# DEC Network Integration Server

# Installation and Configuration for OpenVMS, ULTRIX and DEC OSF/1

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# Preface

This manual explains how to:

- Install the software for the DEC™ Network Integration Server on OpenVMS™, ULTRIX™ and DEC OSF/1® load hosts.
- Configure OpenVMS, ULTRIX and DEC OSF/1 so that they can downline load the DECNIS software.
- Start the DECNIS configurator on OpenVMS, ULTRIX and DEC OSF/1 load hosts.

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

## Audience

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

- Local Area Networks (LANs)
- Wide Area Networks (WANs)
- OpenVMS (if using an OpenVMS load host)
- ULTRIX (if using an ULTRIX load host)
- DEC OSF/1 (if using a DEC OSF/1 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

- *Router Configuration and Management from PCs*

  This manual describes how to install and configure the software for supported routers on an IBM®-compatible Personal Computer running MS–DOS®. Supported routers include the DECNIS.

- 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

## Documentation Comments

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doc_quality@lkg.mts.dec.com

Alternatively, you can complete the postpaid Reader's Comments form at the end of this document.

Thank you.

## 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 DECdns, enter the name registered in DECdns. |
| Prompts | The following prompts precede commands that you enter:<br>For OpenVMS: `$`<br>For ULTRIX and DEC OSF/1: `#`<br>For NCL: `NCL>`<br>For NCP: `NCP>` |

# 1
# Introduction

This manual describes how to do the following on OpenVMS, ULTRIX and OSF/1 load hosts.

- Install DECNIS software.
- Run the load-host configurator to set up downline loading information.
- Start the DECNIS 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 configurator and on loading the DECNIS hardware unit.

## 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 |
| 2 | Run the load-host configurator and enter the required information | Chapter 3 and Chapter 6 |
| 3 | Run the DECNIS 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 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 configurator on OpenVMS load hosts.

# 2

# Installing: OpenVMS Load Hosts

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

## 2.1 OpenVMS Background Information

The following table gives the background information needed before you install the DECNIS software on an OpenVMS load host.

| Item | Value/Description |
|---|---|
| Prerequisite software | OpenVMS V5.4 or later |
| | DECnet™-VAX™ Extensions or DECnet/OSI® for OpenVMS |
| Prerequisite hardware | VAX with VT220™ or later terminal, or VAXstation™ running DECwindows™ |
| | DECNIS hardware unit |
| Kit description | 1 TK50 or 1 mag tape |
| 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 | DECnet–VAX Extensions: 70,000 blocks (+ up to 64,000 blocks per dump); DECnet/OSI for OpenVMS: 55,000 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 |

## 2.2 Parameter Values on DECnet–VAX Extensions Load Hosts

On DECnet–VAX Extensions load hosts, you need to do the following:

- Adjust the values of the parameters VIRTUALPAGECNT, PGFLQUO and BYTLM in order to receive dumps from the DECNIS.
- Adjust the value of BYTLM in order to load the DECNIS.

This does not apply to DECnet/OSI for VMS load hosts.

### 2.2.1 Setting VIRTUALPAGECNT (Virtual Page Count)

You must adjust the value of the system parameter VIRTUALPAGECNT in order to accommodate the MOM process which performs dumps. If the MOM process does not have a high enough VIRTUALPAGECNT, a DECnet event is signalled, indicating that the MOM process has run out of virtual memory.

#### 2.2.1.1 VIRTUALPAGECNT Values

The VIRTUALPAGECNT values required are as follows:

| | |
|---|---|
| VIRTUALPAGECNT value for DECNIS configuration | 45,000 |
| VIRTUALPAGECNT value to receive DECNIS dumps | 64,000 |

#### 2.2.1.2 How to Set VIRTUALPAGECNT

Use the OpenVMS AUTOGEN utility to raise the value of VIRTUALPAGECNT.

### 2.2.2 Setting PGFLQUO

The page file quota (PGFLQUO) controls the number of pages allocated to NETACP (network ancillary control process). You must set the PGFLQUO value correctly.

#### 2.2.2.1 PGFLQUO Values

The PGFLQUO values required are as follows:

| | |
|---|---|
| PGFLQUO value for DECNIS configuration | 45,000 |
| PGFLQUO value to receive DECNIS dumps | 64,000 |

#### 2.2.2.2 How to Set PGFLQUO

PGFLQUO is derived from the system logical name NETACP$PAGE_FILE. Define this logical name in the file SYS$MANAGER:SYLOGICALS.COM.

## 2.2.3 Setting BYTLM Quota

The BYTLM quota adjusts the amount of resources allocated to the NETACP process. The NETACP requires a large BYTLM quota for the DECNIS to load from DECnet–VAX Extensions load hosts, and for dumps to be received.

### 2.2.3.1 Loading: Calculating the BYTLM Quota

To calculate the BYTLM quota for loading, follow these steps:

1. Allow 3500 bytes to start up DECnet.
2. Add to this the following value:

   *total_receive_buffers* * *total_device_buffer_size*

   where: *total_receive_buffers* is the total value over all lines of the NCP Line characteristic `Receive buffers`

   *total_device_buffer_size* is the total value over all lines of the NCP Line characteristic `Device buffer size`
3. Finally, increase BYTLM by 7200 bytes for each circuit which has service enabled.

### 2.2.3.2 Finding Receive Buffers and Device Buffer Size

To find the value of `Receive buffers` and `Device buffer size` for each line on the load host, follow these steps:

1. Run the Network Control Program (NCP).
2. Enter the NCP command:

   ```
   NCP> SHOW KNOWN LINE CHARACTERISTICS
   ```

   The `Receive buffers` and `Device buffer size` values for each line will be displayed.
3. To find *total_receive_buffers*, add together the `Receive buffers` values for all lines.
4. To find *total_device_buffer_size*, add together the `Device buffer size` values for all lines.

#### 2.2.3.3 Finding the Service Enabled Circuits

To find out how many circuits on the load host have service enabled, follow these steps:

1. Run NCP.
2. Enter the following NCP command:

   ```
   NCP> SHOW KNOWN CIRCUIT CHARACTERISTICS
   ```

   The screen will display whether service is enabled or disabled for each circuit.

#### 2.2.3.4 Receiving Dumps: BYTLM Quota

To receive dumps, the BYTLM quota must be at least 20,000.

#### 2.2.3.5 How to Set the BYTLM Quota Value

The BYTLM value is derived from the system logical name NETACP$BUFFER_LIMIT. Define this logical name in the file SYS$MANAGER:SYLOGICALS.COM.

## 2.3 OpenVMS Installation Procedure

To install the DECNIS software, do the following:

| Step | Action |
|---|---|
| 1 | Issue the following command:<br>`$ @SYS$UPDATE:VMSINSTAL NIS023 device-name OPTIONS N`<br>where *device-name* is the device where the kit is mounted |
| 2 | Select the option you require from the Release Notes Menu |
| 3 | Read the Release Notes before using the product |

## 2.4 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$HELP:NIS023.Release_notes |
| *DECNIS Problem Solving* manual | NIS$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] |

### 2.4.1 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.

  LIBRARY.DECW$BOOKSHELF is in the DECW$BOOK directory on a standard OpenVMS system.

## 2.5 After Installation

This section describes postinstallation tasks.

### 2.5.1 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 configurator, as described in Chapter 4 and the manual *DECNIS Configuration and Loading*.

### 2.5.2 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 3.10.
2. Start the DECNIS 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 an image/CMIP/profile file, depending on what is displayed on the menu.
8. Repeat steps 2 to 7 for each DECNIS that will use the new version of the software.
9. Reload your DECNISs, as described in the manual *DECNIS Configuration and Loading*.

