

DECnet-DOS

Network Management Guide

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This manual describes the DECnet-DOS Network Control Program (NCP). It explains how you can use NCP commands to set up your personal computer as a node in a DECnet network. It also explains how to use NCP commands to obtain detailed information about your node and the network.

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Preface

Introduction to DECnet-DOS Network Management

The *DECnet-DOS Network Management Guide* provides the information necessary for you to manage a DECnet-DOS **node** within a DECnet network. The individual systems within the network are called “nodes.”

The term “DECnet-DOS” refers to the following products:

- DECnet-DOS, Version 2.0 running on supported IBM personal computer systems using the PC DOS operating system. For a list of all supported personal computers, both IBM systems and IBM compatibles, and supported operating systems, see the *DECnet-DOS Software Product Description*.
- DECnet-VAXmate, Version 2.0 for the VAXmate personal computers running the VAXmate MS-DOS Version 3.10 operating system.

The term “DOS” refers to the following operating systems:

- MS-DOS running on the VAXmate personal computer.
- IBM Personal Computer DOS (PC DOS) running on supported IBM personal computers and IBM compatibles. For a list of all supported personal computers, both IBM systems and IBM compatibles, and supported operating systems, see the *DECnet-DOS Software Product Description*.

Manual Objectives

The *DECnet-DOS Network Management Guide* describes the Network Control Program (NCP). It explains how you can use NCP commands to set up your personal computer as a node in a DECnet network. It also explains how to use NCP to obtain detailed information about your node and the network. In addition, it includes information about loopback testing, event logging, and displaying system counters and database information.

Intended Audience

This manual is intended for users who need to set up, monitor, update, and troubleshoot their DECnet-DOS node in DECnet network. Users should be familiar with DECnet network concepts as well as DECnet testing procedures (such as loopback).

Structure of This Manual

This manual consists of four chapters, one appendix and a glossary:

- | | |
|-------------------|--|
| Chapter 1 | Introduces the Network Control Program (NCP) and explains how to use the NCP commands. |
| Chapter 2 | Describes the NCP commands that you can use to set up, maintain, and update the network software on your personal computer. |
| Chapter 3 | Describes the NCP commands that you can use to test your personal computer's network hardware and software. This chapter also lists some performance and tuning hints that you can use to improve performance and fine-tune your system. |
| Chapter 4 | Describes the individual NCP commands and their parameters. The commands are discussed in alphabetical order. |
| Appendix A | Lists the error messages you can receive while using NCP. |
| Glossary | Contains a list of DECnet-DOS network management terms. |

Graphic Conventions Used in This Document

The following graphic conventions are used in this manual:

Convention	Meaning
Special type	This special type indicates examples of system output or user input. System output is in black; user input is in red
COMMAND	Represents acceptable abbreviations, for example DELETE . The abbreviations are displayed as bold characters.
UPPERCASE	Uppercase in commands and examples indicates that you should enter the characters as shown (enter either uppercase or lowercase).
<i>italics</i>	Lowercase italics in commands and examples indicate that either the system supplies or you should supply a value.
{ }	Braces indicate that you are required to specify one (and only one) of the enclosed options. Do not type the braces when you enter the command.
[]	Square brackets indicate that the enclosed data is optional. (If a vertical list of options is enclosed, you can specify only one option.) Do not type the brackets when you enter the command.
()	Parentheses enclose a set of options that must be specified together.
vertical list of options	A vertical list of options not enclosed within braces, brackets, or parentheses indicates that you may specify any number of options (or in some cases none if defaults apply).

Convention

Meaning

key

Indicates that you should press the specified key. **CTRL-x** indicates that you should hold down the CONTROL key while you press the *x* key, where *x* is a letter.

Note that unless otherwise specified, you should end every command line by pressing **RET**.

Associated Documents

The following documents are included in the DECnet-DOS documentation set:

- *DECnet-DOS Installation Guide*
- *DECnet-VAXmate Installation Guide*
- *DECnet-DOS Getting Started*
- *DECnet-DOS User's Guide*
- *DECnet-DOS Network Management Guide*, which you are reading
- *DECnet-DOS Programmer's Reference Manual*
- *DECnet-DOS Release Notes*

You should also have available the installation guide and introductory manuals for your personal computer.

