DEC Network Integration Server

Installation and Configuration for OpenVMS and Digital UNIX

Order Number: AA-Q61BD-TE

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Preface

This manual explains how to:

- Install the software for the DEC™ Network Integration Server on OpenVMS™ and Digital™ UNIX® systems. (Digital UNIX was formerly called DEC OSF/1.)

- Configure OpenVMS and Digital UNIX systems so that they can downline load the DECNIS software.

- Start the DECNIS text-based configurator on OpenVMS and Digital UNIX load hosts.

The DEC Network Integration Server is referred to throughout this manual as the DECNIS.

Audience

This manual is intended for network managers who understand and have some experience of:

- Local Area Networks (LANs)

- Wide Area Networks (WANs)

- OpenVMS (if using an OpenVMS load host)

- Digital UNIX (if using a Digital UNIX load host)

Associated Documentation

Product Documentation

- *DEC Network Integration Server Introduction and Glossary*

- *DEC Network Integration Server Configuration and Loading*

- *DEC Network Integration Server Management*

- *DEC Network Integration Server Problem Solving*

This is only available on line through the Bookreader™.

- *DEC Network Integration Server Event Messages* (supplied on line)
- *DEC Network Integration Server Release Notes* (supplied on line)

Hardware Documentation

The following documents are supplied with the DECNIS hardware:

- *Installation and Service Manual*
- *Configuration* card

The following documents are supplied with each Network Interface Card:

- *Cabling Instructions and Specifications* card
- *Problem Solving* card
- *Configuration* card

Related Documentation

- *DEC Network Integration Server Configuration and Management from PCs*

  This manual describes how to install and configure DECNIS software on an IBM®-compatible Personal Computer running MS–DOS®.

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

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

- Network management documentation for the load-host operating system you are using.

- RFCs (for IP routing)

  RFCs are the working notes for the Internet research and development community. These notes are available in a three-volume set, the *DDN Protocol Handbook*, which can be ordered from the following address:

  Network Solutions, Inc.
  Attn: InterNIC Registration Service
  505 Huntmar Park Drive
  Herndon, VA 22070, USA
  Tel. 1-800-444-4345 or 619-455-4600

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.
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	This indicates that you should substitute the node name of the DECNIS. If you are using a DECdns namespace or a local namespace, enter the name registered in the namespace.
Prompts	The following prompts precede commands that you enter:
	For OpenVMS: $ For Digital UNIX: # For NCL: NCL> For NCP: NCP>

1
Introduction

This manual describes how to do the following on OpenVMS and Digital UNIX load hosts.

- Install DECNIS software.

- Run the load-host configurator to set up downline loading information.

- Start the DECNIS text-based configurator. You use this configurator to set up your DECNIS as a bridge/router.

In addition to reading this manual, you will also need to refer to the manual *DECNIS Configuration and Loading*, which gives more detailed information on running the DECNIS text-based configurator and on loading the DECNIS hardware unit.

Note

You cannot run the clearVISN DECNIS configurator on OpenVMS or Digital UNIX load hosts.

1.1 Summary of Steps Required

In order to set up your DECNIS hardware unit as a working system, carry out the steps shown in Table 1–1.

Table 1–1 Steps to Set Up the DECNIS

Step	Action	Refer to:
1	Install the DECNIS software	Chapter 2 and Chapter 5

Table 1–1 (Cont.)   Steps to Set Up the DECNIS

Step	Action	Refer to:
2	Run the load-host configurator and enter the required information	Chapter 3 and Chapter 6
3	Run the DECNIS text-based configurator and enter the required information	Chapter 4, Chapter 8 and the manual *DECNIS Configuration and Loading*
4	Create the DECNIS configuration files	*DECNIS Configuration and Loading*
5	Downline load the configured software onto the DECNIS hardware unit	*DECNIS Configuration and Loading*

Part I

OpenVMS Load Hosts: Installation and Configuration

This part describes how to do the following on OpenVMS load hosts:

- Install the DECNIS software.
- Run the load-host configurator.
- Start the DECNIS text-based configurator.

It contains the following chapters:

- Chapter 2 describes how to install the DECNIS software on OpenVMS load hosts.
- Chapter 3 describes how to use the load-host configurator to configure OpenVMS load hosts for downline loading to the DECNIS.
- Chapter 4 describes how to start the DECNIS text-based configurator on OpenVMS load hosts.

2

Installing: OpenVMS Load Hosts

This chapter describes how to install the DECNIS software on OpenVMS load hosts.

2.1 OpenVMS Background Information

The following table gives information needed before you install the software.

Item	Value/Description
Prerequisite software	OpenVMS V6.2 or later
	OpenVMS VAX systems: DECnet™/OSI® for OpenVMS VAX V6.2 or later.
	OpenVMS Alpha systems: DECnet/OSI for OpenVMS Alpha V6.2 or later
Prerequisite hardware	OpenVMS VAX systems: VT220™ or later terminal, or VAXstation™ running DECwindows™
	OpenVMS Alpha systems: VT220 or later terminal, or Alpha Workstation or AlphaStation running DECwindows
	DECNIS hardware unit
Kit description	OpenVMS VAX: 1 TK50 OpenVMS Alpha: 1 CD-ROM
Use of multiple load hosts	Install the kit on at least 2 load hosts so that a backup host is available
Required privileges	Account with SYSTEM privileges
Disk space requirements	OpenVMS VAX: 150,000 blocks (+ up to 64,000 blocks per dump) OpenVMS Alpha: 105,000 blocks (+ up to 64,000 blocks per dump)
Time required for installation	30 minutes
Stopping the installation	Enter Ctrl/Y
Backup procedures	Back up system before installing the software

2.1.1 Setting System Parameters

On OpenVMS VAX load hosts, you should set system parameters as follows:

- VIRTUALPAGECNT must be at least 56000.

- It is recommended that GBLPAGES and PGFLQUOTA be increased from the minimum DECnet/OSI values, as compilation will then be faster.

On OpenVMS Alpha load hosts, you do not need to make any changes to the minimum values for system parameters or process quotas.

2.2 OpenVMS Installation Procedure

To install the DECNIS software, do the following:

Step	Action
1	Mount the DECNIS kit on a suitable device
2	Issue the following command:
	On OpenVMS VAX hosts:
	`$ @SYS$UPDATE:VMSINSTAL NIS040 device-name OPTIONS N`
	On OpenVMS Alpha hosts:
	`$ @SYS$UPDATE:VMSINSTAL NIS040 device-name:[KITS] OPTIONS N`
	where *device-name* is the device where the kit is mounted.
3	Select the option you require from the Release Notes Menu
4	Read the Release Notes before using the product

2.3 OpenVMS Online Documentation

Table 2–1 lists the online information contained in the documentation kit. You can edit and print the text files if you wish.

Table 2–1 Location of Online Information: OpenVMS

Item	Location
X.25 Network information	SYS$HELP:FCNS$NI.TXT
Event messages	SYS$HELP:NIS$EVENTS.TXT
Release notes	SYS$HELP:NIS040.RELEASE_NOTES
DECNIS Problem Solving manual	NIS$PROBLEM_SOLVING.DECW$BOOK in SYS$COMMON:[DECW$BOOK]
Bookshelf for *DECNIS Problem Solving* manual	NIS$PROBLEM_SOLVING.DECW$BOOKSHELF in SYS$COMMON:[DECW$BOOK]
Example NCL script files	SYS$EXAMPLES:*.NCL

2.3.1 DECNIS Problem Solving Manual

The DECNIS installation automatically does the following:

- Installs the online *DECNIS Problem Solving* manual and its bookshelf, as shown in Table 2–1.

- Edits the file LIBRARY.DECW$BOOKSHELF to include the contents of NIS$PROBLEM_SOLVING.DECW$BOOKSHELF. On a standard OpenVMS system, LIBRARY.DECW$BOOKSHELF is in the DECW$BOOK directory.

2.4 The DECNIS V4.0 Software Image

The DECNIS software image, NIS040.SYS, 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

where *version-number* is the version number of the DECNIS software.

Console Supported with MPC-II/MPC-III Only

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

2.4.1 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...	Part Number of MPC
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

2.4.2 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 2.4.2.1 and Section 2.4.2.2 describe how to do this. Refer to the *DECNIS Management* manual for a detailed description of MOD_FLSH.

2.4.2.1 Load Host Loading or Part Nonvolatile Memory Loading

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

1. Enter the following command to define MOD_FLSH as a foreign command:

    ```
    $ MOD_FLSH :== $ SYS$SYSTEM:MOD_FLSH.EXE
    ```

    This equates MOD_FLSH to the command RUN SYS$SYSTEM:MOD_FLSH.

2. Now, enter the following command to run MOD_FLSH:

    ```
    $ MOD_FLSH NIS040.SYS
    ```

3. The display will show the images, with their index numbers. The MPC-II/III image (NIS_*version-number*B) is index 1; the MPC-I image (NIS_*version-number*) is index 2.

4. Enter the following command:

```
delete n
```

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

2.4.2.2 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 2.4.2.1. 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, as described in the manual *DECNIS Configuration and Loading*.

2. Enter the following command:

```
$ MOD_FLSH :== $ SYS$SYSTEM:MOD_FLSH.EXE
```

3. Now, run MOD_FLSH, giving the name of the combined file:

```
$ MOD_FLSH NIS040_client-name.SYS
```

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

4. Follow steps 3 and 4 in Section 2.4.2.1.

2.5 After Installation

This section describes postinstallation tasks.