### 2.5.3 Verifying the Installation

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

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

### 2.5.4 Deleting Installed Files

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

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

### 2.5.5 Checking Your Terminal Setup

In order to run the load-host configurator and the DECNIS configurator, you must use one of the types of terminal listed in Section 2.5.5.1, and set up the terminal as described in Section 2.5.5.2.

#### 2.5.5.1 Type of Terminal

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

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

#### 2.5.5.2 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.

### 2.5.6 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 2.3.
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, and enter loading information.
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 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.

Refer to *DECNIS Configuration and Loading* for instructions on copying files between load hosts.

# 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 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

Both DECnet/OSI for OpenVMS load hosts and DECnet–VAX Extensions 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 on the screens. The information is described in the following sections:
   - Section 3.5 describes the information required when loading from a DECnet/OSI for OpenVMS load host.
   - Section 3.6 describes the information required when loading from a DECnet–VAX Extensions load host.

## 3.5 DECnet/OSI Load Hosts: Load Information

This section describes the information you enter in the load-host configurator on DECnet/OSI load hosts.

### 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 DECNIS.
- 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 DNS by the Configurators

The load-host configurator asks the question:

```
You can choose whether or not the configurators use
information in the DECdns namespace 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 DECdns to be used?   No   Yes
```

This section explains how you decide what to answer.

#### 3.5.7.1 Background: the DECNIS and DECdns

The DECNIS does not use DNS 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 configurator uses DNS or local namespace lookups to generate the commands.

  In this case, you must supply a DNS 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.

### 3.5.8 DNS Node Name (DECdns Users Only)

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

### 3.5.9 DNS Node Synonym (DECdns Users Only)

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

The DNS node synonym is optional.

## 3.6 DECnet–VAX Extensions Load Hosts: Loading Information

This section describes the information you enter in the load-host configurator on DECnet–VAX Extensions load hosts.

### 3.6.1 Load Client Name

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

#### 3.6.1.1 Requirements for the Load Client Name

The requirements for the load client name are:

- The load client name must be the same as the Phase IV node name of the DECNIS.
- The maximum length is six characters.
- You must enter a load client name for each DECNIS port that will receive a downline load.

### 3.6.2 Hardware Address

This is the same as for DECnet/OSI load hosts. See Section 3.5.2.

### 3.6.3 MOP Circuit

This is the Ethernet routing circuit to be used for downline loading. Ethernet routing circuits are created during DECnet–VAX Extensions installation.

#### 3.6.3.1 Finding the Circuit Name

To find the routing (MOP) circuit name, follow these steps:

1. Enter the following NCP command:

```
NCP> SHOW KNOWN CIRCUIT
```

2. Choose an Ethernet routing circuit.

The load-host configurator will enable service on the circuit you enter, if it is not already enabled.

#### 3.6.3.2 Requirement for MOP Circuit

When you add or modify a DECNIS, and enter a MOP circuit name, the load-host configurator checks that the MOP circuit already exists. If it does not exist, the configurator will not let you continue.

The configurator does the same check when you restore or update a DECNIS. However, in these cases, if the MOP circuit does not exist, the configurator also does the following:

1. Translates the environment variable NIS$MOP_CIRCUIT. If this variable is defined, it is used as the MOP circuit name.

   To define the variable, enter:

   ```
   $ DEFINE/SYSTEM NIS$MOP_CIRCUIT circuit-name
   ```

2. If NIS$MOP_CIRCUIT is not defined, the configurator searches for an Ethernet circuit. If it finds one, it uses it as the MOP circuit.

Note that even if the specified MOP circuit does not exist, the MOP circuit entry in the load-host data file remains unchanged. This allows a DECNIS to be configured on one VAXcluster node, and then restored on a different VAXcluster node which has a different Ethernet device.

### 3.6.4 Phase IV Address

You must enter a Phase IV address for each DECNIS port that will receive a downline load. See Section 3.6.5.3 for details.

### 3.6.5 Port Name

Port name is the name of a DECNIS hardware port that will receive the downline loaded software. Note the following:

- You can enter the names of several hardware ports.
- Each port must be either a LANcontroller port or an FDDI port.

#### 3.6.5.1 Format of Port Name

For the LANcontroller cards, the format for the port name is:

*card-slot-port*

For the F621 card, the format for the port name is:

*card-slot/slot*

- *card* is an acronym for a Network Interface Card. Valid acronyms are:

| Acronym | Name of Network Interface Card |
|---|---|
| L601 | DEC LANcontroller 601 |
| L602 | DEC LANcontroller 602 |
| F621 | DECNIS FDDIcontroller 621 |

- *slot* is the number of the slot into which the Network Interface Card is inserted. Each slot has the slot number etched above it.

  The F621 card uses two slots. Enter the slots in the form *slot*/*slot*. For example, if the F621 card is in slots 4 and 5, enter the slot number as 4/5.

- *port* is the hardware port number.

  On the L601 and L602 cards, hardware port numbering starts from the top of the card, with 0.

Examples of port names are:

L601-3-0
F621-5/6

#### 3.6.5.2 Load Client Names and Port Names

You must enter the names of one (or more ports) on the DECNIS that you want to receive the downline load. For each port name, you must enter a separate load client name.

#### 3.6.5.3 Phase IV Addresses and Port Names

Note the following:

- On the first screen on which you enter a port name, enter the correct Phase IV address of the DECNIS.
- If you choose to enter further port names, enter a Phase IV address for each port name. You can use any Phase IV address that is not assigned to another DECnet node.

### 3.6.6 Type of Loading

This is the same as for DECnet/OSI load hosts, as described in Section 3.5.5.

### 3.6.7 Specifying a Dump File

This is the same as for DECnet/OSI load hosts, as described in Section 3.5.6.

### 3.6.8 Use of DNS by the Configurators

This is the same as for DECnet/OSI load hosts, as described in Section 3.5.7.

### 3.6.9 DNS Node Name (DECdns Users Only)

This is the same as for DECnet/OSI load hosts, as described in Section 3.5.8.

### 3.6.10 DNS Node Synonym (DECdns Users Only)

If you wish, enter the DECnet Phase IV node name of the DECNIS. It must be the same as the load client name associated with the first port name you entered.

## 3.7 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.

### 3.7.1 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:
  SYS$COMMON:[MOM$SYSTEM]NIS_*load-client-name*.NCL_OLD
- The CMIP file for the deleted DECNIS is renamed:
  SYS$COMMON:[MOM$SYSTEM]NIS_*load-client-name*.CMIP_OLD
- The data file for the deleted DECNIS is renamed:
  SYS$COMMON:[MOM$SYSTEM]NIS_*load-client-name*.DAT_OLD

where *load-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

## 3.8 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.

### 3.8.1 Information that Cannot Be Modified

The only DECNIS load information you cannot modify is:

- The load client name.
- On DECnet–VAX Extensions load hosts, port information. If you want to change port information, you must delete the port and add it again, with the changed information.

### 3.8.2 Running the DECNIS Configurator After Modifying

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

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

### 3.8.3 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 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 image/CMIP /profile file.

#### 3.8.3.1 Results of Changing Back to Load Host Loading

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

## 3.9 Restore a Router

The Restore option reissues the NCL or NCP 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.

### 3.9.1 Automatic Restore

To use automatic Restore, enter the following:

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

## 3.10 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.

### 3.10.1 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 3.10.1.1 to Section 3.10.1.3. 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 3.8.3.

#### 3.10.1.1 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
```

#### 3.10.1.2 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:

```
$ NIS$HOST_CONFIG UPDATE FLASH_PART
```

#### 3.10.1.3 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.