Using the Network Control Program (NCP)

The Network Control Program (NCP) is the DECnet management utility that accepts commands from your personal computer to perform the following set of functions:

- Assign a node name and address to your personal computer, identifying it to the rest of the network.
- Specify node names and default access control information for communicating with other nodes in the network.
- Specify access control information that allows for incoming access requests from the network (such as file access, for example).
- Diagnose problems you may have connecting your personal computer to the network by displaying information about your node and how it is interacting with the network.
- Change parameters which control how the local hardware and software provide network services.
- Monitor local network activity by reading or monitoring log information.
- Monitor local network error counters.

NCP uses information from six permanent databases. These databases act as storage areas and provide all of the information necessary for NCP to control your DECnet-DOS node. The DECnet-DOS Installation Procedure (DIP) creates these databases for you during the installation process. You can then use NCP commands to change or delete specific information in each database file, or you can delete all of the information in a specific database file.

NCP allows you to place information in two different types of databases: the permanent database and the volatile database.

To enter information in the permanent database (which will cause values to take effect at the next system reboot), use these commands:

- DEFINE
- PURGE
- LIST

To enter information in the volatile database (which will cause values to take effect immediately and are not retained across system reboots), use these commands:

- SET
- CLEAR
- SHOW

The following are the six permanent databases you can use:

- **DECACC.DAT** — This is the permanent incoming access database. You can set up information that allows other systems to access files or programs on your local node. The information is stored on a user or name basis. Applications may use the information in this database to check the access privileges of nodes that are trying to get information from your node. This allows you to control who can or cannot gain access to your node.
- **DECALIAS.DAT** — This is the permanent outgoing access database. You can store information here that will be used when you want to access other nodes in the network. Outgoing access information includes a user name, account information, and a password. This information is assigned on a per node basis.
- **DECNODE.DAT** — This is the permanent DECnet node database. It contains a list of node names and corresponding node addresses, a pointer to the outgoing access information, and a LAT or MS-NET indicator.

- **DECOBJ.DAT** — This is the permanent object database that is used by the Job Spawner. The database contains your definitions of the objects that the Job Spawner can access.
- **DECPARM.DAT** — This is the permanent DECnet database. It contains all of the configuration information about your local node, including executor, line, and circuit information.
- **DECREM.DAT** — This is the permanent remote adapter name database. This database is used by MS-NET. It contains information that includes both a remote node name and an object associated with the adapter name.

NOTE

When you reboot your system, the network process checks to see if there is a DECPARM.DAT file. If the file does not exist, the network process initializes using its own set of default parameters.

When you start NCP, the utility also checks for a DECPARM.DAT file. If the file does not exist, NCP uses the default parameters set up by the network process to create the file. You can then change or modify these parameters using NCP commands.

This chapter describes:

- Running NCP (see Section 1.1).
- General NCP command formats (see Section 1.2).
- Getting help (see Section 1.3).
- A summary of the NCP commands (see Section 1.4).
- Special considerations for using NCP (see Section 1.5).

It is required that you know the person responsible for overall management of your network. If you have questions regarding your node or the network, this person should be able to provide you with extra information or assistance.

1.1 Running the NCP Utility

Before you can start NCP, you should make sure that all of the NCP files necessary to run NCP are available in your directory path. (The files have the extension .EXE, such as NCP.EXE.) The DECnet-DOS Installation Procedure (DIP) places the appropriate files in the path for you. It is not necessary to have the files in the same directory as your database files.

To run the NCP utility, you need to use NCP commands. You can supply NCP commands by using one of two methods:

- Single command method:

Enter a command string that includes NCP followed by the name of the specific NCP command. Press the RETURN key (hereafter abbreviated as `(RET)`). After each NCP command is entered, the MS-DOS prompt is returned. For example:

```
C> NCP command (RET)
C>
```

- Single command method using a batch or redirected input file:

This method can also be used for entering commands from a batch file. A batch file (also called a redirected input file) contains all the NCP commands that you want to use to complete a series of NCP operations. By using a batch file, you need issue only one command to process all of the other commands in the file.

To enter commands using a batch file, enter a command string that includes NCP followed by a left angle bracket (<) and the name of the file. Then press `(RET)`. For example:

```
C> NCP <file-name (RET)
```

NOTE

You can specify whether a redirected input file is displayed on your screen as the file is executed by using the SET ECHO command. See Chapter 4 for specific information on how to turn echo on and off using this command.

When NCP has finished, an error level value is returned that can be used by the IF ERRORLEVEL statement in batch files. If NCP has run successfully, a value of 0 is returned. If the execution was not successful, a non-zero value is returned.

