKS V5.

- Appendix D describes how to use MOP to load to the DECNIS from a PC running PATHWORKS V4.1.

A
Information Required for Load-Host Configuration

Table A–1 lists the information needed when running the load-host configurator.

Write down your values in the last column, headed **Your Value**.

See Chapter 5 for explanatory notes on load-host configuration.

Default Values

The column labelled **Default** in the tables shows the default value supplied by the configurators for each item of information.

If the **Default** column shows –, this means that the configurator does not provide a default. If the value is required, you need to provide it yourself. The column labelled Required/Optional shows whether the value is required or optional.

Information Required for Load-Host Configuration

Table A–1 Load-Host Configuration Information

Information Required	Notes	R(equired)/ O(ptional)	Default	Your Value
Type of DECNIS	Select from list	R	–	
Load client name	Create a name to identify the DECNIS for loading. Max. 6 characters	R	–	
Hardware address	LAN address of the DECNIS. For a DECNIS, the address printed on the label on the Processor Card. Example: 08-00-2B-02-AA-20	R	–	
IP address	IP address for the DECNIS	R	–	
DECnet Phase IV address of DECNIS	*Area number.node number* Example: 2.43	R	–	
Type of loading	Select one: load host for CMIP, nonvolatile memory for image; nonvolatile memory for both CMIP and image; load host for both CMIP and image	R	Nonvolatile memory for both CMIP and image	
Create a dump file?	Select Yes or No	R	Yes	

B

DECNIS Files

This appendix lists the following:

- The DECNIS online documents installed.
- The files created by the configurators on the PC.
- The files loaded to the DECNIS from the PC.

B.1 DECNIS Online Documentation

Table B–1 lists the online documents installed. The documents are all in the following directory:

install-directory\DOCS

Table B–1   Documents Installed

File Name	Description
DECNIS Problem Solving Manual Files	
PSG_C00.TXT	Title, Copyright, Contents, Preface
PSG_C01.TXT	Chapter 1: How to begin Problem Solving
PSG_C02A.TXT	Chapter 2: DECNIS Unreachable (part 1)
PSG_C02B.TXT	Chapter 2: DECNIS Unreachable (part 2)
PSG_C02C.TXT	Chapter 2: DECNIS Unreachable (part 3)
PSG_C03.TXT	Chapter 3: DECNIS Reachable
PSG_C04A.TXT	Chapter 4: Checking Circuits (part 1)
PSG_C04B.TXT	Chapter 4: Checking Circuits (part 2)

(continued on next page)

Table B–1 (Cont.)   Documents Installed

File Name	Description
DECNIS Problem Solving Manual Files	
PSG_C04C.TXT	Chapter 4: Checking Circuits (part 3)
PSG_C04D.TXT	Chapter 4: Checking Circuits (part 4)
PSG_C05.TXT	Chapter 5: Proxy Loading Problems
PSG_C06.TXT	Chapter 6: DECnet/OSI Routing Problems
PSG_C07A.TXT	Chapter 7: X.25 Problems (part 1)
PSG_C07B.TXT	Chapter 7: X.25 Problems (part 2)
PSG_C07C.TXT	Chapter 7: X.25 Problems (part 3)
PSG_C08.TXT	Chapter 8: Internet Protocol (IP) Problems
PSG_C09.TXT	Chapter 9: Bridging Problems
PSG_C10.TXT	Chapter 10: AppleTalk Problems
PSG_C11.TXT	Chapter 11: Netware IPX Problems
PSG_C12.TXT	Chapter 12: Loopback Testing
PSG_C13.TXT	Chapter 13: Event Logging
PSG_C14.TXT	Chapter 14: Reporting Problems to Digital
PSG_IDX.TXT	Index
DECNIS Event Message Files	
EVMSG40A.TXT	Part 1
EVMSG40B.TXT	Part 2
EVMSG40C.TXT	Part 3
Release Notes	
NIS040.REL	DECNIS V4.0 Release Notes

(continued on next page)