```
$ NIS$HOST_CONFIG UPDATE NETWORK
```

## 3.11 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 configurator. See Section 4.5 for details.

## 3.12 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 following log file:

MOM$SYSTEM:NIS_DECNIS.LOG

## 3.13 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:

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

### 3.13.1 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.

## 3.14 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 3.13.
- Issues NCL or NCP commands to set up load details, and enters the commands in permanent configuration files.
- If you have entered DNS information during load-host configuration, sets up DNS information for the DECNIS in the DNS namespace.

# 4

# Starting the DECNIS Configurator: OpenVMS Load Hosts

## 4.1 Introduction to the DECNIS Configurator

The DECNIS configurator is a utility supplied with the DECNIS. You use the DECNIS 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.

## 4.2 Before You Start

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

1. Check Section 2.5.5. This gives the terminal settings required to run both the load-host configurator and the DECNIS 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 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**

| Key | Function |
|---|---|
| Up Arrow | Moves the cursor to the field above |
| Down Arrow | Moves the cursor to the field below |
| Left Arrow | Moves the cursor to the left in a field |
| Right Arrow | Moves the cursor to the right in a field |
| Enter or Return | Enters the option you have chosen |
| Help or PF2 | Gives you help on a field or section |
| F10 | Takes you out of Help and back to entering data |
| F8 | Takes you out of the configurator without saving any data |
| Prev Screen | Takes you to the previous data entry screen in a section |
| Next Screen | Takes you 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 | Removes all text in a field |
| Ctrl/W | Refreshes the screen |
| <X | Deletes the character to the left of the cursor |
| F7 | Moves 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 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 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 |

## 4.6 More Information About the DECNIS Configurator

For more information about running the DECNIS configurator, see the manual *DECNIS Configuration and Loading*.

# Part II

## ULTRIX and DEC OSF/1 Load Hosts: Installation and Configuration

This part describes how to do the following on ULTRIX and DEC OSF/1 load hosts:

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

It contains the following chapters:

- Chapter 5 describes how to install the DECNIS software on ULTRIX and DEC OSF/1 load hosts.
- Chapter 6 describes how to configure ULTRIX and DEC OSF/1 load hosts for downline loading to the DECNIS.
- Chapter 7 describes additional steps needed to set up ULTRIX and DEC OSF/1 load hosts for BOOTP loading.
- Chapter 8 describes how to start the DECNIS configurator on ULTRIX and DEC OSF/1 load hosts.

# 5

# Installing: ULTRIX and DEC OSF/1 Load Hosts

This chapter describes how to install the DECNIS software on ULTRIX and DEC OSF/1 load hosts.

## 5.1 ULTRIX Background Information

The following table gives the background information needed before you install the DECNIS software on ULTRIX load hosts.

| Item | Value/Description |
|---|---|
| Prerequisite software | ULTRIX and DEC OSF/1 V4.2 (or later). For BOOTP loading, subset UDTINET 4.2 or later. |
| | DECnet/OSI for ULTRIX V5.1 (or later), with the following subsets: DNPBASE5*nm* (DECnet/OSI base components), DNPMOP5*nm* (DECnet/OSI MOP Utilities) and DNPNETMAN5*nm* (DECnet/OSI Network Management) where *n* is 1–9 and *m* is 0–9 |
| Prerequisite hardware | RISC system with VT220 or later terminal, or DECstation™ running DECwindows |
| | DECNIS hardware unit |
| Kit description | 1 TK50 or 1 mag tape |
| 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 | 14,000 Kbytes + 25,000 Kbytes per dump |
| Time required for installation | 10 minutes |
| Backup procedures | Back up system before installing the software |

## 5.2 DEC OSF/1 Background Information

The following table gives the background information needed before you install the DECNIS software on DEC OSF/1 load hosts.

| Item | Value/Description |
|---|---|
| Prerequisite software | DEC OSF/1 V1.3 (or later). For BOOTP loading, subset OSFINET1*n*, where *n* is 2–9 |
| | DECnet/OSI for DEC OSF/1 AXP™ V1.1 (or later), with the following subsets: DNABASE1*nm* (DECnet /OSI base components), DNAMOP1*nm* (DECnet/OSI MOP Utilities) and DNANETMAN1*nm* (DECnet/OSI Network Management) where *n* is 0–9 and *m* is 0–9 |
| Prerequisite hardware | Alpha AXP system |
| | DECNIS hardware unit |
| Kit description | 1 TK50 or 1 mag tape |
| 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 | 14,000 Kbytes + 25,000 Kbytes per dump |
| Time required for installation | 10 minutes |
| Backup procedures | Back up system before installing the software |

## 5.3 ULTRIX and DEC OSF/1 Installation Procedure

To install the DECNIS software on ULTRIX and DEC OSF/1 load hosts, do the following:

| Step | Action |
|---|---|
| 1 | Issue the following commands: |
| | `# cd /`<br>`# 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 |

## 5.4 ULTRIX and DEC OSF/1 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: ULTRIX and DEC OSF/1**

| 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/nis023.release_notes |
| *DECNIS Problem Solving* manual | /usr/lib/dxbook/decnispsg.decw_book |
| Bookshelf for *DECNIS Problem Solving* | /usr/lib/dxbook/decnispsg.decw_bookshelf |

### 5.4.1 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.

## 5.5 After Installation

This section describes postinstallation tasks.

### 5.5.1 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 6.
2. Run the DECNIS configurator, as described in Chapter 8 and the manual *DECNIS Configuration and Loading*.

### 5.5.2 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 6.9.
2. Start the DECNIS 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 an image/CMIP/profile file, depending on what is displayed on the menu.
8. Repeat steps 2 to 7 for each DECNIS that will use the new version of the software.
9. Reload your DECNISs, as described in the manual *DECNIS Configuration and Loading*.

### 5.5.3 Verifying the Installation

#### 5.5.3.1 ULTRIX Load Hosts

To verify the installation, enter the following:

```
# setld -v NIRNIS230
```

#### 5.5.3.2 DEC OSF/1 Load Hosts

To verify the installation, enter the following:

```
# setld -v NIANIS230
```

### 5.5.4 Deleting Installed Files

#### 5.5.4.1 ULTRIX Load Hosts

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

```
# setld -d NIRNIS230
```

#### 5.5.4.2 DEC OSF/1 Load Hosts

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

```
# setld -d NIANIS230
```

### 5.5.5 Checking Your Terminal Setup

In order to run the load-host configurator and the DECNIS configurator, you must use one of the types of terminal listed in Section 5.5.5.1, and set up the terminal as described in Section 5.5.5.2.

#### 5.5.5.1 Type of Terminal

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

- A VT220 (or later) terminal
- For ULTRIX load hosts, a terminal window on a DECstation
- For DEC OSF/1 load hosts, a terminal window on an Alpha AXP workstation

#### 5.5.5.2 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**.

### 5.5.6 Reporting Problems

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

# 6

# Using the Load-Host Configurator: ULTRIX and DEC OSF/1 Load Hosts

This chapter describes how to use the load-host configurator to configure the DECNIS to load from ULTRIX and DEC OSF/1 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 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

ULTRIX and DEC OSF/1 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 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
```

## 6.3 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.

## 6.4 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. 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 the following:

   - ULTRIX load hosts can only use BOOTP if the optional subset UDTINET42 (or later) is installed.
   - DEC OSF/1 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.

## 6.5 Load Information

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

### 6.5.1 Load Client Name

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

#### 6.5.1.1 Finding the Load Client Name

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

- The name must be unique to this DECNIS.
- The maximum length of the name is 32 characters.