- Multiple command method:

You supply the name of the utility (NCP) and press **(RET)**. NCP then responds with its own prompt. (You cannot use this method for submitting NCP commands in batch mode.)

```
C>NCP (RET)
NCP>
```

Enter the NCP command after the NCP prompt and press **(RET)**. Continue this procedure until you have entered all NCP commands.

```
NCP>command (RET)
NCP>command (RET)
NCP>command (RET)
NCP>
```

1.1.1 Abbreviating NCP Commands

You can abbreviate command keywords to three or more unique characters. (An exception to this is the use of the commands LINK and LINE. The first three characters for each command are the same; so you must use the first four characters to properly identify the command you want to use.)

For example, you can type **SHO** for SHOW. However, for clarity and consistency, all examples in this manual show the full command format.

1.1.2 Exiting from NCP

To exit from NCP, you can use one of two methods. You can use the NCP EXIT command, or you can enter **(CTRL/Z)** and then press **(RET)**. The currently running command is completed, then NCP exits.

For example:

```
NCP>EXIT (RET)
```

or

```
NCP> (CTRL/Z) (RET)
```

You can also use **(CTRL/C)** to leave NCP. If you use **(CTRL/C)**, however, the currently running command is interrupted and is not completed.

1.1.3 Using the Network Management Listener

The Network Management Listener is a terminate-and-stay-resident task (TSR) which responds to network management queries from remote DECnet systems. These systems must be running NCP or other network management tools that use the NICE V4.0.0 protocol.

NML runs “in the background” so that it does not interfere with normal use of your personal computer. As a background task, it is limited to examining the currently running system (the volatile databases, whose information is displayed by using the SHOW commands) and cannot access any information residing in the file system (the permanent database whose information is displayed by using the LIST commands).

NML can be installed automatically by DIP or you can invoke it manually. Once NML is installed, it cannot be deinstalled except by rebooting the system.

The following commands are supported from remote DECnet nodes to NML running on your personal computer:

1. NCP TELL pc SHOW EXECUTOR [SUMMARY | STATUS | CHAR]
2. NCP TELL pc SHOW LINE {ETHER-1 | ASYNC-1} [SUMMARY | STATUS | CHAR]
3. NCP TELL pc SHOW KNOWN LINES [SUMMARY | STATUS | CHAR]
4. NCP TELL pc SHOW CIRCUIT {ETHER-1 | ASYNC-1} [SUMMARY | STATUS | CHAR]
5. NCP TELL pc SHOW KNOWN CIRCUITS [SUMMARY | STATUS | CHAR]
6. NCP TELL pc ZERO EXECUTOR COUNTERS
7. NCP TELL pc ZERO LINE {ETHER-1 | ASYNC-1} COUNTERS
8. NCP TELL pc ZERO CIRCUIT {ETHER-1 | ASYNC-1} COUNTERS

1.1.4 Using the Database Conversion Utility

The network management database conversion utility (NMCVT) will run on all of your DEC*.DAT files if you need to upgrade the files from DECnet-DOS or DECnet-VAXmate V1.2 to DECnet-DOS V2.0. Other versions of the database files will be deleted. If you used DIP to install DECnet-DOS and it found V1.2 versions of your DEC*.DAT files, then DIP will force NMCVT to be run automatically upon system reboot.

1.2 General Command Format

Most NCP commands consist of three parts: the command verb, an entity on which the command operates, and one or more parameters that further qualify the action to be taken. For each command, you must supply the verb, one entity and (usually) one or more parameters or qualifiers.

Examples of the NCP command format follow:

Command Verbs	Entities	Parameters
DEFINE	NODE <i>node-name</i>	LAT-HOST
SET	LINE <i>line-id</i>	STATE ON

You should be able to recognize the parts of each NCP command. The following example shows parts of an NCP command:

```
NCP> SHOW EXECUTOR CHARACTERISTICS TO EXECUTOR.LIS (RET)
```

verb entity parameter qualifier

These are the NCP commands:

- **CLEAR** removes or clears parameters from the volatile database.
- **COPY TO** copies the node database to another file (without the access information). This is useful for making master copies of the DECNODE.DAT file for distribution.
- **COPY FROM** copies node information from another DECnet node into your permanent database.
- **DEFINE** establishes specific parameters in the permanent databases which take effect when you reboot your system.
- **EXIT** simply exits from NCP.