2.5.1 Registering the DECNIS in a Namespace

If you specified the use of a naming service in the load-host configurator, the configurator will attempt to register the DECNIS node in either the local namespace or the DECdns namespace. This section describes how you determine which namespace it will use.

By default, the load-host configurator will attempt to register the DECNIS in the local namespace, even if DECdns is listed as the primary naming service.

To override the default and register the DECNIS in DECdns, complete the following steps **before** you run either configurator:

1. Create a decnet_register initialization command file, and define the environment variable DECNET_REGISTER_INIT to point to its file name.

2. Insert the following command in the file:

```
SET DEFAULT DIRECTORY_SERVICE DECdns
```

For more information about DECNET_REGISTER initialization files, refer to the online help provided with decnet_register.

2.5.2 Configuring a DECNIS for the First Time

If you are configuring a DECNIS for the first time, you need to carry out the following tasks:

1. Run the load-host configurator, as described in Chapter 3.

2. Run the DECNIS text-based configurator, as described in Chapter 4.

3. Create a configuration load file, and load the DECNIS, as described in the manual *DECNIS Configuration and Loading*.

4. Assign a name to the DECNIS, as described in Section 2.5.2.1.

2.5.2.1 Assigning a Name to the 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) or local namespace name.

2.5.3 Updating a Previously Installed DECNIS

If you have previously set up DECNIS systems using the load-host configurator, you must update these systems so they can use the current version of DECNIS software. You need to do this even if you do not want to change your configuration.

Procedure

After you have installed a new version of the DECNIS software, follow these steps:

1. Run the automatic Update procedure, as described in Section 3.9.

2. Start the DECNIS text-based configurator, as described in Chapter 4.

3. Select `Modify an existing configuration` from the Main Menu.

4. The screen shows a list of load client names. Select the DECNIS that you are updating.

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

6. Select `Create an NCL Script`. This will create 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.

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

9. Reload the DECNIS systems, as described in the manual *DECNIS Configuration and Loading*.

2.5.4 Verifying the Installation

To verify the installation, run the installation verification procedure. Enter:

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

2.5.5 Deleting Installed Files

To delete the files installed by the installation procedure, enter:

```
$ @SYS$MANAGER:NIS$DEINSTALL.COM
```

2.5.6 Checking Your Terminal Setup

In order to run the load-host configurator and the DECNIS text-based configurator, you must use one of the types of terminal listed in Section 2.5.6.1, and set up the terminal as described in Section 2.5.6.2.

2.5.6.1 Type of Terminal

You can run the configurators on the following types of terminal:

- A VT220 (or later) terminal
- A VAXstation terminal window

2.5.6.2 Terminal Setup

You must set up your terminal as follows:

- Set the tab stops on your terminal or terminal window to 8-column tabs.
- Set the terminal parameter NEW LINE to NO NEW LINE.
- Issue the terminal command, SET TERM/INQUIRE.

2.5.7 Reporting Problems

For instructions on reporting problems to Digital, refer to the manual *DECNIS Problem Solving*.

2.6 VAXcluster Load Hosts

To set up several nodes in a VAXcluster™ as load hosts, follow these steps:

1. Install the DECNIS software on a node in the VAXcluster, as described in Section 2.2.

2. Run the program NIS$PROVIDE_NCL.EXE on all of the other nodes in the VAXcluster. Enter the following command on each node:

   ```
   $ RUN SYS$SYSTEM:NIS$PROVIDE_NCL.EXE
   ```

   This program enables a system to use the latest version of the NCL command parsing tables which have been installed. The program is automatically run by the DECNIS installation procedure on the node on which you install the DECNIS software. However, you must run the program separately on the other nodes in a VAXcluster on which NCL is going to be used to manage the DECNIS.

3. Run the load-host configurator on one node within the VAXcluster,

4. On the other VAXcluster nodes that will be used as load hosts, enter the command:

   ```
   $ @SYS$MANAGER:NIS$HOST_CONFIG RESTORE
   ```

   This creates loading information for the DECNIS on each of these nodes.

5. Run the DECNIS text-based configurator on one node within the VAXcluster and configure the DECNIS.

2.7 Installing on Multiple Load Hosts

You should install the DECNIS software on at least two load hosts, so that a backup load host is available.

3

Using the Load-Host Configurator: OpenVMS Load Hosts

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

3.1 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 load host to downline load DECNIS software and configuration files onto DECNIS hardware, and to receive upline dumps.

- Delete, modify, list, update and restore load information.

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

3.1.1 Definition of a Load Host

A load host is a system which can downline load the configured DECNIS software to the DECNIS hardware in response to a load request.

3.1.2 Load Protocol

DECnet/OSI for OpenVMS load hosts use MOP (Maintenance Operations Protocol) for loading and dumping.

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

3.2 Starting the Load-Host Configurator

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

1. Log into any account which has OPER and SYSPRV privileges.

2. Enter the command:

```
$ @SYS$MANAGER:NIS$HOST_CONFIG
```

3.3 Menu Options

When you run the load-host configurator, it displays a menu with these options:

- `Add a router`

  To enter DECNIS load information for the first time.

- `Delete a router`

  To delete loading information for a DECNIS.

- `Modify a router`

  To modify load information previously entered using the load-host configurator.

- `List a router`

  To display a list of all DECNIS systems configured by the load-host configurator.

- `Restore a router`

  To recreate loading and dumping information for a DECNIS.

- `Update a router`

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

3.4 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 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 router to load to.

3. Enter load information.

3.5 Load Information

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

3.5.1 Load Client Name

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

3.5.1.1 Finding the Load Client Name

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

- The name must be unique to this router on the network.

- The maximum length of the name is 32 characters.

3.5.2 Hardware Address

This is the hardware address of the DECNIS. The format is six pairs of hexadecimal digits, separated by hyphens, with a 0 (zero) as the final digit. For example:

08-00-2B-02-AA-20

3.5.2.1 Finding the Hardware Address

The address is printed on the label on the Processor Card on your DECNIS system. Enter the address just as it is on the label, including the 0.

3.5.3 MOP Circuit

This is a circuit defined specifically for downline loading. A MOP circuit is automatically created during DECnet/OSI installation.

3.5.3.1 Finding the MOP Circuit Name

To find the MOP circuit name, follow these steps:

1. Enter the following NCL command:

   ```
   NCL> SHOW MOP CIRCUIT * ALL IDENTIFIER
   ```

2. Use the name, or one of the names, displayed.

3.5.3.2 Requirement for MOP Circuit

The MOP circuit must exist before you enter it. The load-host configurator will check that it does exist. If it does not exist, the configurator will not let you continue.

3.5.4 Phase IV Address

Enter a DECnet Phase IV address for the DECNIS if you want the DECNIS to communicate with DECnet Phase IV systems.

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

3.5.5 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
```

3.5.5.1 Definition of Nonvolatile (Flash) Memory

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.

3.5.5.2 Advantages of Nonvolatile Memory Loading

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.

3.5.6 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:

  SYS$COMMON:[MOM$SYSTEM]NIS_*load-client-name*.DMP

It is important to check that there is enough disk space on your load host to receive dumps. The table in Section 2.1 shows the amount of disk space required for dumps.

3.5.7 Use of DECdns and the Local Namespace by the Configurators

The load-host configurator asks the question:

```
You can choose whether or not the configurators use
information from a naming service to set up addresses.

Only select Yes if a DECdns name server is reachable from
this load host, or you have a local namespace.

Do you wish a naming service to be used?   No   Yes
```

This section explains how you decide what to answer.

3.5.7.1 Background: the DECNIS and the DECnet/OSI Naming Services

The DECNIS does not use naming service lookups to find the location of the DECnet systems to which it sends messages (for example, event sinks). Instead, it uses NCL commands in the master NCL script file generated by the DECNIS configurator.

These NCL commands set up a complete specification of each DECnet system the DECNIS sends messages to. The commands are CREATE SESSION CONTROL KNOWN TOWER commands.

3.5.7.2 Generating KNOWN TOWER Commands

The question on the screen is asking you to name the method the configurator should use to generate these commands.

There are two alternative methods:

- If you choose Yes, the DECNIS text-based configurator uses DECdns or local namespace lookups to generate the commands.

  In this case, you must supply the full node name or node synonym for the DECNIS. The configurator then extracts addressing information from the namespace entry, and uses this information to generate the required commands.

- If you choose No, the DECNIS text-based configurator uses addressing information you supply.

3.5.8 Node Name (Naming Service Users Only)

If you choose to use a naming service, you must enter the full node name of the DECNIS system. The name you specify must conform to DECdns naming conventions. For details about the syntax of DECdns names, refer to the DECdns manual for your load host.

3.5.9 Node Synonym (Naming Service Users Only)

This is an alternative node name for the DECNIS. For convenience, you may use the Phase IV node name.

The node synonym is optional.

3.6 Delete a Router

When you select Delete a router, the screen 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.

3.6.1 Effect of Deleting

If you delete a DECNIS, the load-host configurator renames the DECNIS configuration files, as follows:

- The master NCL script file for the deleted DECNIS is renamed:

  SYS$COMMON:[MOM$SYSTEM]NIS_*client-name*.NCL_OLD

- The CMIP file for the deleted DECNIS is renamed:

  SYS$COMMON:[MOM$SYSTEM]NIS_*client-name*.CMIP_OLD

- The data file for the deleted DECNIS is renamed:

SYS$COMMON:[MOM$SYSTEM]NIS_*client-name*.DAT_OLD

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

Example

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

NIS_EASTERN.NCL

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

NIS_EASTERN.NCL_OLD

3.7 Modify a Router

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

3.7.1 Information that Cannot Be Modified

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

3.7.2 Running the DECNIS Configurator After Modifying

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

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

3.7.3 Modifying the 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:

1. Run the DECNIS text-based configurator.

2. Go to the `Create NCL Script` section, and create an NCL script file.

3. In the same section, create a new CMIP file or combined file.

3.7.3.1 Results of Changing Back to Load Host Loading

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

3.8 Restore a Router

The Restore option reissues the NCL commands which set up MOP loading information.

Restore is useful if the permanent information is lost or deleted. You also use it when setting up VAXcluster nodes as load hosts, as described in Section 2.6.

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 the DECNIS systems set up by the load-host configurator.

3.8.1 Automatic Restore

To use automatic Restore, enter the following:

```
$ @SYS$MANAGER:NIS$HOST_CONFIG RESTORE
```

3.9 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.

3.9.1 Automatic Update

To use automatic Update, enter the update command. When you start this procedure, you can also specify the type of loading for the updated DECNIS systems, as shown in Section 3.9.1.1 to Section 3.9.1.3. The default type of loading is full nonvolatile memory loading.

Note that if you change the type of loading from the one previously specified, you must follow the instructions in Section 3.7.3.

3.9.1.1 Update Command: Full Nonvolatile Memory Loading

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

```
$ @SYS$MANAGER:NIS$HOST_CONFIG UPDATE
```

You can achieve the same result by entering:

```
$ @SYS$MANAGER:NIS$HOST_CONFIG UPDATE FLASH_FULL
```

3.9.1.2 Update Command: Part Nonvolatile Memory Loading

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, enter the following:

```
$ @SYS$MANAGER:NIS$HOST_CONFIG UPDATE FLASH_PART
```

3.9.1.3 Update Command: 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, enter the following.

```
$ @SYS$MANAGER:NIS$HOST_CONFIG UPDATE NETWORK
```

3.10 Getting Help in the Load-Host Configurator

You can get online help at any time while running the configurator by pressing Help. Help in the load-host configurator works in a similar way to help in the DECNIS text-based configurator. See Section 4.5 for details.

3.11 Errors when Running the Load-Host Configurator

If there are any errors when you are running the load-host configurator, they will be recorded in the following log file:

MOM$SYSTEM:NIS_DECNIS.LOG

3.12 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 select a menu option, 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:

SYS$COMMON:[MOM$SYSTEM]NIS_HOST_CONFIG.DAT

3.12.1 Saving the Load-Host Data File

Each time you run the load-host configurator and add, modify or delete information, the configurator 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.

3.13 What the Load-Host Configurator Does with 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, as described in Section 3.12.

- Issues NCL commands to set up load details, and enters the commands in permanent configuration files.

- If you have entered naming service information during load-host configuration, registers the DECNIS in the local namespace or the DECdns namespace.

  Section 2.5.1 describes how the load-host configurator decides whether to register the DECNIS in the local or DECdns namespace.

4

Starting the DECNIS Configurator: OpenVMS Load Hosts

4.1 Introduction to the DECNIS Configurator

The DECNIS text-based configurator is a utility supplied with the DECNIS. You use the DECNIS text-based configurator to enter the information needed for the DECNIS to communicate with other systems. For example, you use it to enter information about addresses, protocols, and circuits.

This chapter describes how to start the configurator, the keys you can use, and how to get online help. For more detailed information, see the manual *DECNIS Configuration and Loading*.

4.2 Before You Start

Before you start the DECNIS text-based configurator, make sure that you do the following:

1. Check Section 2.5.6. This gives the terminal settings required to run both the load-host configurator and the DECNIS text-based configurator.

2. Run the load-host configurator, and set up load information for the DECNIS you want to configure.

4.3 How to Start

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

1. Log into any account which has OPER and SYSPRV privileges.

2. Enter the command:

   ```
   $ @SYS$MANAGER:NIS$DECNIS_CONFIG
   ```

4.4 Configurator Keys

Table 4–1 shows the keys you can use to enter and change information, and to move through the configurator sections.

Table 4–1 OpenVMS 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 in a field
Right Arrow	Move the cursor to the right in a field
Enter or Return	Enter the option you have chosen
Help or PF2	Get help on a field or section
F10	Leave Help and go back to entering data
F8	Leave the configurator without saving any data
Prev Screen	Go to the previous data entry screen in a section
Next Screen	Go to the next data entry screen in a section
Ctrl/A or F14	Toggle between insert and overstrike when typing data
Ctrl/U or Remove	Remove all text in a field
Ctrl/W	Refresh the screen
<X	Delete the character to the left of the cursor
F7	Move cursor to the previous column (on screens with two columns)

4.5 Online Help

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

4.5.1 How to Get Online Help

To get help in the load-host configurator or the DECNIS text-based configurator, press Help.

4.5.2 Help on Fields and Menu Choices

If you press Help 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 Help again, another screen appears with more information. If there are several screens of information, you can page through them by pressing Next Screen or Prev Screen .

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.

4.5.3 Help on the Configurator

You can get help on the configurator (for example, the keys you can use) by pressing Help while you are on any other Help screen.

4.5.4 Keys to Get Help

Table 4–2 lists the keys you can use to get Help, or to leave Help.

Table 4–2 Keys Used to Get Help

Pressing this key...	From this screen...	Gives you this...
Help or PF2	Data entry screen	3-line Help
Help or PF2	Data entry screen with 3-line Help displayed	Full Parameter Help
Help or PF2	Full screen of help	Procedures Help menu
Next Screen	Full screen of help, Procedures Topic	Next screen of information
Prev Screen	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

Part II

Digital UNIX Load Hosts: Installation and Configuration

This part describes how to do the following on Digital UNIX load hosts:

- Install the DECNIS software.

- Run the load-host configurator.

- Start the DECNIS text-based configurator.

It contains the following chapters:

- Chapter 5 describes how to install the DECNIS software on Digital UNIX load hosts.

- Chapter 6 describes how to configure Digital UNIX load hosts for downline loading to the DECNIS.

- Chapter 7 describes additional steps needed to set up Digital UNIX load hosts for BOOTP loading.

- Chapter 8 describes how to start the DECNIS text-based configurator on Digital UNIX load hosts.

5

Installing: Digital UNIX Load Hosts

This chapter describes how to install the DECNIS software.

5.1 Digital UNIX Background Information

The following table gives information needed before you install the software on Digital UNIX load hosts.

Item	Value/Description
Prerequisite software	Digital UNIX V3.1 (or later). For BOOTP/TFTP loading, subset OSFCLINET031
	DECnet/OSI for Digital UNIX AXP™V3.1 (or later), with the following subsets: DNABASE031 (DECnet /OSI base components), DNAMOP031 (DECnet/OSI MOP Utilities) and DNANETMAN031 (DECnet/OSI Network Management)
Prerequisite hardware	VT220 or later terminal, or Alpha Workstation or AlphaStation running DECwindows
	DECNIS hardware unit
Kit description	1 CD-ROM
Use of multiple load hosts	Install the kit on at least 2 load hosts so that a backup host is available
Required privileges	Superuser account
Disk space required	22,000 Kbytes + up to 32,000 Kbytes per dump
Time required for installation	10 minutes
Backup procedures	Back up system before installing the software

5.2 Digital UNIX Installation Procedure

To install the DECNIS software on Digital UNIX load hosts, do the following:

Step	Action

1	Issue the following commands:
	
	`# cd /`
	`# setld -l /dev/device-name`
	
	where *device-name* is the device where the kit is mounted

2	Read the Release Notes before using the product

5.3 Digital UNIX Online Documentation

Table 5–1 lists the online information contained in the documentation kit. You can edit and print the text files if you wish.

Table 5–1   Location of Online Information: Digital UNIX

Item	Location
X.25 Network information	/usr/lib/dnet/fcns_ni.txt
Event messages	/usr/lib/dnet/nis_event.txt
Release Notes	/usr/lib/dnet/nis040.release_notes
DECNIS Problem Solving manual	/usr/lib/dxbook/decnispsg.decw_book
Bookshelf for *DECNIS Problem Solving*	/usr/lib/dxbook/decnispsg.decw_bookshelf
Example NCL script files	/usr/lib/dnet/*.ncl

5.3.1 DECNIS Problem Solving Manual

The installation automatically installs the online *DECNIS Problem Solving* manual, as shown in Table 5–1.

To access this manual using the Bookreader, you need to edit the file /usr /lib/dxbook/library.decw_bookshelf to include the contents of decnispsg.decw_ bookshelf.

5.4 The DECNIS V4.0 Software Images

The DECNIS software image, NIS040.SYS, 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

where *version-number* is the version number of the DECNIS software.

Console Supported with MPC–II/MPC–III Only

Note that the DECNIS console is supported only if either the MPC–II or MPC–III management processor card is installed. Refer to Table 5–2 for the part numbers of the management processor cards.

5.4.1 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 5–2:

Table 5–2 Images and Management Processor Cards

This internal image is used...	If this card is installed...	Part Number of MPC
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

5.4.2 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 2.4.2.1 and Section 2.4.2.2 describe how to do this. For a detailed description of MOD_FLSH, refer to the *DECNIS Management* manual.

5.4.2.1 Load Host Loading or Part Nonvolatile Memory Loading

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

1. Run the program MOD_FLSH:

   ```
   # /usr/lib/dnet/mod_flsh nis040.sys
   ```

2. The display will show the images, with their index numbers. The MPC-II/III image (NIS_*version-number*B) is index 1; the MPC-I image (NIS_*version-number*) is index 2.

3. Enter the following command:

   ```
   delete n
   ```

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

5.4.2.2 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 5.4.2.1. 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 the DECNIS, create a combined file. Refer to the manual *DECNIS Configuration and Loading* for details.

2. Run the program MOD_FLSH, giving the name of the combined file:

   ```
   # /usr/lib/dnet/mod_flsh nis040client-name.sys
   ```

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

3. Follow steps 2 and 3 in Section 5.4.2.1.

5.5 After Installation

This section describes postinstallation tasks.

5.5.1 Registering the DECNIS in DECdns

If you specified the use of a naming service in the load-host configurator, the DECNIS text-based configurator will attempt to register the DECNIS node in either the local namespace or the DECdns namespace. This section describes how you determine which namespace it will use.

By default, the load-host configurator will attempt to register the DECNIS node name in the local namespace, even if DECdns is listed as the primary naming service.

To override the default and register the DECNIS in DECdns, complete the following steps **before** you run either configurator:

1. Create a decnet_register initialization command file, and define the environment variable DECNET_REGISTER_INIT to point to its file name.

2. Insert the following command in the file:

   ```
   SET DEFAULT DIRECTORY_SERVICE DECdns
   ```

For more information about decnet_register initialization files, refer to the online help provided with decnet_register.

5.5.2 Configuring a DECNIS for the First Time

If you are configuring a DECNIS for the first time, you need to carry out the following tasks:

1. If you plan to use BOOTP/TFTP for loading, check that the BOOTP and the TFTP daemons are started. Refer to Section 7.2.1 for details.

2. Run the load-host configurator, as described in Chapter 6.

3. Run the DECNIS text-based configurator, as described in Chapter 8.

4. Create a configuration load file, and load the DECNIS, as described in the manual *DECNIS Configuration and Loading*.

5. Assign a name to the DECNIS, as described in Section 2.5.2.1.

5.5.3 Updating a Previously Installed DECNIS

If you have previously set up DECNIS systems using the load-host configurator, you must update these systems so they can use the current version of DECNIS software. You need to do this even if you do not want to change your configuration.

Procedure

After you have installed the new version of the software, follow these steps:

1. Run the automatic Update procedure, as described in Section 6.10.

2. Start the DECNIS text-based configurator, as described in Chapter 8.

3. Select `Modify an existing configuration` from the Main Menu.

4. The screen shows a list of load client names. Select the DECNIS that you are updating.

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

6. Select `Create an NCL Script`. This will create 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.

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 the manual *DECNIS Configuration and Loading*.

5.5.4 Verifying the Installation

To verify the installation, enter the following:

```
# setld -v NIANIS400
```

5.5.5 Deleting Installed Files

To delete the files installed by the installation procedure, enter:

```
# setld -d NIANIS400
```

5.5.6 Checking Your Terminal Setup

In order to run the load-host configurator and the DECNIS text-based configurator, you must use one of the types of terminal listed in Section 5.5.6.1, and set up the terminal as described in Section 5.5.6.2.

5.5.6.1 Type of Terminal

You can run the configurators on the following types of terminal:

- A VT220 (or later) terminal

- A terminal window on an Alpha AXP workstation

5.5.6.2 Terminal Setup

Set up your terminal as follows:

- Set the tab stops on your terminal or terminal window to 8-column tabs.

- If you are using a terminal window, set it up as follows:

  1. On the terminal window menu bar, select **Custom**.

  2. Select **General**.

     Set the **Terminal ID** to **VT200**™ or above, or to **DECterm**™ **ID**.

     If you set **Terminal ID** to **DECterm ID**, then check that this is VT200 or above.

  3. Set the **Mode** to **VT300**™ **Mode 7-bit controls**.

5.5.7 Reporting Problems

For instructions on reporting problems to Digital, refer to the manual *DECNIS Problem Solving*.

6

Using the Load-Host Configurator: Digital UNIX Load Hosts

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

6.1 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 load host to downline load DECNIS software and configuration files onto DECNIS hardware, and to receive upline dumps.

- Delete, modify, list, update and restore load information.

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

6.1.1 Definition of a Load Host

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

6.1.2 Load Protocols

Digital UNIX load hosts can use MOP (Maintenance Operations Protocol), BOOTP/TFTP, or both for loading and dumping.

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

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

6.2 Before You Begin

If you plan to use BOOTP/TFTP for loading, check that the BOOTP and the TFTP daemons are started. Refer to Section 7.2.1 for details.

6.3 Starting the Load-Host Configurator

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

1. Log in as a superuser.
2. Enter the command:

   ```
   # /usr/lib/dnet/nis_host_config
   ```

6.4 Load-Host Configurator Menu Options

When you run the load-host configurator, it displays a menu with these options:

- `Add a router`

  To set up DECNIS load information for the first time.

- `Delete a router`

  To delete load information for a DECNIS.

- `Modify a router`

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

- `List a router`

  To display a list of all DECNIS systems configured by the load-host configurator.

- `Restore a router`

  To recreate the loading and dumping information for a DECNIS, by reissuing NCL commands, by recreating the file etc/bootptab, or both.

- `Update a router`

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

6.5 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. If your load host can run BOOTP, the screen displays:

   ```
   Select the method to be used for downline loading:

   MOP
   BOOTP
   Both MOP and BOOTP
   ```

   Choose the method you want to use.

   Note that Digital UNIX load hosts can only use BOOTP if the subset
   OSFINET12 or later is installed. If the appropriate subset is not installed,
   you go directly to step 3.

3. The screen displays:

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

   Return to Main Menu
   DECNIS 600
   DECNIS 500
   ```

   Select the type of DECNIS to load to.

4. Enter load information.

6.6 Load Information

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

6.6.1 Load Client Name

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

6.6.1.1 Finding the Load Client Name

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

- The name must be unique to this router on the network.

- The maximum length of the name is 32 characters.

6.6.2 Hardware Address

This is the hardware address of the DECNIS. The format is six pairs of hexadecimal digits, separated by hyphens, with a 0 (zero) as the final digit. For example:

08-00-2B-02-AA-20

6.6.2.1 Finding the Hardware Address

The address is printed on the label on the Processor Card on your DECNIS system. Enter the address just as it is on the label, including the 0.

6.6.3 MOP Circuit (MOP Loading Only)

This is a circuit defined specifically for downline loading. A MOP circuit is automatically created during DECnet/OSI installation.

6.6.3.1 Finding the MOP Circuit Name

To find the MOP circuit name, follow these steps:

1. Enter the following NCL command:

   ```
   NCL> SHOW MOP CIRCUIT * ALL IDENTIFIER
   ```

2. Use the name, or one of the names, displayed.

6.6.3.2 Requirement for MOP Circuit

The MOP circuit must exist before you enter it. The load-host configurator will check that it does exist. If it does not exist, the configurator will not let you continue.

6.6.4 IP Address (BOOTP Loading Only)

If you use BOOTP for loading, you must supply an IP address for the DECNIS.

Format

The format of the IP address is four decimal integers, separated by decimal points. For example, 24.45.21.8.

6.6.5 Phase IV Address

Enter a DECnet Phase IV address for the DECNIS if you want the DECNIS to communicate with DECnet Phase IV systems.

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

6.6.6 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
```

6.6.6.1 Definition of Nonvolatile (Flash) Memory

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

Nonvolatile memory is sometimes referred to as flash memory.

6.6.6.2 Advantages of Nonvolatile Memory Loading

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.

6.6.7 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:

  /usr/lib/mop/nis_*client-name*.dmp

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

It is important to check that there is enough disk space on your load host to receive dumps. The table in Section 5.1 shows the amount of disk space required for dumps.

6.6.8 Use of DECdns and the Local Namespace by the Configurators

The load-host configurator asks the question:

```
You can choose whether or not the configurators use
information from a naming service to set up addresses.

Only select Yes if a DECdns name server is reachable from
this load host, or you have a local namespace.