### 6.5.2 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

#### 6.5.2.1 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.

### 6.5.3 MOP Circuit (MOP Loading Only)

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

#### 6.5.3.1 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.

#### 6.5.3.2 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.

### 6.5.4 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.

### 6.5.5 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

### 6.5.6 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
```

#### 6.5.6.1 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.

#### 6.5.6.2 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.

### 6.5.7 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_*load-client-name*.dmp

It is important to check that there is enough disk space on your load host to receive dumps. The tables in Section 5.1 and Section 5.2 show the amount of disk space required for dumps.

## 6.5.8 Use of DNS by the Configurators

The load-host configurator asks the question:

```
You can choose whether or not the configurators use
information in the DECdns namespace 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 DECdns to be used?   No   Yes
```

This section explains how you decide what to answer.

### 6.5.8.1 Background: the DECNIS and DECdns

The DECNIS does not use DNS 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.

### 6.5.8.2 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 configurator uses DNS or local namespace lookups to generate the commands.

  In this case, you must supply a DNS 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.

## 6.5.9 DNS Node Name (DECdns Users Only)

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

### 6.5.10 DNS Node Synonym (DECdns Users Only)

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

The DNS node synonym is optional.

## 6.6 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.

### 6.6.1 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:

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

- The CMIP file for the deleted DECNIS is renamed:

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

- The data file for the deleted DECNIS is renamed:

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

where *load-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

## 6.7 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.

### 6.7.1 Information that Cannot Be Modified

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

### 6.7.2 Running the DECNIS Configurator After Modifying

You must rerun the DECNIS 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 configurator.

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

### 6.7.3 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 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 image/CMIP/profile file.

#### 6.7.3.1 Results of Changing Back to Load Host Loading

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

## 6.8 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.

### 6.8.1 Automatic Restore

To use automatic Restore, enter the following:

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

## 6.9 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.

### 6.9.1 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 6.9.1.1 to Section 6.9.1.3. 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 6.7.3.

#### 6.9.1.1 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
```

#### 6.9.1.2 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
```

#### 6.9.1.3 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
```

## 6.10 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 configurator. See Section 8.5 for details.

## 6.11 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 log file:

/usr/lib/dnet/nis_decnis.log

## 6.12 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:

/usr/lib/dnet/nis_host_config.dat

### 6.12.1 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.

## 6.13 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 6.12.
- 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 DNS information during load-host configuration, sets up DNS information for the DECNIS in the DNS namespace.

# 7

# Setting Up BOOTP on Load Hosts

## 7.1 Introduction

This chapter describes how to set up ULTRIX and DEC OSF/1 load hosts for BOOTP loading.

## 7.2 Setting Up ULTRIX Systems for BOOTP Loading

To set up ULTRIX 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. If your load host is not already configured as a BOOTP server, ensure that the BOOTP and TFTP daemons are started on system startup. To do this, follow these steps:
   a. Edit the file /etc/services to include the following lines:

      ```
      bootp       67/udp
      tftp        69/udp
      ```

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

      ```
      bootp dgram udp wait /usr/etc/bootpd bootpd -i
      tftp dgram udp wait /usr/etc/tftpd tftpd
      ```

3. If you wish, set up TFTP to start in restricted mode, as described in Section 7.2.2.

### 7.2.2 Starting TFTP in Restricted Mode

You may wish to start the TFTP daemon on the load host using restricted mode (also known as the -r *directory* option). This is a security feature. It ensures that only the directory tree starting with *directory* is searched for the load files.

To use this feature, follow the steps below.

1. On the load host, create the following directory:

   */directory/load-directory*

   where: *directory* is at the top of the directory tree to be searched

   *load-directory* is the directory in which the load files are stored, as specified by /etc/bootptab

2. Copy the load files to *load-directory*. The load files can be either of the following:
   - The software image, CMIP file and profile files
   - The combined image/CMIP/profile file
3. Start TFTP by entering -r *directory*.

#### 7.2.2.1 Example

In this example:

| | |
|---|---|
| tftp | is *directory* (the directory at the top of the directory tree) |
| /usr/local/bootfiles | is *load-directory* (the directory in which the load files are stored) |
| nis_north1 | is the load client name of the DECNIS |

You have specified that the DECNIS load all files from the load host.

Follow these steps:

1. Create a directory called /tftp/usr/local/bootfiles.
2. In the file /etc/bootptab, specify that the load files are in /usr/local/bootfiles.
3. Copy the software image and load files to /usr/local/bootfiles, as follows:

```
# cp /usr/lib/mop/nis022.sys\
/tftp/usr/local/bootfiles/system.nis_north1

# cp /usr/lib/mop/nis_load-client-name.cmip\
/tftp/usr/local/bootfiles/script.nis_north1

# cp /usr/lib/mop/digital/fcns/mcnm_prf\
/tftp/usr/local/bootfiles/mcnm_prf

# cp /usr/lib/mop/digital/fcns/x25l2_prf\
```

```
/tftp/usr/local/bootfiles/x25l2_prf

# cp /usr/lib/mop/digital/fcns/x25l3_prf\
/tftp/usr/local/bootfiles/x25l3_prf
```

4. Start TFTP by entering `-r tftp`

## 7.3 Setting Up DEC OSF/1 Systems for BOOTP Loading

To set up DEC OSF/1 systems for BOOTP loading, check the steps in Section 7.3.1.