- **HELP** provides on-line information about the NCP utility and all of its commands.
- **LIST** displays information about the permanent databases set up using the DEFINE command. You can also redirect this information to an output file.
- **LOOP** runs loopback tests that let you check the following:
 - the operation of your local node
 - the connection to the network
 - the connection to a remote node on the network
 - the communication hardware that connects your system to the network (including modems)
- **MIRROR** sets up a software loopback mirror which is used to echo messages from a remote node back to that remote node. Before a remote node can run a LOOP NODE test to your node, you must first start the mirror on your local node. Then your node can properly return loop messages that are sent to it from the remote node.
- **MONITOR** continuously displays event logging information on the screen in front of you as it occurs.
- **PURGE** deletes information from the permanent DECnet databases.
- **READ** displays event logging information on the screen in front of you. You can also redirect log information to a specified output file.
- **SET** establishes specific parameters for the network. These parameters (and their values) are not saved across system reboots.
- **SHOW** displays information about the currently running system. This information includes counter displays, parameters established with the SET command, and parameters that cannot be set. You can redirect information displayed by the SHOW command to a specific output file.
- **TELL** instructs a remote DECnet node to display information about its executor, lines, or circuits.
- **ZERO** resets the counters associated with a specific network entity to zero.

Table 1-1 lists the NCP commands that you can use to perform certain network activities, such as setting up or monitoring your node. You can use some of the commands in more than one situation, while others you might not use as often.

Table 1-1: When to Use NCP Commands

Activity	Commands to Use
Setting Up Your Node	COPY DEFINE EXIT HELP SET
Maintaining and Updating Your Node	
Changing Permanent Databases	DEFINE PURGE LIST
Changing the Running System	SET CLEAR SHOW
Monitoring Your Node	MONITOR READ SHOW TELL ZERO
Testing Your Node and Its Network Connections	LOOP MIRROR MONITOR READ SHOW TELL ZERO

Although you can use both DEFINE and SET to modify network parameters, each command has a different result when you issue it:

- The DEFINE and PURGE commands establish and delete specific parameters, but the changes do not take effect until the next time you reboot your system. The parameters are stored in the permanent databases: DECPARM.DAT, DECNODE.DAT, DECALIAS.DAT, DECACC.DAT, DECREM.DAT, and DECOBJ.DAT. Values that you have changed using the SET command (but not the DEFINE command) will not be carried across system reboots.

- The SET and CLEAR commands also establish and remove specific parameters, but the changes take effect as soon as the command is issued. These temporary parameters are stored in the volatile database. The parameters established by the SET commands do not retain their values across a system reboot **unless you also specify them by using the corresponding DEFINE command.**

For detailed information about the SET and DEFINE commands, refer to Chapter 4.

1.3 Getting HELP

In order to use the HELP command, the file NCPHELP.BIN must be in your directory path as set up in your AUTOEXEC.BAT file. The DECnet-DOS Installation Procedure (DIP) sets up your AUTOEXEC.BAT file during the installation process. DIP properly places the NCPHELP.BIN file in the same directory as the other NCP*.EXE files.

If you need assistance in selecting NCP commands, type HELP, then press **(RET)**. For example:

```
NCP> HELP (RET)
```

The system responds with:

The HELP command displays information about NCP commands on your screen.

```
HELP is available for the following commands:
```

```
;      CLEAR  COPY  DEFINE  EXIT  LIST  LOOP  MIRROR
MONITOR PURGE  READ  SET    SHOW  TELL  ZERO
```

You can also type the name of a specific command for which you want help information. For example:

```
NCP> HELP CLEAR (RET)
```

The system responds with:

```
HELP is available for the following commands:
```

```
CLEAR EXECUTOR          CLEAR KNOWN
CLEAR LOCAL-ADAPTER-NAME CLEAR REMOTE-ADAPTER-NAME
```

You can also get additional help on a particular NCP command. For example, if you want more information on the CLEAR EXECUTOR command, type:

```
NCP>HELP CLEAR EXECUTOR (RET)
```

The system responds with:

```
Removes specified executor node parameters from running system  
(DDCMP only).
```

```
RECEIVE PASSWORD Password the executor node must receive from the  
adjacent node in order to exchange messages.
```

```
TRANSMIT PASSWORD Password the executor node must transmit to the  
adjacent node in order to exchange messages.
```

1.4 NCP Command Summary

Table 1-2 summarizes the NCP commands. Chapter 2 provides an overview of the NCP commands that you can use to set up, maintain, and monitor your node on the network. Chapter 3 provides an overview of the NCP commands that you can use to test and troubleshoot your node's network connections. Chapter 4 provides detailed descriptions of all the NCP commands. The commands are presented in Chapter 4 in alphabetical order.