Table B–1 (Cont.) Documents Installed

File Name	Description
	Example NCL Scripts
ATM_DS3	Example NCL for ATM on DS3 lines
ATM_E3	Example NCL for ATM on E3 lines
ATM_OC3	Example NCL for ATM on OC3 lines
ATMOC3IP	Example NCL for ATM Classical IP on OC3 lines
BACKUP.NCL	Example NCL for backup circuits
DNS_NAME.NCL	Example NCL for IP services
ICMP_RD.NCL	Example NCL for ICMP router discovery
IPX_WAN.NCL	Example NCL for IPX WAN links
IP_MULTI.NCL	Example NCL for IP multicast
IP_PPRIO.NCL	Example NCL for IP packet prioritization
LAT_PRIO.NCL	Example NCL for LAT packet prioritization
NIS_TEST.NCL	General example NCL script
OSPF_MIN.NCL OSPF_MUL.NCL OSPF_VIR.NCL	Example NCL for OSPF routing
PAC_FILT.NCL	Example NCL for IP packet filtering
PRIORITY.NCL	Example NCL for packet prioritization
STANDBY.NCL	Example NCL for IP Standby
SMDS.NCL	Example NCL for SMDS
X25_REL1.NCL X25_REL2.NCL X25_REL3.NCL	Example NCL for X.25 Relay
	X.25 Network Information
FCNS_NI.TXT	Information about the X.25 PSDNs supported for use by Digital products

DECNIS Files

Table B–1 (Cont.)   Documents Installed

File Name	Description
DEC Vendor MIB	
ELANMIB.TXT	The DEC Vendor MIB

B.2 Files Created on a PC

Table B–2 shows the files created by the configurators on a PC.

Table B–2   DECNIS File Names on PCs

File	Location	File Name
Master NCL script file	*install-directory*\CLIENTS*client-name*	NCLSCRPT.NCL
Master NCL script file for deleted DECNIS	*install-directory*\CLIENTS*client-name*	NCLSCRPT.OLD
CREATE NCL script file	*install-directory*\CLIENTS*client-name*	CREATE.NCL
SET NCL script file	*install-directory*\CLIENTS*client-name*	SET.NCL
ENABLE NCL script file	*install-directory*\CLIENTS*client-name*	ENABLE.NCL
CMIP file	*install-directory*\CLIENTS*client-name*	SCRIPT
CMIP file for deleted DECNIS	*install-directory*\CLIENTS*client-name*	SCRIPT.OLD
Combined file	*install-directory*\CLIENTS*client-name*	SYSTEM
Log file for CMIP conversion	*install-directory*\CLIENTS*client-name*	NCLSCRPT.LOG
Log file for NCL checking	Defined by user	Defined by user
Log file for configurator errors	*install-directory*\NIS	NIS_DNIS.LOG
DECNIS data file	*install-directory*\CLIENTS*client-name*	*client-name*.DAT
DECNIS data file for deleted DECNIS	*install-directory*\CLIENTS*client-name*	*client-name*.OLD
Previous DECNIS data file	*install-directory*\CLIENTS*client-name*	*client-name*.BAK[1]
Previous DECNIS data file	*install-directory*\CLIENTS*client-name*	*client-name*.V*nn*[1]
Load-host data file	*install-directory*\NIS	NIS_HCFG.DAT
DECNIS dump file	*install-directory*\CLIENTS*client-name*	DUMP

[1]See Section B.2.1 for details.

B.2.1 Saved Version of the DECNIS Data File

When the DECNIS configurator creates a new DECNIS data file, it saves the old one, with a different file name extension. Normally, the previous DECNIS data file is saved with the following file name:

client-name.BAK

However, if you install a new version of the software, and then use the DECNIS configurator to modify an existing configuration, the previous data file is saved with a different file name:

client-name.V*nn*

where *nn* is the version number of the previous version of DECNIS software.

B.3 Files Loaded from a PC to a DECNIS

Table B–3 shows the names and locations of the files that are loaded to the DECNIS.

Table B–3 Files Loaded

File Name	Description
Load-Host Loading Selected	
install-directory\COMMON\NISV40\SYSTEM	Software image
install-directory\CLIENTS*client-name*\SCRIPT	CMIP file
install-directory\COMMON\MCNM_PRF	Modem Connect profile file (only if synchronous lines configured)
install-directory\COMMON\X25L2_PR *install-directory*\COMMON\X25L3_PR	X.25 profile files (only if X.25 lines configured)
Nonvolatile Memory Loading Selected	
install-directory\CLIENTS*client-name*\SYSTEM	Combined file

B.4 How BOOTP/TFTP Finds the Load Files on the DECNIS

The DECNIS software uses the BOOTP.TAB file to find the IP address and client name of the DECNIS.

The software does not use the BOOTP.TAB file to find the DECNIS load files. Although the BOOTP.TAB file contains pathnames for DECNIS load files, the DECNIS software ignores them. Instead, it looks for the files specified in Table B–3.

The software uses the client name listed in BOOTP.TAB to find the correct subdirectory for the SCRIPT or SYSTEM file.