### 7.3.1 Basic Steps

1. When you run the load-host configurator, select either `BOOTP` or `MOP and BOOTP`.
2. If your load host is not already configured as a BOOTP server, ensure that the BOOTP and TFTP daemons are started on system startup. To do this, 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
   ```

## 7.4 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 DECnet/OSI for ULTRIX 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 either a combined image/CMIP/profile file or a CMIP file for each DECNIS. Refer to *DECNIS Configuration and Loading* for details.
4. Copy either the combined image/CMIP/profile file, or the software image and the CMIP and profile files, to the UNIX load host.

5. 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: ULTRIX and DEC OSF/1 Load Hosts

## 8.1 Introduction to the DECNIS Configurator

The DECNIS configurator is a utility supplied with the DECNIS. You use the DECNIS 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.

## 8.2 Before You Start

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

1. Check Section 5.5.5. This gives the terminal settings required to run both the load-host configurator and the DECNIS 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 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 ULTRIX and DEC OSF/1 Configurator Keys**

| Key | Function |
|---|---|
| Up Arrow | Moves the cursor to the field above |
| Down Arrow | Moves the cursor to the field below |
| Left Arrow | Moves the cursor to the left in a field |
| Right Arrow | Moves the cursor to the right in a field |
| Enter or Return | Enters the option you have chosen |
| Help or PF2 | Gives you help on a field or section |
| F10 | Takes you out of Help and back to entering data |
| F8 | Takes you out of the configurator without saving any data |
| Prev Screen | Takes you to the previous data entry screen in a section |
| Next Screen | Takes you 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 | Removes all text in a field |
| Ctrl/W | Refreshes the screen |
| <X | Deletes the character to the left of the cursor |
| F7 | Moves 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 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 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 |

## 8.6 More Information About the DECNIS Configurator

For more information about running the DECNIS configurator, see the manual *DECNIS Configuration and Loading*.

# 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–VAX Extensions
  - DECnet/OSI for ULTRIX
  - DEC OSF/1
- 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 ULTRIX load hosts.
- Appendix E is an example log of an installation on an ULTRIX load host.
- Appendix F lists the files installed on DEC OSF/1 load hosts.
- Appendix G is an example log of an installation on a DEC OSF/1 load host.

# A

# Information Required for Load-Host Configuration

Table A–1 and Table A–2 list 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–VAX Extensions Load Hosts**

| Information Required | Notes | R(equired)/ O(ptional) | Default | Your Value |
|---|---|---|---|---|
| Type of DECNIS | Select from list | R | – | |
| Load client name | DECnet Phase IV node name of the DECNIS. Max. 6 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 | Routing circuit used to load the DECNIS. Examples: SVA-0, QNA-0 | R | – | |
| DECnet Phase IV address of DECNIS | *Area number.node number* Example: 2.43 | R | – | |
| Port name | DECNIS hardware port to receive loads. Examples: L601-3-0, F621-4/5 | R | – | |
| Type of loading | Select one: load host for CMIP, nonvolatile memory for image; nonvolatile memory for both CMIP and image; load host for both CMIP and image | R | Nonvolatile memory for both CMIP and image | |
| Create a dump file? | Select Yes or No | R | – | |
| Should configurator use DNS? | Select Yes or No | R | No | |
| DNS node name | Full DNS node name of DECNIS | R if DNS chosen | – | |
| DNS node synonym | DECnet Phase IV node name of the DECNIS. Max. 6 characters. Use the same name as entered for the load client name. | O | – | |

**Table A–2 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 CMIP and image; load host for CMIP, nonvolatile memory for image; load host for both CMIP and image | R | Nonvolatile memory for both CMIP and image | |
| Create a dump file? | Select Yes or No | R | – | |
| Should configurator use DNS? | Select Yes or No | R | Yes | |
| DNS node name | Full DNS node name of DECNIS | R if DNS chosen | – | |
| DNS node synonym | An alternative name by which the DECNIS will be known to DNS on the network. Max. 6 characters | O | – | |

## A.1 Dump File Names

The dump file names are:

- For OpenVMS systems:
  SYS$COMMON:[MOM$SYSTEM]NIS_*load-client-name*.DMP
- For ULTRIX and DEC OSF/1 systems:
  /usr/lib/mop\nis_*load-client-name*.dmp

# 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$HELP Directory

- NCLHELP.HLP—NCL help
- W3_NCL_HELP.HLP—NCL help for DECnet/OSI for OpenVMS systems
- NIS023.RELEASE_NOTES–Release Notes
- NIS$HOST_HELP.BIN—Load-host configurator help
- NIS$DECNIS_CONFIG_HELP.BIN—DECNIS configurator help
- NIS$EVENTS.TXT—Event messages
- FCNS$NI.TXT—Documentation for X.25 network profiles

### B.2.2 SYS$EXAMPLES Directory

- NIS$NCL_EXAMPLE.NCL—NCL examples
- NIS$OSPF_EXAMPLE1.NCL—OSPF NCL examples
- NIS$OSPF_EXAMPLE2.NCL—OSPF NCL examples
- NIS$OSPF_EXAMPLE3.NCL —OSPF NCL examples
- DEC_ELAN_MIB.V27_TXT—DEC specific MIB

### B.2.3 MOM$SYSTEM Directory

- NIS023.SYS—System image
- NIS$TEST_SCRIPT.NCL—Test script
- NIS$IMAGES.DAT —List of supported NIS images
- 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

### B.2.4 SYS$TEST Directory

- NIS$IVP.COM—Installation verification procedure

### B.2.5 SYS$MANAGER Directory

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

### B.2.6 SYS$SYSTEM Directory

- NIS$PROVIDE_NCL.EXE—Updates the NCL parse tables available to the NCL utility
- NIS$SCRIPT_COMPILER.EXE—CMIP file creation program
- NIS$HOST_CONFIG.EXE—Load-host configurator
- NIS$DECNIS_CONFIG.EXE—DECNIS configurator program
- NIS$FLASH.EXE—Flash compression utility
- NIS$BRIDGE_MGMT.EXE—Bridge management utility

### B.2.7 SYS$MESSAGE Directory

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

### B.2.8 DECW$BOOK Directory

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

## B.3 Optional Files

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

### B.3.1 SYS$LIBRARY Directory

- CTF$*.*—To enable tracing using the Common Trace Facility
- NCLPRS.BIN—Parsing information for the bridge management utility
- NCL_PROTOID.MAP—Protocol identifiers for the bridge management utility
- NCL_DICTIONARY.DAT—Parse tables for the bridge management utility
- NIS$GLOBALSECTION_WAVE1.DAT—NCL global section for DECnet–VAX Extensions load hosts.
- NCL$GLOBALSECTION_WAVE2.DAT—NCL global section for DECnet /OSI for OpenVMS load hosts

### 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 an OpenVMS load host.

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

```
$ sys$update:vmsinstal

        VAX/VMS Software Product Installation Procedure V5.5-2

It is 26-JAN-1994 at 10:37.

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: decnis$v23_export:

Enter the products to be processed from the first distribution volume set.
* Products: nis023
* Enter installation options you wish to use (none):

The following products will be processed:

  NIS V2.3


        Beginning installation of NIS V2.3 at 10:38

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

     DEC Network Integration Server T2.3 Installation Procedure.
     ) Digital Equipment Corporation, 1993.  All rights reserved.

     You should read the Release Notes immediately AFTER installing
     this product.  The release notes for the DECNIS are in a file
     called NIS023.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 ...

%NIS-I-PROVIDING, PROVIDING TAILORING - Providing DECNIS deinstallation
routines

%NIS-I-PROVIDING, PROVIDING IMAGE - Providing DECNIS Image and Configuration
programs

%NIS-I-PROVIDING, INSERTING HELP - Inserting DECNIS help into NCL help library

%NIS-I-PROVIDING, PROVIDING NCL - Providing NCL support for DECNIS

NCL$GLOBALSECTION.DAT will be renamed to DSA10:[SYS4.syscommon.][SYSLIB]N
CL$GLOBALSECTION.OLD

NIS$GLOBALSECTION.DAT will be renamed to DSA10:[SYS4.syscommon.][SYSLIB]N
IS$GLOBALSECTION.OLD

%NIS-I-PROVIDING, CTF SUPPORT - Providing CTF support for DECNIS

%NIS-I-PROVIDING, PROVIDING FLASH - Providing Flash support for DECNIS

%NIS-I-PROVIDING, BRIDGE MANAGEMENT - Providing Bridge Entity management utility


%NIS-I-PROVIDING, MCC CUSTOMIZING - Providing customization file for
DECmcc Applications menu

%NIS-I-MCC_CUSTOMIZING, Providing customization file for
DECmcc Applications menu

%NIS-I-PROVIDING, DOCUMENTATION - Providing DECNIS documentation

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

%NIS-I-MCC_CUSTOMIZING, Adding DECNIS Configurators to MCC Applications menu

   Application <=====   DECNIS Load Host Configurator <==== already exists
   Application <=====   DECNIS Configurator <==== already exists

    Beginning the DECNIS T2.3 Installation Verification Procedure.
    Copyright Digital Equipment Corporation, 1993. 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

                          LOAD HOST CONFIGURATION

    Copyright Digital Equipment Corporation 1989,1993. 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 252.227-1013, or in FAR 52.227-19, or in FAR 52.227-14
    Alt. III, as applicable. Unpublished rights reserved under applicable
    copyright laws.

    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.

         Press RETURN to continue

Reading in the help file, sys$help:nis$host_help.bin.
The help file, sys$help:nis$host_help.bin, has been read in.

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                          LOAD HOST CONFIGURATION

                             Introduction

         You use this program to enter information in the load-host
         data file. This information enables supported routers to be
         downline loaded from this load host.

         Press RETURN to continue

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit
```

```
                        LOAD HOST CONFIGURATION

                            Main Menu

                        Add a router
                        Delete a router
                        Modify a router
                        List a router
                        Update a router
                        Restore a router
                        Exit this program




Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

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    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 252.227-1013, or in FAR 52.227-19, or in FAR 52.227-14
    Alt. III, as applicable. Unpublished rights reserved under applicable
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    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.

         Press RETURN to continue

Reading in the help file, sys$help:nis$decnis_config_help.bin.
The help file, sys$help:nis$decnis_config_help.bin, has been read in.

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

                                  Introduction

         This procedure allows you to configure a DEC Network
         Integration Server system.

         The procedures take you through a series of menus and data
         entry screens. They allow you to change or delete the data
         you enter.
```

```
         When you have provided all the information required, the
         procedures will create an NCL initialization script for
         your system.

         Press RETURN to continue


Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

                                   Main Menu

                         Create a new configuration

                         Modify an existing configuration

                         Exit from this procedure




Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit


        This procedure will now execute the Script Compiler.

        The file MOM$SYSTEM:NIS$TEST_SCRIPT.LOG contains a  log of the
        script compilation.

        If any errors appear in this log, you should consider the IVP to
        have failed.