Table 1-2: NCP Command Summary

Command	Function
CLEAR EXECUTOR	Removes executor node parameters stored for the currently running system.
CLEAR LOCAL-ADAPTER-NAME	Clears a local adapter name from the volatile database.
CLEAR REMOTE-ADAPTER-NAME	Clears a remote adapter name from the volatile database.
COPY KNOWN NODES	TO <i>file-id</i> copies the node database (in DECNODE.DAT) to a specified file. Access information is not copied. FROM <i>node-id</i> copies the node database information from a specified remote node into DECNODE.DAT.

(Continued on next page)

Table 1-2: NCP Command Summary (Cont.)

Command	Function
COPY NODE	<i>node-id</i> FROM <i>remote-node-id</i> copies information about a single node name from a specified remote node into the node database. <i>area.*</i> FROM <i>remote-node-id</i> copies information about an entire area of nodes from a specified remote node into the node database.
DEFINE ACCESS	Defines incoming access information for the designated user in the incoming access database (DECACC.DAT). Access information includes a user ID, a password, and the type of access.
DEFINE CIRCUIT	Defines the circuit characteristics which take effect when you reboot your system.
DEFINE EXECUTOR	Defines executor node characteristics which take effect when you reboot your system.
DEFINE LINE	Defines line characteristics which take effect when you reboot your system.
DEFINE NODE	Assigns a node name (and optional access control information) to a unique node address.
DEFINE OBJECT	Defines object information for the Spawner database (DECOBJ.DAT).
DEFINE REMOTE-ADAPTER-NAME	Defines a remote adapter name to be used by MS-NET. The adapter name includes a node name and an object associated with that node.
EXIT	Exits from NCP.
HELP	Displays a summary of NCP commands on your screen.
LIST ACCESS	Displays entries in the incoming access database (DECACC.DAT).
LIST CIRCUIT	Displays permanent information about the circuit from the DECnet database (DECPARM.DAT).
LIST EXECUTOR	Displays permanent information from the DECnet database for the executor node (DECPARM.DAT).
LIST LINE	Displays permanent information about the line from the DECnet database (DECPARM.DAT).
LIST NODE	Displays permanent information about a remote node that is contained in the node database (DECNODE.DAT).

(Continued on next page)

Table 1-2: NCP Command Summary (Cont.)

Command	Function
LIST OBJECT	Displays information about an object in the Spawner database (DECOBJ.DAT).
LIST REMOTE-ADAPTER-NAME	Displays information about the remote adapter name in the remote adapter name database (DECREM.DAT).
LOOP CIRCUIT	Runs loopback tests to a specific Ethernet address, a multicast Ethernet address, or an adjacent node on a DDCMP line.
LOOP EXECUTOR	Runs a loopback test within the local node to a local loopback mirror.
LOOP LINE	Runs a loopback test within the local node to the Ethernet controller. This test requires the use of a loopback connector.
LOOP NODE	Runs a loopback test to a remote node which is running a loopback mirror.
MIRROR	Sets up a loopback mirror on the local node to echo messages received from a remotely-run LOOP NODE test.
MONITOR LOGGING	Displays event logging information on the screen in front of you.
PURGE ACCESS	Deletes incoming access information for the specified user from the incoming access database (DECACC.DAT).
PURGE EXECUTOR	Removes specified executor node parameters from the DECnet database (DECPARM.DAT).
PURGE NODE	Deletes information in the local node database for the specified node.
PURGE OBJECT	Deletes information in the Spawner database (DECOBJ.DAT) using either the object name or object number.
PURGE REMOTE-ADAPTER-NAME	Deletes an entry from the remote adapter name database (DECREM.DAT).
READ LOG	Displays the contents of the event logging buffer either on the screen in front of you or in a redirected file.
SET CIRCUIT	Sets or modifies current circuit parameters.

(Continued on next page)

Table 1-2: NCP Command Summary (Cont.)