Do you wish a naming service to be used?   No   Yes
```

This section explains how you decide what to answer.

6.6.8.1 Background: the DECNIS and the DECnet/OSI Naming Services

The DECNIS does not use naming service lookups to find the location of the DECnet systems to which it sends messages (for example, event sinks). Instead, it uses NCL commands in the master NCL script file generated by the DECNIS configurator.

These NCL commands set up a complete specification of each DECnet system the DECNIS sends messages to. The commands are CREATE SESSION CONTROL KNOWN TOWER commands.

6.6.8.2 Generating KNOWN TOWER Commands

The question on the screen is asking you to name the method the configurator should use to generate these commands.

There are two alternative methods:

- If you choose Yes, the DECNIS text-based configurator uses DECdns or local namespace lookups to generate the commands.

  In this case, you must supply a full node name or node synonym for the DECNIS. The configurator then extracts addressing information from the namespace entry, and uses this information to generate the required commands.

- If you choose No, the DECNIS configurator uses addressing information you supply.

6.6.9 Node Name (Naming Service Users Only)

If you choose to use a naming service, you must enter the full node name of the DECNIS system. The name you specify must conform to DECdns naming conventions. For details about the syntax of DECdns names, refer to the DECdns manual for your load host.

6.6.10 Node Synonym (Naming Service Users Only)

This is an alternative node name for the DECNIS. For convenience, you may use the Phase IV node name.

The node synonym is optional.

6.7 Delete a Router

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

6.7.1 Effect of Deleting

If you delete a DECNIS, the load-host configurator renames the DECNIS configuration files, as follows:

- The master NCL script file for the deleted DECNIS is renamed:

    /usr/lib/dnet/nis_*client-name*.ncl_old

- The CMIP file for the deleted DECNIS is renamed:

    /usr/lib/mop/nis_*client-name*.cmip_old

- The data file for the deleted DECNIS is renamed:

    /usr/lib/dnet/nis_*client-name*.dat_old

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

Example

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

NIS_EASTERN.NCL

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

NIS_EASTERN.NCL_OLD

6.8 Modify a Router

When you select `Modify a router`, the screen displays a list of DECNIS systems that were previously entered using the load-host configurator. Select the name of the DECNIS you wish to modify.

6.8.1 Information that Cannot Be Modified

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

6.8.2 Running the DECNIS Configurator After Modifying

You must rerun the DECNIS text-based configurator after using the load-host configurator Modify option. This is because changes to loading information may affect or even invalidate information entered in the DECNIS text-based configurator.

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

6.8.3 Modifying the 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:

1. Run the DECNIS text-based configurator.

2. Go to the `Create NCL Script` section, and create an NCL script file.

3. In the same section, create a new CMIP file or combined file.

6.8.3.1 Results of Changing Back to Load Host Loading

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

6.9 Restore a Router

The Restore option does the following:

- For MOP loading, reissues the NCL or NCP commands which set up MOP loading information.

- For BOOTP loading, reenters information in the file etc/bootptab.

Restore is useful if the permanent 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 the DECNIS systems recorded by the load-host configurator.

6.9.1 Automatic Restore

To use automatic Restore, enter the following:

```
# /usr/lib/dnet/nis_host_config -r
```

6.10 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.

6.10.1 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, as shown in Section 6.10.1.1 to Section 6.10.1.3. The default type of loading is full nonvolatile memory loading.

Note: If you change the type of loading from that previously specified for a DECNIS, you must then follow the instructions in Section 6.8.3.

6.10.1.1 Update: Full Nonvolatile Memory Loading

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

```
# /usr/lib/dnet/nis_host_config -u
```

You can achieve the same result by entering:

```
# /usr/lib/dnet/nis_host_config -u flash_full
```

6.10.1.2 Update: Part Nonvolatile Memory Loading

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, enter the following:

```
# /usr/lib/dnet/nis_host_config -u flash_part
```

6.10.1.3 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, enter the following:

```
# /usr/lib/dnet/nis_host_config -u network
```

6.11 Getting Help

You can get online help at any time while running the configurator by pressing Help . Help in the load-host configurator works in a similar way to help in the DECNIS text-based configurator. See Section 8.5 for details.

6.12 Errors when Running the Load-Host Configurator

If there are any errors when you are running the load-host configurator, they will be recorded in the log file:

/usr/lib/dnet/nis_decnis.log

6.13 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 select a menu option, 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:

/usr/lib/dnet/nis_host_config.dat

6.13.1 Saving the Load-Host Data File

Each time you run the load-host configurator and add, modify or delete information, the configurator 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.

6.14 What the Load-Host Configurator Does with 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, as described in Section 6.13.

- For MOP loading, issues NCL commands to set up load details, and enters the commands in permanent configuration files.

- For BOOTP loading, writes load details into the file /etc/bootptab.

- If you have entered naming service information during load-host configuration, registers the DECNIS in the local namespace or the DECdns namespace.

  Section 5.5.1 describes how the load-host configurator decides whether to register the DECNIS in the local or DECdns namespace.

7

Setting Up BOOTP on Load Hosts

7.1 Introduction

This chapter describes how to set up Digital UNIX and non-Digital UNIX® systems for BOOTP loading.

7.2 Setting Up Digital UNIX Systems as BOOTP Load Hosts

To set up Digital UNIX systems for BOOTP loading, check the steps in Section 7.2.1.

7.2.1 Basic Steps

1. When you run the load-host configurator, select either `BOOTP` or `MOP and BOOTP`.

2. Ensure that the BOOTP and TFTP daemons are started on system startup. Follow these steps:

   a. Edit the file /etc/services to include the following lines:

   ```
   bootps    67/udp
   tftp      69/udp
   ```

   b. Edit the file /etc/inetd.conf to include the following lines:

   ```
   bootps dgram udp wait root /usr/sbin/bootpd -s
   tftp dgram udp wait root /usr/sbin/tftpd tftpd
   ```

   c. Enter the following command to force the inetd daemon to reread the inetd.conf file:

   ```
   kill -1 process-id
   ```

   where *process-id* is the process number of the inetd process.

7.3 Setting Up Non-Digital UNIX Systems as BOOTP Load Hosts

To set up a non-Digital UNIX system as a BOOTP load host, follow these steps:

1. Run the load-host configurator on a Digital UNIX system, as described in Chapter 6. For each DECNIS to be loaded, select the BOOTP option.

2. Run the DECNIS configurator to generate NCL script files for each DECNIS.

3. Generate the required load file, and copy it to the load UNIX load host:

   • If you are using nonvolatile memory loading, generate a combined image/CMIP/profile file, and copy it to the UNIX load host.

   • If you are using load host loading, generate a CMIP file. Then copy the CMIP file, the image file, and any profile files to the UNIX load host.

   Refer to *DECNIS Configuration and Loading* for details.

4. If the UNIX load host is not already configured as a BOOTP server, ensure that the BOOTP and TFTP daemons are started on system startup. Refer to the load-host operating system documentation for details of how to do this.

8

Starting the DECNIS Configurator: Digital UNIX Load Hosts

8.1 Introduction to the DECNIS Configurator

The DECNIS text-based configurator is a utility supplied with the DECNIS.
You use the DECNIS text-based configurator to enter the information needed
for the DECNIS to communicate with other systems. For example, you use it
to enter information about addresses, protocols, and circuits.

This chapter describes how to start the configurator, the keys you can use,
and how to get online help. For more detailed information, see the manual
DECNIS Configuration and Loading.

8.2 Before You Start

Before you start the DECNIS text-based configurator, make sure that you do
the following:

1. Check Section 5.5.6. This gives the terminal settings required to run both
   the load-host configurator and the DECNIS text-based configurator.

2. Run the load-host configurator, and set up load information for the
   DECNIS you want to configure.

8.3 How to Start

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

1. Log in as a superuser.

2. Enter the command:

   ```
   # /usr/lib/dnet/nis_decnis_config
   ```

8.4 Configurator Keys

Table 8–1 shows the keys you can use to enter and change information, and to move through the configurator sections.

Table 8–1   Digital UNIX 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 in a field
Right Arrow	Move the cursor to the right in a field
Enter or Return	Enter the option you have chosen
Help or PF2	Get help on a field or section
F10	Leave Help and go back to entering data
F8	Quit the configurator without saving any data
Prev Screen	Go to the previous data entry screen in a section
Next Screen	Go to the next data entry screen in a section
Ctrl/A or F14	Shift between insert and overstrike when typing data
Ctrl/U or Remove	Remove all text in a field
Ctrl/W	Refresh the screen
<X	Delete the character to the left of the cursor
F7	Move cursor to the previous column (on screens with two columns)

8.5 Online Help

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

8.5.1 How to Get Online Help

To get help in the load-host configurator or the DECNIS text-based configurator, press Help.

8.5.2 Help on Fields and Menu Choices

If you press [Help] 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 [Help] again, another screen appears with more information. If there are several screens of information, you can page through them by pressing [Next Screen] or [Prev Screen].

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].

8.5.3 Help on the Configurator

You can get help on the configurator (for example, the keys you can use) by pressing [Help] while you are on any other Help screen.

8.5.4 Keys to Get Help

Table 8–2 lists the keys you can use to get Help, or to leave Help.

Table 8–2 Keys Used to Get Help

Pressing this key...	From this screen...	Gives you this...
[Help] or [PF2]	Data entry screen	3-line Help
[Help] or [PF2]	Data entry screen with 3-line Help displayed	Full Parameter Help
[Help] or [PF2]	Full screen of help	Procedures Help menu
[Next Screen]	Full screen of help, Procedures Topic	Next screen of information
[Prev Screen]	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

Part III

Appendixes

This part contains the following appendixes:

- Appendix A summarizes the information required for load-host configuration on the following types of load host:

  - DECnet/OSI for OpenVMS

  - DECnet/OSI for Digital UNIX

- Appendix B lists the files installed on OpenVMS load hosts.

- Appendix C is an example log of an installation on an OpenVMS load host.

- Appendix D lists the files installed on Digital UNIX load hosts.

- Appendix E is an example log of an installation on a Digital UNIX load host.

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 3 and Chapter 6 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.

Table A–1   Load-Host Configuration Information: DECnet/OSI Load Hosts

Information Required	Notes	R(equired)/ O(ptional)	Default	Your Value
Type of DECNIS	Select from list	R	–	
Load protocol (if both MOP and BOOTP supported)	Select one: MOP; BOOTP; Both	R	–	
Load client name	Create a name to identify the DECNIS for loading. Max. 32 characters	R	–	
Hardware address	LAN address of the DECNIS, as printed on the label on the Processor Card. Example: 08-00-2B-02-AA-20	R	–	
MOP circuit name (MOP loading only)	Name of the MOP circuit used to load the DECNIS. Max. 32 characters	R	–	
IP address (BOOTP loading only)	IP address for the DECNIS	R	–	
DECnet Phase IV address of DECNIS	*Area number.node number* Example: 2.43	O (but R to communicate with Phase IV systems)	–	
Type of loading	Select one: nonvolatile memory for both; load host for CMIP, nonvolatile memory for image; load host for both	R	Nonvolatile memory for both	
Create a dump file?	Select Yes or No	R	–	
Should configurator use naming service?	Select Yes or No	R	Yes	
Node name	Full node name of DECNIS	R if naming service chosen	–	
Node synonym	Alternative name for the DECNIS, recorded in DECdns or the local namespace. Max. 6 characters	O	–	

A.1 Dump File Names

Refer to Section 3.5.6 for the dump file name and location on OpenVMS load hosts.

Refer to Section 6.6.7 for the dump file name and location on Digital UNIX load hosts.

B

Files Installed on an OpenVMS Load Host

B.1 Introduction

This appendix lists the files installed on an OpenVMS load host by the DECNIS installation procedure.

B.2 Required Files

This section lists the files that are always installed in the DECNIS installation procedure.

B.2.1 SYS$COMMON:[DECW$BOOK] Directory

- NIS$PROBLEM_SOLVING.DECW$BOOK—Problem solving manual
- NIS$PROBLEM_SOLVING.DECW$BOOKSHELF—Problem solving bookshelf

B.2.2 SYS$COMMON:[MOM$SYSTEM] Directory

- FCNS$MCNM_PRF.DAT—Modem connect profile file
- FCNS$X25L2_PRF.DAT—X.25 level 2 profile file
- FCNS$X25L3_PRF.DAT—X.25 level 3 profile file
- NIS040.SYS – DECNIS double system image
- NIS040B.SYS—DECNIS system image (no console NCL)
- NIS$TEST_SCRIPT.NCL—Test script (Not on OpenVMS Alpha)
- NIS$IMAGES.DAT —List of supported NIS images

B.2.3 SYS$EXAMPLES Directory

- NIS$ATM_DS3.NCL—ATM on DS3 lines NCL example
- NIS$ATM_E3.NCL—ATM on E3 lines NCL example
- NIS$ATM_OC3.NCL—ATM on OC3 lines NCL example
- NIS$ATM_OC3_CLASS_IP.NCL—ATM Classical IP on OC3 lines NCL example
- NIS$BACKUP.NCL—Backup circuits NCL example
- NIS$PACK_FILT.NCL—IP packet filtering NCL example
- NIS$DNS_NAME_SERVER.NCL –IP services NCL example
- NIS$IP_MULTICAST.NCL— IP multicast NCL example
- NIS$ICMP_RD.NCL—ICMP router discovery NCL example
- NIS$IPX_WAN.NCL—IPX WAN NCL example
- NIS$IP_PRIORITY_PATT.NCL—IP pattern matching prioritization NCL example
- NIS$IP_STANDBY.NCL—IP standby NCL example
- NIS$LAT_PRIORITY_PATT.NCL—LAT pattern matching prioritization NCL example
- NIS$NCL_EXAMPLE.NCL—Simple NCL example
- NIS$OSPF_MINIMUM.NCL—OSPF NCL example
- NIS$OSPF_MULTI_AREA.NCL—OSPF NCL example
- NIS$OSPF_VIRTUAL.NCL—OSPF NCL example
- NIS$PRIORITY.NCL—Prioritization NCL example
- NIS$SMDS.NCL—SMDS NCL example
- NIS$X25_LANWAN_RELAY.NCL—LAN/WAN relay NCL example
- NIS$X25_LOCAL_RELAY.NCL—X.25 local relay NCL example
- NIS$X25_REMOTE_RELAY.NCL—X.25 remote relay NCL example
- DTF.TXT—DECNIS Trace Facility manual
- DTFAXP.A—DTF for OpenVMS Alpha hosts
- DTFOSF.TAR—DTF for Digital UNIX hosts

- DTFULTRIX.TAR—DTF for ULTRIX hosts
- DTFVMS.A—DTF for OpenVMS VAX hosts
- DTFW32.ZIP—DTF for Windows® NT hosts

B.2.4 SYS$HELP Directory

- DEC_ELAN_MIB.V27_TXT—DEC specific MIB
- NIS$DECNIS_CONFIG_HELP.BIN—DECNIS configurator help
- NIS$EVENTS.TXT—Event messages
- NIS$HOST_HELP.BIN—Load-host configurator help
- NIS040.RELEASE_NOTES—Release Notes
- NCLHELP.HLP—NCL help
- FCNS$NI.TXT—Documentation for X.25 network profiles

B.2.5 SYS$LIBRARY Directory

- CTF$*.*—To enable tracing using the Common Trace Facility

B.2.6 SYS$MANAGER Directory

- NIS$CMIP_FILE.FDL—Exchange file
- NIS$DECNIS_CONFIG.COM—DECNIS configuration procedure
- NIS$DEINSTALL.COM—Delete installation file
- NIS$HOST_CONFIG.COM—Load-host configuration procedure
- NIS$SCRIPT_COMPILE.COM—CMIP file creation procedure
- NIS$COMBINE.COM—Combined file creation procedure

B.2.7 SYS$MESSAGE Directory

- NIS$DECNIS_CONFIG.BIN—DECNIS configurator messages
- NIS$DECNIS_NCL_TEMPLATE.BIN—NCL command messages
- NIS$HOST_CONFIG.BIN—Load-host configurator messages

B.2.8 SYS$SYSTEM Directory

- DECROU$NCL.EXE—DECNIS NCL utility (not on OpenVMS VAX)
- DICTARY.DAT—Parse tables for the bridge management utility
- MOD_FLSH.EXE—Utility for editing the combined file
- NIS$NCHK.EXE—NCL checking utility (Not on OpenVMS VAX)
- NCLPRS.BIN—Parsing information for the bridge management utility
- NIS$BRIDGE_MGMT.EXE—Bridge management utility
- NIS$DECNIS_CONFIG.EXE—DECNIS configurator program
- NIS$DECNIS_SMDS_CONFIG.EXE –SMDS configurator program
- NIS$FLASH.EXE—Flash compression utility
- NIS$HOST_CONFIG.EXE—Load-host configurator
- NIS$PROVIDE_NCL.EXE—Updates the NCL parse tables available to the NCL utility
- NIS$SCRIPT_COMPILER.EXE—CMIP file creation program
- PROTOID.MAP—Protocol identifiers for the bridge management utility

B.2.9 SYS$TEST Directory

- NIS$IVP.COM—Installation verification procedure

B.3 Optional Files

The files listed will be optionally installed, based on the installation state of NCL.

B.3.1 SYS$LIBRARY Directory

- NCL$GLOBALSECTION.DAT—NCL global section (NCL dictionary)

B.3.2 MCC_COMMON Directory

- MCC_DECNIS_APPL.DAT—Customization file for DECmcc™ application menu V1.2 of DECmcc
- MCC_APPL_DECNIS.DEF—Customization file for DECmcc application menu V1.3 of DECmcc

C

Example Installation on an OpenVMS Load Host

This appendix contains an example installation of DECNIS software on OpenVMS Alpha and OpenVMS VAX load hosts.

Throughout this appendix, text you type in is indicated by a **bold** typeface.

C.1 Example Installation on OpenVMS Alpha Load Host

$ **sys$update:vmsinstal**

```
        OpenVMS AXP Software Product Installation Procedure V6.1

It is 27-OCT-1996 at 15:01.

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

* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted: VANGOF$DKA500:[DECNIS_KITS.40]

Enter the products to be processed from the first distribution volume set.
* Products: NISAXP040
* Enter installation options you wish to use (none):

The following products will be processed:

  NISAXP V4.0


        Beginning installation of NISAXP V4.0 at 15:01

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

INSTALLATION
============
The DECNIS version V4.0 will take approximately 45 minutes
to install, depending on hardware configuration.


    DEC Network Integration Server V4.0 Installation Procedure.

    Copyright Digital Equipment Corporation 1991, 1996.  All rights reserved.
```

```
       Restricted Rights: Use, duplication, or disclosure by the U.S. Government
       is subject to restrictions as set forth in subparagraph (c)(1)(ii) of DFARS
       252.227-7013, or in FAR 52.227-19, or in FAR 52.227-14 Alt. III, as
       applicable.

       This software is proprietary to and embodies the confidential technology of
       Digital Equipment Corporation. Possession, use, or copying of this software
       and media is authorized only pursuant to a valid written license from
       Digital or an authorized sublicensor.


       You should read the Release Notes immediately AFTER installing
       this product.  The release notes for the DECNIS are in a file
       called NIS040.RELEASE_NOTES which is in the SYS$HELP directory.
* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?

        The IVP will be placed in the directory SYS$TEST.

        You can run the IVP with the DCL command @SYS$TEST:NIS$IVP.

        No further questions will be asked until the IVP.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

     Beginning the DECNIS V4.0 Installation Verification Procedure.
     Copyright Digital Equipment Corporation 1991, 1996. All rights reserved.


   You will now be asked whether you wish to execute the Configurators.
   If you answer YES, this procedure will execute the Host Configurator,
   followed by the DECNIS Configurator.

    When executing the Configurators, you should press RETURN at the
    first screen and then select EXIT.