        The IVP will search this log for errors, and report that it has
        completed with errors if any are found.

        NCL errors are indicated by the message :

            Command failed due to:
            <failure reason message lines>

            Running the Script Compiler...

%NCL-I-PRIVATESECTION, using private parse table section

%SEARCH-I-NOMATCHES, no strings matched

        This procedure will now execute the Image Compression utility.
```

```
        This utility builds compressed images which can then be loaded
        into nvram within the DECNIS, removing the need for the DECNIS
        to load its software from the network.

        Performing test compression, please wait...

Compress Done - Image version 2.3-83

The DECNIS T2.3 Installation Verification Procedure
has completed successfully.

        Installation of NIS V2.3 completed at 11:04

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

# D

# Files Installed on ULTRIX Load Hosts

## D.1 Introduction

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

| Pathname and File | Description |
|---|---|
| /etc/bootptab.default | Default bootptab file |
| /usr/bin/ncl.nis230 | NCL image |
| /usr/etc/bootpd.nis | BOOTP daemon |
| /usr/etc/dnaevld.nis230 | Event logger for DECnet |
| /usr/lib/dna/dict/ncl_dna5_bridge.dd | Bridge module |
| /usr/lib/dna/dict/ncl_dna5_bridge.ms | Bridge module text file |
| /usr/lib/dna/dict/ncl_dna5_chdlc.dd | CHDLC module |
| /usr/lib/dna/dict/ncl_dna5_chdlc.ms | CHDLC module text file |
| /usr/lib/dna/dict/ncl_dna5_csmacd.dd | CSMA-CD module |
| /usr/lib/dna/dict/ncl_dna5_csmacd.ms | CSMA-CD module text file |
| /usr/lib/dna/dict/ncl_dna5_fddi.dd | FDDI module |
| /usr/lib/dna/dict/ncl_dna5_fddi.ms | FDDI module text file |
| /usr/lib/dna/dict/ncl_dna5_frbs.dd | Frame relay module |
| /usr/lib/dna/dict/ncl_dna5_frbs.ms | Frame relay module text file |
| /usr/lib/dna/dict/ncl_dna5_hardware.dd | Hardware module |
| /usr/lib/dna/dict/ncl_dna5_hardware.ms | Hardware module text file |
| /usr/lib/dna/dict/ncl_dna5_hdlc.dd | HDLC module |
| /usr/lib/dna/dict/ncl_dna5_hdlc.ms | HDLC module text file |
| /usr/lib/dna/dict/ncl_dna5_lapb.dd | LAPB module |

| Pathname and File | Description |
|---|---|
| /usr/lib/dna/dict/ncl_dna5_lapb.ms | LAPB module text file |
| /usr/lib/dna/dict/ncl_dna5_mop.dd | MOP module |
| /usr/lib/dna/dict/ncl_dna5_mop.ms | MOP module text file |
| /usr/lib/dna/dict/ncl_dna5_node.dd | Node module |
| /usr/lib/dna/dict/ncl_dna5_node.ms | Node module text file |
| /usr/lib/dna/dict/ncl_dna5_ppp.dd | PPP module |
| /usr/lib/dna/dict/ncl_dna5_ppp.ms | PPP module text file |
| /usr/lib/dna/dict/ncl_dna5_routing.dd | Routing module |
| /usr/lib/dna/dict/ncl_dna5_routing.ms | Routing module text file |
| /usr/lib/dna/dict/ncl_dna5_snmp.dd | SNMP module |
| /usr/lib/dna/dict/ncl_dna5_snmp.ms | SNMP module text file |
| /usr/lib/dna/dict/ncl_x25_relay.dd | X.25 Relay module |
| /usr/lib/dna/dict/ncl_x25_relay.ms | X.25 Relay module text file |
| /usr/lib/dna/dict/bridge_module.hlp | Bridge module help |
| /usr/lib/dna/dict/csmacd_module.hlp | CSMA-CD module help |
| /usr/lib/dna/dict/device_module.hlp | Device module help |
| /usr/lib/dna/dict/fddi_module.hlp | FDDI module help |
| /usr/lib/dna/dict/frbs_module.hlp | Frame relay module help |
| /usr/lib/dna/dict/hardware_module.hlp | Hardware module help |
| /usr/lib/dna/dict/mop_module.hlp | MOP module help |
| /usr/lib/dna/dict/ppp_module.hlp | PPP module help |
| /usr/lib/dna/dict/routing_module.hlp | Routing module help |
| /usr/lib/dna/dict/session_module.hlp | Session control module help |
| /usr/lib/dnet/dec_elan_mib.v27_txt | DEC Vendor MIB |
| /usr/lib/dnet/fcns_ni.txt | X.25 Network information |
| /usr/lib/dnet/nis023.release_notes | Release notes |
| /usr/lib/dnet/nis_decnis_config | DECNIS configurator |
| /usr/lib/dnet/nis_decnis_config.bin | DECNIS configurator messages |
| /usr/lib/dnet/nis_decnis_config_help.bin | DECNIS configurator help |
| /usr/lib/dnet/nis_decnis_ncl_template.bin | NCL template |
| /usr/lib/dnet/nis_events.txt | Event messages text |

| Pathname and File | Description |
|---|---|
| /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_image_compress | Shell script for image compression utility |
| /usr/lib/dnet/nis_ivp | Installation verification procedure |
| /usr/lib/dnet/nis_script_compile | Script compiler |
| /usr/lib/dnet/nis_example.ncl | Example NCL script |
| /usr/lib/dnet/nis_ospf_example1.ncl | OSPF example NCL script |
| /usr/lib/dnet/nis_ospf_example2.ncl | OSPF example NCL script |
| /usr/lib/dnet/nis_ospf_example3.ncl | OSPF example NCL script |
| /usr/lib/dnet/nis_images.dat | System image |
| /usr/lib/dnet/mcc_add_applications.sh_new.dat | 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/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/nis023.sys | System image |
| /usr/man/man8/nis_decnis_config.8 | Configurator manpages |
| /usr/man/man8/nis_host_config.8 | Load-host manpages |
| /usr/man/man8/nis_image_compress.8 | Compression utility manpages |
| /usr/man/man8/nis_script_compile.8 | NCL script compiler manpages |
| /usr/mcc/mcc_appl_decnis.def | Customization file for DECmcc application menu DECmcc V1.3 |