Command	Function
SET ECHO	Determines whether or not the contents of a batch file or a redirected file are displayed on your screen as the file is executed.
SET EXECUTOR	Sets or modifies the executor node's current parameters.
SET LINE	Sets or modifies the line's current parameters.
SET LINK	Terminates the logical link connections that are associated with a specific socket. The socket is also detached.
SET LOCAL-ADAPTER-NAME	Enters a local adapter name in the volatile database.
SET PAUSE	Causes a long NCP display to pause at the end of a screen. This prevents the entire display from scrolling by all at once. This command also issues a prompt so that you can view the rest of the display.
SET REMOTE-ADAPTER-NAME	Enters a remote adapter name in the volatile database.
SHOW ACTIVE LINKS	Displays information about current logical links to your local node.
SHOW ADJACENT NODES	Displays information about the node that is physically adjacent to your local node.
SHOW CIRCUIT	Displays current circuit information.
SHOW EXECUTOR	Displays current executor node information.
SHOW KNOWN LINKS	Displays information about all logical links to the local node. TO <i>filename</i> records the information in a file you specify, rather than displaying it on the terminal screen.
SHOW KNOWN NODES	Displays information about nodes that have been accessed by DECnet-DOS since the last system reboot. To see permanent node information, use the LIST KNOWN NODES command.
SHOW LAT	Displays counters for LAT (applies only if the LAT driver is installed).
SHOW LINE	Displays communication line information.
SHOW LOCAL-ADAPTER-NAME	Displays information about local adapter names only.

(Continued on next page)

Table 1-2: NCP Command Summary (Cont.)

Command	Function
SHOW REMOTE-ADAPTER-NAME	Displays information about remote adapter names only.
TELL <i>node-id</i>	Instructs a remote node to display information about its executor, lines, or circuits.
ZERO CIRCUIT	Zeroes the counters for the circuit.
ZERO EXECUTOR	Zeroes the counters for the executor node.
ZERO LAT	Zeroes counters for LAT (applies only if the LAT driver is installed).
ZERO LINE	Zeroes the counters for the line.

1.5 Special Considerations for Using NCP

You should note the following considerations before using NCP:

- Setting the state of the line to OFF in an asynchronous configuration will shutdown network processing, but will NOT hang up the phone, even if the circuit's modem parameter is set to full. If you must hang up the phone under program control, use the NCP command:

```
NCP>SET LINE STATE HANGUP (RET)
```

- Please be aware that some combinations of settings for buffer sizes, buffer counts, and timers may cause performance problems or network failures. Please change network parameters only to solve specific problems. If new problems occur as a result, change back to the default settings.
- If you plan to use the COPY KNOWN NODES FROM REMOTE command, be aware that in a large network, the resulting node database can be so large that the search time during connections can be very long. In a large network, consider only defining the nodes that you access frequently.

- To enter lowercase text as command line arguments, enclose it in quotes. For example:

```
NCP> SET ACCESS USER "bench" (RET)
```

The resulting argument is lowercase. You can, however, enter:

```
NCP> SET ACCESS USER bench (RET)
```

This is equivalent to typing user name bench in uppercase.

- The LOOP CIRCUIT commands for Ethernet configurations may fail to loop some messages. This does not indicate that there is a problem which needs to be corrected. Personal computers may lose messages at times. DECnet automatically retransmits lost messages, but the circuit loopback architecture does not.
- Access control strings may be quoted or unquoted. Unquoted strings are forced to uppercase.

Setting Up and Managing Your Node

This chapter provides an overview of the NCP commands and parameters that you can use to set up, maintain, update, and monitor your node in a DECnet-DOS network.

2.1 Setting Up Your Node

You must choose a name and address to identify your node to other nodes in the network. Each node must have a unique name and address. In most cases, you obtain your node name and address from a person in your facility. **The person coordinating network activities must keep a list of all node names and addresses to ensure there is no duplication.**

During software installation, your local node address and name are established when you use the DECnet-DOS Installation Procedure (DIP). It is not necessary for you to repeat this step once installation is completed. The *DECnet-DOS Installation Guide* and/or *DECnet-VAXmate Installation Guide* provides a step-by-step explanation of the installation procedure.

If you need to change your node name and node address, you can change them with the DEFINE EXECUTOR command. The DEFINE EXECUTOR command establishes executor characteristics that include node name and address. The executor's node name and address become effective when you reboot your system.

- A **node name** is an identification string consisting of one to six alphanumeric characters, including at least one alphabetic character. For example:

PARIS3

- A **node address** is a unique numeric identification of a specific node. The node's address includes an area number and a node number:

area.node

where:

area is a number in the range of 1 to 63.

node can be in the range of 1 to 1023. It is separated from the area number with a period.

For example:

2.975

In this example, the area number is 2 and the node number is 975.