C

MOP Loading to a DECNIS from a PATHWORKS V5 Load Host

This appendix describes how to set up MOP loading to a DECNIS from an MS–DOS PC running PATHWORKS for DOS, Version 5 (PATHWORKS V5 PC).

C.1 Before You Begin

Check that MOP was installed when you ran the PATHWORKS installation utility. MOP is a component under the DECnet and Utilities entry.

Refer to the manual *PATHWORKS V5 for DOS and Windows DECnet Network Management Guide* for information about setting up MOP on your PC.

C.2 Procedure

Follow these steps:

1. Install the DECROU and DECNIS software on the PATHWORKS V5 PC.

2. Run the load-host configurator.

   Note   As the load-host configurator only supports BOOTP loading, you must enter an IP address for the DECNIS, even if it does not need one.

3. Run the DECNIS text-based configurator. In the NCL Script section, create a load file: either a combined image/CMIP /profile file or a CMIP file, depending on the type of loading selected in the load-host configurator.

4. Exit from the DECNIS text-based configurator.

5. Now, run NCP. For example:

```
C:\> NCP
```

--- **Note** ---

When you enter DEFINE NODE commands, you may see the error message **User command error** even if your command is correct. Ignore this error message.

---

6. Define the node name of the DECNIS:

```
NCP> DEFINE NODE decnet-addr NAME cli-name
```

where *decnet-addr* is the DECnet Phase IV address of the DECNIS and *cli-name* is the load client name of the DECNIS.

7. Enter the hardware address of the DECNIS port that will receive the load. Section C.4 describes how to find the correct hardware address.

```
NCP> DEFINE NODE cli-name HARDWARE-ADDRESS hardware-address
```

8. If you are loading a separate software image, CMIP file and profile files, go to step 9.

If you are loading a combined file, specify the file as follows:

```
NCP> DEFINE NODE cli-name LOAD-FILE inst-dir\CLIENTS\cli-name\SYSTEM
```

where *inst-dir* is the installation directory.

9. If you are loading a separate software image, CMIP file and profile files, specify the software image and the CMIP file as follows:

```
NCP> DEFINE NODE cli-name LOAD-FILE inst-dir\COMMON\NISV40\SYSTEM

NCP> DEFINE NODE cli-name MANAGEMENT-FILE inst-dir\CLIENTS\cli-name
\SCRIPT
```

If your DECNIS has any serial lines, you need to copy the profile file(s) from the directory in which they are placed by the installation procedure to the directory:

C:\ *pathworks-directory*\ FCNS

Section C.3 explains this in detail.

10. To define a DECNIS dump file, enter the following:

```
NCP> DEFINE NODE cli-name DUMP-FILE inst-dir\CLIENTS\cli-name\DUMP
```

11. Enter the following:

```
NCP> SET NODE cli-name ALL
NCP> EXIT
```

12. Now, run MOP. Enter the following:

```
C:\PW> MOP
```

MOP will now wait for the DECNIS to request a load.

C.3 Moving Profile Files

If the DECNIS has any serial lines, it needs to load the Modem Connect profile file. If it has any X.25 lines, it also needs to load the X.25 Level 2 and Level 3 profile files.

C.3.1 What You Need to Do

The profile files are installed in the directory:

inst-dir\COMMON

You need to copy them to the directory:

C:*pathworks-directory*\FCNS

where *pathworks-directory* is the PATHWORKS directory set by the DECnet environment variable in the STARTNET.BAT file. See Appendix A in the manual *PATHWORKS V5 for DOS and Windows Client Installation and Configuration Guide* for details.

C.3.2 Profile File Names

The names of the profiles are as follows:

File Name	Description
MCNM_PRF	Modem Connect profile
X25L2_PR	X.25 Level 2 profile
X25L3_PR	X.25 Level 3 profile

C.3.3 Example   You have the following information:

Installation directory	C:\DECROU
DECnet environment variable for PATHWORKS directory	C:\PW

To copy the Modem Connect profile, you could enter the following command:

```
C:\> Copy DECROU\COMMON\MCNM_PRF C:\PW\FCNS
```

C.4 DECNIS Hardware Address

The DECNIS has 16 hardware addresses available. It assigns one hardware address to each port on its CSMA/CD and FDDI Network Interface Cards. It uses a standard scheme to do this.

When installing from a PATHWORKS load host, you must specify the hardware address of the port that will receive the downline load.