# E

# Example Installation on an ULTRIX Load Host

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

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

```
# setld -l . NIRNIS230
*******************************************************************************

        The Event Dispatcher (dnaevld) is running on this system.

This installation modifies the data dictionary used by ncl and the event
dispatcher.  This requires that the event dispatcher be restarted.

If you choose to *CONTINUE* with the installation, the event dispatcher will
be left running during the installation, but will be *KILLED* and *RE-STARTED*
when the data dictionary has been updated.

Any events received while the data dictionary is being modified will be lost.
*******************************************************************************

Do you wish to continue with the installation? (y/n) [y]: y

                        ----------------------------
The event dispatcher will be killed when the dictionary has been updated and
will be restarted using /etc/dna/start_event_dispatcher.ncl
                        ----------------------------
```

```
*************************************************************************
*  DEC Network Integration Server V2.3 Installation Procedure           *
*                                                                       *
*  Copyright Digital Equipment Corporation. 1993. All rights reserved.  *
*                                                                       *
*  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.                                             *
*                                                                       *
*                                                                       *
*  NIRNIS230 Installation started at Wed 26 Jan 1994, 10:06:35          *
*                                                                       *
*************************************************************************

 Installing an ULTRIX (RISC) kit onto an ULTRIX (RISC) system

Saving /usr/lib/dna/dict/bridge_module.hlp...
Saving /usr/lib/dna/dict/csmacd_module.hlp...
Saving /usr/lib/dna/dict/fddi_module.hlp...
Saving /usr/lib/dna/dict/frbs_module.hlp...
Saving /usr/lib/dna/dict/hardware_module.hlp...
Saving /usr/lib/dna/dict/mop_module.hlp...
Saving /usr/lib/dna/dict/ppp_module.hlp...
Saving /usr/lib/dna/dict/routing_module.hlp...
Saving /usr/lib/dna/dict/device_module.hlp...
Saving /usr/lib/dna/dict/session_module.hlp...

DECNIS V2.3 for RISC ULTRIX (NIRNIS230)
   Copying from . (disk)
        Working....Wed Jan 26 10:06:58 GMT 1994
   Verifying

Do you want to run the IVP after the installation? (y/n) [y]: 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.
mkdir: /usr/lib/mop/digital/FCNS: File exists
/usr/lib/mop/digital/FCNS/MCNM_PRF: File exists
/usr/lib/mop/digital/FCNS/X25L2_PRF: File exists
/usr/lib/mop/digital/FCNS/X25L3_PRF: File exists

mcc_add_applications:  Application 'DECNIS Load Host Configurator'
                       already exists.  No changes made to resource file.

mcc_add_applications:  Application 'DECNIS Configurator'
                       already exists.  No changes made to resource file.
```

```
        No further questions will be asked until the IVP phase.

Killing the Event Dispatcher daemon (dnaevld)...

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

**** Checking dates of data dictionary source files ****
**** Installing (newer) kit file: ncl_dna5_bridge.dd...
**** Installing (newer) kit file: ncl_dna5_fddi.dd...
**** Installing (newer) kit file: ncl_dna5_frbs.dd...
**** Installing (newer) kit file: ncl_dna5_hardware.dd...
**** Installing (newer) kit file: ncl_dna5_ppp.dd...
**** Installing (newer) kit file: ncl_dna5_routing.dd...
**** Installing (newer) kit file: ncl_dna5_x25_relay.dd...
**** Installing (newer) kit file: ncl_dna5_csmacd.dd...
**** Installing (newer) kit file: ncl_dna5_chdlc.dd...
**** Installing (newer) kit file: ncl_dna5_hdlc.dd...
**** Installing (newer) kit file: ncl_dna5_mop.dd...
**** Installing (newer) kit file: ncl_dna5_node.dd...
**** Installing (newer) kit file: ncl_dna5_snmp.dd...
**** Installing (newer) kit file: ncl_dna5_lapb.dd...
**** Modifying /usr/lib/dna/dict/ddfiles to add DECNIS-relevant NCL entities
/usr/lib/dna/dict/ddfiles updated

*** New DECNIS NCL entities successfully added into /usr/lib/dna/dictionary.dat

***** Starting dnaevld image...
*** Modifying /usr/lib/dna/dict/helpfiles to add DECNIS help entities
*** /usr/lib/dna/dict/helpfiles updated - now re-making /usr/lib/dna/ncl_help.txt..
/usr/lib/dna/ncl_help.txt updated

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

    Beginning DECNIS V2.3 Installation Verification Procedure (IVP)
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   ...all component files for the DECNIS subset verified present.

                ----------------------------
Checking version numbers of installed software...

        Software Image.............DECNIS T2.3-83
        HOST Configurator..........DECNIS Host Configurator Version T2.3-83
        DECNIS Configurator........DECNIS Configurator Version T2.3-83

    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

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    license from Digital or an authorized sublicensor.

         Press RETURN to continue

Reading in the help file, /usr/lib/dnet/nis_host_help.bin.
The help file, /usr/lib/dnet/nis_host_help.bin, has been read in.

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                            LOAD HOST CONFIGURATION

                               Introduction

         You use this program to enter information in the load-host
         data file. This information enables supported routers to be
         downline loaded from this load host.

         Press RETURN to continue




Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                            LOAD HOST CONFIGURATION

                                Main Menu
```

```
                          Add a router
                          Delete a router
                          Modify a router
                          List a router
                          Update a router
                          Restore a router
                          Exit this program




Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                               DECNIS CONFIGURATION

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    software and media is authorized only pursuant to a valid written
    license from Digital or an authorized sublicensor.

         Press RETURN to continue

Reading in the help file, /usr/lib/dnet/nis_decnis_config_help.bin.
The help file, /usr/lib/dnet/nis_decnis_config_help.bin, has been read in.

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                               DECNIS CONFIGURATION

                                   Introduction

         This procedure allows you to configure a DEC Network
         Integration Server system.

         The procedures take you through a series of menus and data
         entry screens. They allow you to change or delete the data
         you enter.

         When you have provided all the information required, the
         procedures will create an NCL initialization script for
         your system.
```

```
         Press RETURN to continue


Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

                                   Main Menu

                         Create a new configuration

                         Modify an existing configuration

                         Exit from this procedure




Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit




   Checking the image compression 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

Creating a compressed image

Compress Done - Image version 2.3-83
Successfully created the compressed image

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

        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 NIRNIS230

        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.  nis023.release_notes in /usr/lib/dnet

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


  ***************************************************************************
  **                                                                       **
  ***  NIRNIS230 Installation Completed at Wed 26 Jan 1994, 10:10:24  ***
  **                                                                       **
  ***************************************************************************
```

# F

# Files Installed on DEC OSF/1 Load Hosts

## F.1 Introduction

This appendix lists the files installed on an OSF/1 load host by the DECNIS installation procedure.

| Pathname and File | Description |
|---|---|
| /etc/bootptab.default | Default bootptab |
| /usr/bin/ncl.nis230 | NCL image |
| /usr/etc/bootpd.nis | BOOTP daemon |
| /usr/lib/dnet/dec_elan_mib.v27_txt | DEC Vendor MIB |
| /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/nis023.release_notes | Release notes |
| /usr/lib/dnet/nis_decnis_config | DECNIS configurator |
| /usr/lib/dnet/nis_decnis_config.bin | DECNIS configurator messages |
| /usr/lib/dnet/nis_decnis_config_help.bin | DECNIS configurator help |
| /usr/lib/dnet/nis_decnis_ncl_template.bin | NCL template |
| /usr/lib/dnet/nis_events.txt | Event messages text |
| /usr/lib/dnet/nis_example.ncl | Example NCL Script |
| /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 |

| Pathname and File | Description |
|---|---|
| /usr/lib/dnet/nis_image_compress | Shell script for image compression utility |
| /usr/lib/dnet/nis_images.dat | System image |
| /usr/lib/dnet/nis_ivp | Installation verification procedure |
| /usr/lib/dnet/nis_ospf_example1.ncl | OSPF NCL examples |
| /usr/lib/dnet/nis_ospf_example2.ncl | OSPF NCL examples |
| /usr/lib/dnet/nis_ospf_example3.ncl | OSPF NCL examples |
| /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/nis023.sys | DECNIS System image |
| /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_image_compress.8 | Compression 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/bridge_module.hlp | Bridge help |
| /usr/share/dna/dict/chdlc_module.hlp | CHDLC help |
| /usr/share/dna/dict/csmacd_module.hlp | CSMA-CD help |
| /usr/share/dna/dict/device_module.hlp | Device help |
| /usr/share/dna/dict/fddi_module.hlp | FDDI help |
| /usr/share/dna/dict/frbs_module.hlp | Frame relay help |
| /usr/share/dna/dict/hardware_module.hlp | Hardware help |
| /usr/share/dna/dict/mop_module.hlp | MOP help |
| /usr/share/dna/dict/ncl_dna5_bridge.dd | Bridge module |
| /usr/share/dna/dict/ncl_dna5_bridge.ms | Bridge module text file |
| /usr/share/dna/dict/ncl_dna5_chdlc.dd | CHDLC module |