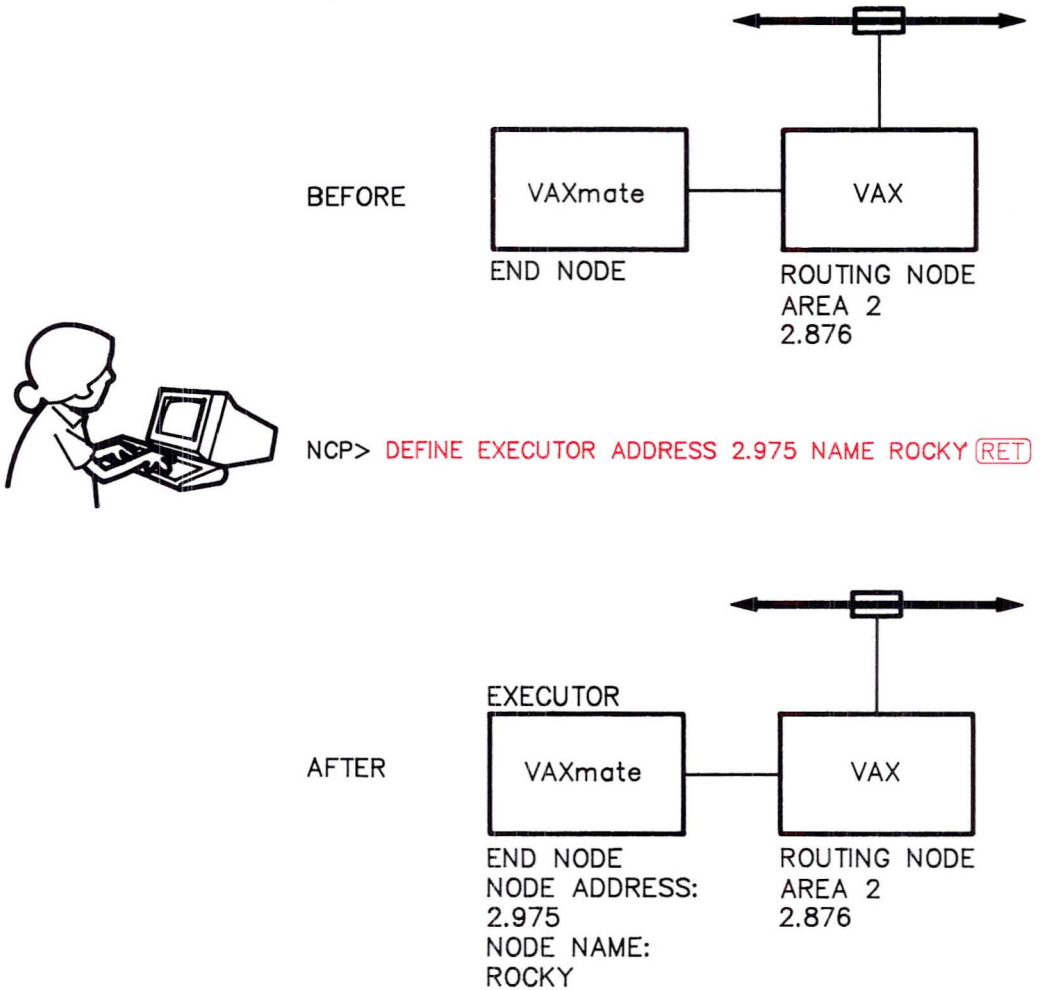
For DECnet-DOS, your area number must match the area number of the node that is routing information for you. For asynchronous DECnet-DOS connections, your area number must match the area number of your adjacent node.

You cannot have duplicate node addresses in a single DECnet network.

Figure 2-1 illustrates the use of the DEFINE EXECUTOR command. A node name ROCKY is assigned the node address 2.975, using the following command:

```
NCP> DEFINE EXECUTOR ADDRESS 2.975 NAME ROCKY (RET)
```

Figure 2-1: Defining Your Node Name and Address



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2.1.1 Naming Remote Nodes

At your local node, you can create a list of the remote nodes that you want to access by name. This list can include access control information that allows default access to a specific account on a remote node. (This is the outgoing access control information that is stored in the DECALIAS.DAT database.) To specify remote node information, use the DEFINE NODE command.

When you create a list of remote node names, the following information is required:

- **Node address**

A numeric string including the area number in the range of 1 to 63 and the node number in the range of 1 to 1023. If a node address is entered without an area number, the default area number is that of the executor node.

- **Node name**

A character string consisting of 1 to 6 alphanumeric characters with at least one alphabetic character.

2.1.2 Specifying Default Access Control Information

Access control information allows you to access a specified remote node with the privileges of a specified user. This information includes:

- **User name**

A character string consisting of 1 to 39 alphanumeric characters that identifies the user at the remote node.