    *** DO NOT proceed to configure your DECNIS, at this stage ***

    You should check, in each Configurator, that :-

    o  No error messages are reported.

    o  The help file is successfully read in by the Configurator.

    If the above checks are successful, the IVP has succeeded.
    Otherwise the IVP has failed.
Do you wish to execute the Configurators [Y/N <N>]? y

Running Host Configurator....

Running DECNIS Configurator....


The DECNIS V4.0 Installation Verification Procedure
has completed successfully.
```

```
          Installation of NISAXP V4.0 completed at 15:15

      Adding history entry in VMI$ROOT:[SYSUPD]VMSINSTAL.HISTORY

      Creating installation data file: VMI$ROOT:[SYSUPD]NISAXP040.VMI_DATA

Enter the products to be processed from the next distribution volume set.
* Products:

          VMSINSTAL procedure done at 15:16
```

C.2 Example Installation on OpenVMS VAX Load Host

$ **sys$update:vmsinstal**

```
          OpenVMS VAX Software Product Installation Procedure V6.2

It is 27-OCT-1996 at 14:49.

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

* Are you satisfied with the backup of your system disk [YES]?
* Where will the distribution volumes be mounted: VELA$DUA1:[NIS_KIT.40]

Enter the products to be processed from the first distribution volume set.
* Products: *
* Enter installation options you wish to use (none):

The following products will be processed:

  NIS V4.0

          Beginning installation of NIS V4.0 at 14:49

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


INSTALLATION
============
The DECNIS version V4.0 will take approximately 45 minutes
to install, depending on hardware configuration.


    DEC Network Integration Server V4.0 Installation Procedure.

    Copyright Digital Equipment Corporation 1991, 1996.  All rights reserved.

    Restricted Rights: Use, duplication, or disclosure by the U.S. Government
    is subject to restrictions as set forth in subparagraph (c)(1)(ii) of DFARS
    252.227-7013, or in FAR 52.227-19, or in FAR 52.227-14 Alt. III, as
    applicable.

    This software is proprietary to and embodies the confidential technology of
    Digital Equipment Corporation. Possession, use, or copying of this software
    and media is authorized only pursuant to a valid written license from
    Digital or an authorized sublicensor.
```

You should read the Release Notes immediately AFTER installing
this product. The release notes for the DECNIS are in a file
called NIS040.RELEASE_NOTES which is in the SYS$HELP directory.

* Do you want to purge files replaced by this installation [YES]?
* Do you want to run the IVP after the installation [YES]?

The IVP will be placed in the directory SYS$TEST.

You can run the IVP with the DCL command @SYS$TEST:NIS$IVP.

No further questions will be asked until the IVP.

%VMSINSTAL-I-RESTORE, Restoring product save set B ...
%VMSINSTAL-I-RESTORE, Restoring product save set C ...
%VMSINSTAL-I-MOVEFILES, Files will now be moved to their target directories...

Beginning the DECNIS V4.0 Installation Verification Procedure.
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You will now be asked whether you wish to execute the Configurators.
If you answer YES, this procedure will execute the Host Configurator,
followed by the DECNIS Configurator.

When executing the Configurators, you should press RETURN at the
first screen and then select EXIT.

*** DO NOT proceed to configure your DECNIS, at this stage ***

You should check, in each Configurator, that :-

o No error messages are reported.

o The help file is successfully read in by the Configurator.

If the above checks are successful, the IVP has succeeded.
Otherwise the IVP has failed.

Do you wish to execute the Configurators [Y/N <N>]? **y**

Running Host Configurator....

Running DECNIS Configurator....

The DECNIS V4.0 Installation Verification Procedure
has completed successfully.

Installation of NIS V4.0 completed at 15:17

Enter the products to be processed from the next distribution volume set.
* Products:

VMSINSTAL procedure done at 15:17

D

Files Installed on Digital UNIX Load Hosts

D.1 Introduction

This appendix lists the files installed on a Digital UNIX load host by the DECNIS installation procedure.

Pathname and File	Description
/etc/bootptab.default	Default bootptab
/usr/bin/ncl.nis400	NCL image
/usr/lib/dnet/dec_elan_mib.v27_txt	DEC Vendor MIB
/usr/lib/dnet/decrou_ncl/ncl/dictary.dat	Work file used for NCL checking
usr/lib/dnet/dtf/dtf.txt	DECNIS Trace Facility (DTF) manual
usr/lib/dnet/dtf/dtfaxp.a	DTF for OpenVMS Alpha hosts
usr/lib/dnet/dtf/dtfosf.tar	DTF for Digital UNIX hosts
usr/lib/dnet/dtf/dtfultrix.tar	DTF for ULTRIX hosts
/usr/lib/dnet/dtf/dtfvms.a	DTF for OpenVMS VAX hosts
usr/lib/dnet/dtf/dtfw32.zip	DTF for Windows NT hosts
/usr/lib/dnet/fcns_ni.txt	X.25 Network information
/usr/lib/dnet/mcc_add_applications.sh_new	Shell script to add the new application menu
/usr/lib/dnet/mcc_decnis_appl.dat	Customization file for DECmcc application menu DECmcc V1.2
/usr/lib/dnet/nia400_ivp	Installation verification procedure
/usr/lib/dnet/nis040.release_notes	Release notes
/usr/lib/dnet/nisfix040.release_notes	Release notes
/usr/lib/dnet/nis_decnis_config	DECNIS configurator
/usr/lib/dnet/nis_decnis_config.bin	DECNIS configurator messages

Pathname and File	Description
/usr/lib/dnet/nis_decnis_config_help.bin	DECNIS configurator help
/usr/lib/dnet/nis_decnis_ncl_template.bin	NCL template
/usr/lib/dnet/decnis_smds_config	SMDS configurator
/usr/lib/dnet/nis_combine	Shell script for combine utility
/usr/lib/dnet/nis_events.txt	Event messages text
/usr/lib/dnet/nis_example.ncl	Example NCL Script
/usr/lib/dnet/mod_flsh	Edit combined file utility
/usr/lib/dnet/nis_flash	Flash compression utility
/usr/lib/dnet/nis_host_config	Load-host configurator
/usr/lib/dnet/nis_host_config.bin	Load-host configurator messages
/usr/lib/dnet/nis_host_help.bin	Load-host configurator help
/usr/lib/dnet/nis_images.dat	System image
usr/lib/dnet/nis_nchk	NCL checking utility
usr/lib/dnet/nis_atm_ds3.ncl	ATM on DS3 lines NCL example
usr/lib/dnet/nis_atm_e3.ncl	ATM on E3 lines NCL example
usr/lib/dnet/nis_atm_oc3.ncl	ATM on OC3 lines NCL example
usr/lib/dnet/nis_atm_oc3_class_ip.ncl	ATM Classical IP on OC3 lines NCL example
/usr/lib/dnet/nis_backup.ncl	Backup circuit NCL example
/usr/lib/dnet/nis_dns_name_server.ncl	IP services NCL example
/usr/lib/dnet/nis_icmp_rd.ncl	ICMP router discovery NCL example
usr/lib/dnet/nis_ip_multicast.ncl	IP multicast NCL example
/usr/lib/dnet/nis_ip_priory_patt.ncl	IP pattern matching prioritization NCL example
/usr/lib/dnet/nis_ip_standby.ncl	IP standby MAC mode NCL example
/usr/lib/dnet/nis_ipx_wan.ncl	IPX WAN link NCL example
/usr/lib/dnet/nis_lat_priority_patt.ncl	LAT pattern matching prioritization NCL example
usr/lib/dnet/nis_pack_filt.ncl	IP packet filtering NCL example
/usr/lib/dnet/nis_ospf_minimum.ncl	OSPF NCL example
/usr/lib/dnet/nis_ospf_multi_area.ncl	OSPF NCL example
/usr/lib/dnet/nis_ospf_virtual.ncl	OSPF NCL example

s

Pathname and File	Description
/usr/lib/dnet/nis_priority.ncl	Prioritization NCL example
/usr/lib/dnet/nis_smds.ncl	SMDS NCL example
/usr/lib/dnet/nis_x25_lanwan_relay.ncl	LAN/WAN relay NCL example
/usr/lib/dnet/nis_x25_local_relay.ncl	X.25 local relay NCL example
/usr/lib/dnet/nis_x25_remote_relay.ncl	X.25 remote relay NCL example
/usr/lib/dnet/nis_script_compile	NCL script compiler
/usr/lib/dxbook/decnispsg.decw_book	Bookreader file for DECNIS Problem Solving manual
/usr/lib/dxbook/decnispsg.decw_bookshelf	Bookshelf for DECNIS Problem Solving manual
/usr/lib/mop/digital/fcns/mcnm_prf	Modem connect profile file
/usr/lib/mop/digital/fcns/x25l2_prf	X.25 Level 2 profile file
/usr/lib/mop/digital/fcns/x25l3_prf	X.25 Level 3 profile file
/usr/lib/mop/nis040.sys	DECNIS double system image
/usr/lib/mop/nis040b.sys	DECNIS system image (no console NCL)
/usr/man/man8/nis_decnis_config.8	DECNIS configurator manpages
/usr/man/man8/nis_host_config.8	Load-host configurator manpages
/usr/man/man8/nis_combine.8	Combine utility manpages
/usr/man/man8/nis_script_compile.8	NCL script compiler manpages
/usr/mcc/mcc_system/mcc_appl_decnis.def	Customization file for DECmcc application menu DECmcc V1.3
/usr/share/dna/dict/ncl_dna5_atm_connection_management.ms	ATM connection management module text file
/usr/share/dna/dict/ ncl_dna5_atm_multiprotocol_encap.ms	ATM multiprotocol encapsulation module text file
/usr/share/dna/dict/ncl_dna5_bridge.ms	Bridge module text file
/usr/share/dna/dict/ncl_dna5_chdlc.ms	CHDLC module text file
/usr/share/dna/dict/ncl_dna5_csmacd.ms	CSMA-CD module text file
/usr/share/dna/dict/ncl_dna5_fddi.ms	FDDI module text file
/usr/share/dna/dict/ncl_dna5_frbs.ms	Frame relay module text file
/usr/share/dna/dict/ncl_dna5_hardware.ms	Hardware module text file
/usr/share/dna/dict/ncl_dna5_hdlc.ms	HDLC module text file
/usr/share/dna/dict/ncl_dna5_ips.ms	IP Services module text file

Pathname and File	Description
/usr/share/dna/dict/ncl_dna5_lapb.ms	LAPB module text file
/usr/share/dna/dict/ncl_dna5_mop.ms	MOP module text file
/usr/share/dna/dict/ncl_dna5_multiplexed_interface.ms	Multiplexed Interface module text file
/usr/share/dna/dict/ncl_dna5_nsp.ms	NSP module text file
/usr/share/dna/dict/ncl_dna5_ppp.ms	PPP module text file
/usr/share/dna/dict/ncl_dna5_priority.ms	Priority module text file
/usr/share/dna/dict/ncl_dna5_routing.ms	Routing module text file
/usr/share/dna/dict/ncl_dna5_session.ms	Session module text file
/usr/share/dna/dict/ncl_dna5_smds.ms	SMDS module text file
/usr/share/dna/dict/ncl_dna5_snmp.ms	SNMP module text file
/usr/share/dna/dict/ncl_dna5_supervisor.ms	Supervisor module text file
/usr/share/dna/dict/ncl_dna5_tcp.ms	TCP module text file
/usr/share/dna/dict/ncl_dna5_x25_access.ms	X25 Access module text file
/usr/share/dna/dict/ncl_dna5_x25_protocol.ms	X25 Protocol module text file
/usr/share/dna/dict/ncl_dna5_x25_relay.ms	X.25 Relay module text file
/usr/share/dna/dict/ncl_help.hlp	NCL help

E

Example Installation on a Digital UNIX Load Host

This appendix contains an example installation of DECNIS software on an Digital UNIX load host.

Throughout this appendix, text you type in is indicated by a **bold** typeface.