C.4.1 Finding the Port Hardware Address   The first 11 digits of all port hardware addresses on a DECNIS are the same. The last digit depends on the type of Network Interface Card, its slot number, and the port number on the card. Table C–1 shows how the last digit is assigned.

Table C–1 Hardware Address Assignment

Card	Last Digit
L601	The number of the slot in which the card is inserted
L602	Assigned as follows:

If slot number is:	3	4	5	6	7	8	9
The last digit for Port 0 is:	3	4	5	6	7	8	9
The last digit for Port 1 is:	A	B	C	D	E	F	2

Card	Last Digit
F621	DECNIS 600: the higher number of the two slots DECNIS 500: the lower number of the two slots

C.4.2 Procedure   To find the correct hardware address, follow these steps:

1. Take the first 11 digits from the hardware address on the DECNIS Processor Card label. Ignore the last digit (always zero on the label).

2. Decide which port on which card will be used to receive the downline load.

3. Use Table C–1 to find the correct last digit for the port.

Table C–2   Examples of Hardware Address Assignment on a DECNIS 600

Address on Processor Card Label	Card	Slot	Port	Hardware Address
08-00-2B-C3-66-12-50	L601	5	0	08-00-2B-C3-66-12-55
08-00-2B-C3-66-12-50	L602	5	1	08-00-2B-C3-66-12-5C
08-00-2B-D4-76-22-80	F621	6 and 7	0	08-00-2B-D4-76-22-87

C.5 Example

In this example, the following information is available:

Installation directory	C:\DECROU
Load client name	SOUTH1
DECnet address	44.6
Hardware address	08-00-2B-0A-11-33
Combined file	DECROU\CLIENTS\SOUTH1\SYSTEM

Example Commands

```
C:> NCP
NCP> DEFINE NODE 44.6 NAME SOUTH1
NCP> DEFINE NODE SOUTH1 HARDWARE-ADDRESS 08-00-2B-0A-11-33
NCP> DEFINE NODE SOUTH1 LOAD-FILE DECROU\CLIENTS\SOUTH1\SYSTEM
NCP> DEFINE NODE SOUTH1 DUMP-FILE DECROU\CLIENTS\SOUTH1\DUMP
NCP> SET NODE SOUTH1 ALL
NCP> EXIT
```

D

MOP Loading to a DECNIS from a PATHWORKS V4.1 Load Host

This appendix describes how to set up MOP loading to a DECNIS from a PC running PATHWORKS for DOS, Version 4.1 (PATHWORKS V4.1 PC).

Restrictions • Although you can load to a DECNIS from a PATHWORKS V4.1 PC, you cannot configure the DECNIS software on a PATHWORKS V4.1 PC.

• You can only load a combined image/CMIP/profile file from a PATHWORKS V4.1 PC. You cannot load the separate image, CMIP file and profile files.

D.1 Procedure

Follow these steps:

1. Install and configure the DECNIS software on another load host. The load host can be any of the following:

   • A PC. Refer to Chapter 2 to Chapter 6.

   • A DECnet/OSI system. Refer to the manual _DECNIS Installation and Configuration for OpenVMS and Digital UNIX._

   Note In the load-host configurator, you must select `Nonvolatile memory for both CMIP and image` for the type of loading.

2. In the DECNIS configurator, create a combined file.

3. Copy the combined file to the PATHWORKS V4.1 PC.

4. On the PATHWORKS V4.1 PC, run the program MOPCONF.EXE to enter MOP loading information.

5. A menu of options is displayed. Select Option 2, `Add a node`.

6. MOPCONF.EXE will now ask for information about the DECNIS. Enter the information shown in the following table:

Information	Enter the following:
Device type	Enter 0, to indicate that you want to enter a device type not in the default list. Then, enter one of the following: NIS500 if loading a DECNIS 500 NIS600 if loading a DECNIS 600
DECnet node name	DECnet Phase IV node name of the DECNIS.
DECnet node address	DECnet Phase IV address of the DECNIS.
Ethernet address	Hardware address of the port on the DECNIS that will receive the downline load. See Section C.4 for details.
Load file name	The specification of the combined file that you copied to the PC.
Dump file name	The name of the file to receive dumps from the DECNIS.

7. When you have entered all the information, return to the menu of options, and select 5 to exit.

8. Run MOP.EXE. This program functions as a server which waits for load (or dump) requests. When you run MOP.EXE, it displays the message:

```
Waiting for LOAD or DUMP request
```

Refer to the *DECnet Network Management Guide* in the PATHWORKS for DOS Version 4.1 manual set for full details of MOPCONF.EXE and MOP.

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