| Pathname and File | Description |
|---|---|
| /usr/share/dna/dict/ncl_dna5_chdlc.ms | CHDLC module text file |
| /usr/share/dna/dict/ncl_dna5_csmacd.dd | CSMA-CD module |
| /usr/share/dna/dict/ncl_dna5_csmacd.ms | CSMA-CD module text file |
| /usr/share/dna/dict/ncl_dna5_fddi.dd | FDDI module |
| /usr/share/dna/dict/ncl_dna5_fddi.ms | FDDI module text file |
| /usr/share/dna/dict/ncl_dna5_frbs.dd | Frame relay module |
| /usr/share/dna/dict/ncl_dna5_frbs.ms | Frame relay module text file |
| /usr/share/dna/dict/ncl_dna5_hardware.dd | Hardware module |
| /usr/share/dna/dict/ncl_dna5_hardware.ms | Hardware module text file |
| /usr/share/dna/dict/ncl_dna5_hdlc.dd | HDLC module |
| /usr/share/dna/dict/ncl_dna5_hdlc.ms | HDLC module text file |
| /usr/share/dna/dict/ncl_dna5_lapb.dd | LAPB module |
| /usr/share/dna/dict/ncl_dna5_lapb.ms | LAPB module text file |
| /usr/share/dna/dict/ncl_dna5_mop.dd | MOP module |
| /usr/share/dna/dict/ncl_dna5_mop.ms | MOP module text file |
| /usr/share/dna/dict/ncl_dna5_node.dd | Node module |
| /usr/share/dna/dict/ncl_dna5_node.ms | Node module text file |
| /usr/share/dna/dict/ncl_dna5_ppp.dd | PPP module |
| /usr/share/dna/dict/ncl_dna5_ppp.ms | PPP module text file |
| /usr/share/dna/dict/ncl_dna5_routing.dd | Routing module |
| /usr/share/dna/dict/ncl_dna5_routing.ms | Routing module text file |
| /usr/share/dna/dict/ncl_dna5_snmp.dd | SNMP module |
| /usr/share/dna/dict/ncl_dna5_snmp.ms | SNMP module text file |
| /usr/share/dna/dict/ncl_dna5_x25_relay.dd | X.25 relay module |
| /usr/share/dna/dict/ncl_dna5_x25_relay.ms | X.25 relay module text file |
| /usr/share/dna/dict/ncl_module.hlp | NCL module help |
| /usr/share/dna/dict/ppp_module.hlp | PPP module help |
| /usr/share/dna/dict/routing_module.hlp | Routing module help |
| /usr/share/dna/dict/session_module.hlp | Session control module help |
| /usr/share/dna/dict/snmp_module.hlp | SNMP module help |
| /usr/share/dna/dict/w3_ncl_module.hlp | DECnet/OSI module help |

# G

# Example Installation on a DEC OSF/1 Load Host

This appendix contains an example installation of DECNIS software on an DEC OSF/1 load host.

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

```
# setld -l . NIANIS230
Checking file system space required to install specified subsets:
File system space checked OK.

******************************************************************************
*  DEC Network Integration Server V2.3 Installation Procedure            *
*                                                                        *
*  Copyright Digital Equipment Corporation. 1993. All rights reserved.   *
*                                                                        *
*  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.                                              *
*                                                                        *
*                                                                        *
*  NIANIS230 Installation started at Wed 26 Jan 1994, 10:19:49           *
*                                                                        *
******************************************************************************

    Installing DECnis DEC OSF/1 AXP kit onto a DEC OSF/1 AXP system
```

```
Saving original /etc/bootptab file.
Saving /usr/share/dna/dict/bridge_module.hlp...
Saving /usr/share/dna/dict/csmacd_module.hlp...
Saving /usr/share/dna/dict/fddi_module.hlp...
Saving /usr/share/dna/dict/frbs_module.hlp...
Saving /usr/share/dna/dict/hardware_module.hlp...
Saving /usr/share/dna/dict/mop_module.hlp...
Saving /usr/share/dna/dict/ppp_module.hlp...
Saving /usr/share/dna/dict/routing_module.hlp...
Saving /usr/share/dna/dict/device_module.hlp...
Saving /usr/share/dna/dict/chdlc_module.hlp...
Saving /usr/share/dna/dict/ncl_module.hlp...
Saving /usr/share/dna/dict/w3_ncl_module.hlp...
Saving /usr/share/dna/dict/snmp_module.hlp...
Saving /usr/share/dna/dict/session_module.hlp...

DECNIS V2.3 for DEC OSF/1 AXP
   Copying from . (disk)
        Working....Wed Jan 26 10:20:24 GMT 1994

   Verifying


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

        No further questions will be asked


**** 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.

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

**** Checking dates of data dictionary source files ****
**** Installing (newer) kit file: ncl_dna5_bridge.dd...
**** Installing (newer) kit file: ncl_dna5_fddi.dd...
**** Installing (newer) kit file: ncl_dna5_frbs.dd...
**** Installing (newer) kit file: ncl_dna5_hardware.dd...
**** Installing (newer) kit file: ncl_dna5_ppp.dd...
**** Installing (newer) kit file: ncl_dna5_routing.dd...
**** Installing (newer) kit file: ncl_dna5_x25_relay.dd...
**** Installing (newer) kit file: ncl_dna5_csmacd.dd...
**** Installing (newer) kit file: ncl_dna5_chdlc.dd...
**** Installing (newer) kit file: ncl_dna5_hdlc.dd...
**** Installing (newer) kit file: ncl_dna5_mop.dd...
**** Installing (newer) kit file: ncl_dna5_node.dd...
**** Installing (newer) kit file: ncl_dna5_lapb.dd...

** New DECNIS NCL entities successfully added into /usr/share/dna/dictionary.dat

/usr/share/dna/dict/helpfiles not found

                ----------------------------
```

```
    Beginning DECNIS V2.3 Installation Verification Procedure (IVP)
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   ...all component files for the DECNIS subset verified present.

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

Checking version numbers of installed software...

        Software Image.............DECNIS T2.3-83
        HOST Configurator..........DECNIS Host Configurator Version T2.3-83
        DECNIS Configurator........DECNIS Configurator Version T2.3-83

    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

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    software and media is authorized only pursuant to a valid written
    license from Digital or an authorized sublicensor.

         Press RETURN to continue

Reading in the help file, /usr/lib/dnet/nis_host_help.bin.
The help file, /usr/lib/dnet/nis_host_help.bin, has been read in.

Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit
```

```
                          LOAD HOST CONFIGURATION

                             Introduction

          You use this program to enter information in the load-host
          data file. This information enables supported routers to be
          downline loaded from this load host.

          Press RETURN to continue
```

```
Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit
                          LOAD HOST CONFIGURATION

                              Main Menu

                          Add a router
                          Delete a router
                          Modify a router
                          List a router
                          Update a router
                          Restore a router
                          Exit this program
```

```
Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                               DECNIS CONFIGURATION

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    software and media is authorized only pursuant to a valid written
    license from Digital or an authorized sublicensor.

         Press RETURN to continue
```

```
Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

                                  Introduction

         This procedure allows you to configure a DEC Network
         Integration Server system.

         The procedures take you through a series of menus and data
         entry screens. They allow you to change or delete the data
         you enter.

         When you have provided all the information required, the
         procedures will create an NCL initialization script for
         your system.

         Press RETURN to continue
```

```
Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

                              DECNIS CONFIGURATION

                                   Main Menu

                        Create a new configuration

                        Modify an existing configuration

                        Exit from this procedure
```

```
Arrow keys to move cursor    HELP for Help
RETURN to select             F8 to quit

   Checking the image compression 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

Creating a compressed image

Compress Done - Image version 2.3-83

                Successfully created the compressed image...
```

```
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

         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 NIANIS230

         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.  nis023.release_notes in /usr/lib/dnet

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

    ***********************************************************************
    *                                                                     *
    *    NIANIS230 Installation Completed at Wed 26 Jan 1994, 10:24:04    *
    *                                                                     *
    ***********************************************************************
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