```
# setld -l . NIANIS400

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) DECNIS V3.1 for Digital UNIX

Or you may choose one of the following options:

    2) ALL of the above
    3) CANCEL selections and redisplay menus
    4) EXIT without installing any subsets

Enter your choices or press RETURN to redisplay menus.

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

You are installing the following optional subsets:

        DECNIS V3.1 for for Digital UNIX

Is this correct? (y/n): y

Checking file system space required to install selected subsets:

File system space checked OK.

INSTALLATION
============
The DECNIS version 3.1 SSB Kit will take approximately 20 minutes
to install, depending on hardware configuration.
```

```
*****************************************************************************
*  DEC Network Integration Server V3.1 Installation Procedure             *
*                                                                         *
*  Copyright Digital Equipment Corporation. 1994. All rights reserved.    *
*                                                                         *
*  Restricted Rights:  Use,  duplication,  or  disclosure  by the  U.S. *
*  Government  is  subject  to restrictions as set forth in subparagraph *
*  (c)(1)(ii)  of  DFARS 252.227-7013,  or  in  FAR 52.227-19, or in FAR *
*  52.227-14 Alt.  III, as applicable.                                    *
*                                                                         *
*  This software  is  proprietary  to  and  embodies  the  confidential *
*  technology  of  Digital Equipment  Corporation.  Possession, use, or *
*  copying  of  this software and media is authorized only pursuant to a *
*  valid written license from Digital or an authorized sublicensor.       *
*                                                                         *
*                                                                         *
*  An example installation log for this product is included in the        *
*  Installation and Configuration manual. This log contains all the       *
*  messages displayed by this installation procedure.                     *
*                                                                         *
*  You should read these notes and this log immediately AFTER installing *
*  this product, because it contains important information about how to  *
*  use the DECNIS software.                                               *
*                                                                         *
*                                                                         *
*  NIANIS400 Installation started at Thu 27 Oct 1996, 15:33:57           *
*                                                                         *
*****************************************************************************

Installing DECNIS Digital UNIX kit onto a OSF1 alpha system

Saving DECNIS specific files...
Saving original etc/bootptab file.

DECNIS V3.1 for Digital UNIX
    Copying from . (disk)
        Working....Thu Oct 27 15:34:14 BST 1996
    Verifying

Do you want to run the IVP after the installation? (y/n) [y]:

**** Checking dates of profile files ****
'usr/lib/mop/digital/fcns/mcnm_prf' is up to date.
'usr/lib/mop/digital/fcns/x25l2_prf' is up to date.
'usr/lib/mop/digital/fcns/x25l3_prf' is up to date.
'usr/lib/dnet/fcns_ni.txt' is up to date.
'usr/lib/dnet/dec_elan_mib.v27_txt' is up to date.

*** Updating with new DECNIS NCL modules...
```

```
Saving old dictionary....
Updating dictionary....
Successfully updated ncl_dna5_bridge.ms
Successfully updated ncl_dna5_chdlc.ms
Successfully updated ncl_dna5_csmacd.ms
Successfully updated ncl_dna5_fddi.ms
Successfully updated ncl_dna5_frbs.ms
Successfully updated ncl_dna5_hardware.ms
Successfully updated ncl_dna5_hdlc.ms
Successfully updated ncl_dna5_lapb.ms
Successfully updated ncl_dna5_mop.ms
Successfully updated ncl_dna5_ppp.ms
Successfully updated ncl_dna5_routing.ms
Successfully updated ncl_dna5_x25_relay.ms
Successfully updated ncl_dna5_snmp.ms
Successfully updated ncl_dna5_smds.ms
Successfully updated ncl_dna5_supervisor.ms
Successfully updated ncl_dna5_tcp.ms
Successfully updated ncl_dna5_priority.ms

*** DECNIS NCL help updated into usr/share/dna/ncl_help.txt


                   ----------------------------

    Beginning DECNIS V3.1 Installation Verification Procedure (IVP)
    Copyright Digital Equipment Corporation 1994. All rights reserved.


   ...all component files for the DECNIS subset verified present.

                   ----------------------------

Checking version numbers of installed software...

        Software Image.............DECNIS V3.1
        HOST Configurator..........DECNIS Host Configurator Version V3.1
        DECNIS Configurator........DECNIS Configurator Version V3.1

    As a final check, the IVP now executes the Host Configurator,
    and then DECNIS Configurator.

    In each, press RETURN at the first screen, then select EXIT.

    *DO NOT* proceed to configure your DECNIS at this stage.
     ------

    In each Configurator, check that:
        o  No error messages are reported
        o  The help file is successfully read in by the Configurator.


    *********************** NOTE ***************************
    If the above checks are successful, the IVP has succeeded.
    Otherwise, the IVP has failed.
    *******************************************************

    Press return when ready..
```

```
                    LOAD HOST CONFIGURATION

                    DECNIS CONFIGURATION

   Checking the image combine utility

Creating a sample ncl script
Creating a cmip file from the ncl script

 Generating CMIP file from /usr/lib/dnet/nis_tmptmp.ncl...
 - Logfile: /usr/lib/dnet/nis_tmptmp.log

Combining script, profiles and compressed image

Combine Done - Image version 3.1

                    Successfully created the combined image...


 DECNIS V3.1 SSB Kit Verification Procedure Completed Succesfully.


Providing DECNIS problem solving guide for Bookreader

Old library retained as usr/lib/dxbook/library.decw_bookshelf_old

Decnis Problem Solving Guide available for Bookreader.

                    ---------------------------

                              Notes
                              -----

     1.  If you have configured DECNIS servers using previous versions
         of the DECNIS software, you may wish to upgrade them to use the
         latest version of the DECNIS software:

            - to do this for an individual DECNIS server, use the
              UPDATE option in the DECNIS Host Configurator.

            - to do this for all your previously configured DECNIS servers,
              use the following command :-

                 # usr/lib/dnet/nis_host_config -u update_type

            - the valid update types are flash_full, flash_part and
              network.

         Any DECNIS servers which are updated will need to be rebooted to
         load the new software image into the server.

     2.  The installation may be verified at any time by typing:

                 # setld -v NIANIS400

         Note: this also gives you the image reference number of your kit;
               from this, you can determine the relative ages of different
               images, and hence whether to update your subset.
```

```
                    DECNIS On-Line Documentation
                    ----------------------------
   This subset places files called:

       1.  decnispsg.decw_book in usr/lib/dxbook

           This is the DECwindows Bookreader version of the DECNIS
           Problem Solving Guide.

       2.  nis040.release_notes in usr/lib/dnet

           These are the release notes for the DECNIS kit and may be printed
           or displayed on the screen.

       **********************************************************************
       *                                                                    *
       *    NIANIS400 Installation Completed at Thu 27 Oct 1996, 15:40:06   *
       *                                                                    *
       **********************************************************************

Configuring "DECNIS V3.1 for Digital UNIX" (NIANIS400)
```

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