- **Password**

A character string consisting of 1 to 39 alphanumeric characters that may be required to access files or programs on the remote node.

- **Account**

A character string consisting of 1 to 39 alphanumeric characters. (This field is not used on most systems, including DECnet-DOS and DECnet-VAXmate.)

If you want the characters representing the access information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string in double quotation marks. Character strings that are not in quotation marks are forced to uppercase.

For example:

abc will be stored in the database as **ABC**

“Aab” will be stored in the database as **Aab**

You can specify default access control information using NCP, or you can explicitly specify the information during a Network File Transfer (NFT) operation. For example, when you specify access control information during an NFT session, the information is used by any subsequent command dealing with the same node. Once you exit from NFT, the access control information is not saved. If you run NFT at another time, you cannot use the access control information that was set in a previous NFT session. However, you can use access control information previously specified with NCP. If no information is included in the NFT command line, the defaults set up by NCP are used to access the remote node.

You can also specify that the node you want to access is a LAT host node or an SMB server for MS-NET. (The LAT information is used by the SETHOST utility when you connect to another node. The MS-NET information is used by VMS Services for MS-DOS.) Use the following designations to specify the appropriate node:

LAT-HOST (L) Designates this node as a LAT host.

MS-NET (M) Designates this node as an MS-NET server.

For example:

```
NCP>DEFINE NODE 2.375 NAME LONDON USER SMITH PASSWORD OPEN LAT (RET)
```

This command assigns node name LONDON to node address 2.375. It specifies the user's name as SMITH, the password as OPEN, and the node as a LAT host node.

When accessing a remote node by node name only, a DECnet-DOS utility follows this procedure to determine access control information:

1. The utility first checks to see if access information has already been provided directly to the utility. If this is true, then the utility uses the information to access the remote node.
2. The utility determines if default access information was specified with an NCP DEFINE NODE command by checking the permanent database file, DECALIAS.DAT.
3. If no default access control information was specified using NCP, it is assumed that the remote node does not require access control information and the requested operation is attempted using no access information.

2.1.3 Changing and Overriding Default Access Information

You can override the default access control information by specifying different information during a DECnet-DOS utility session. The process of overriding default access control information during an NFT session is explained in the *DECnet-DOS User's Guide*.

If you want to change access defaults with NCP, you can use the DEFINE NODE command. This command resets node parameters stored on the local node for the specified remote node. For example:

```
NCP> DEFINE NODE 2.31 NAME BOSTON USER SAM PASSWORD CAT (RET)
```

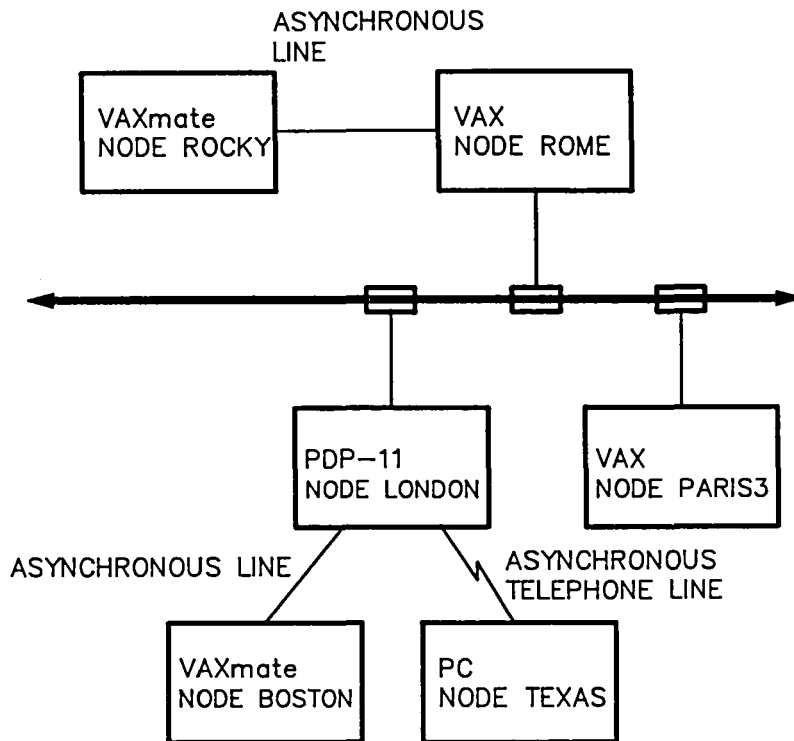
This command sets different access control information for the node BOSTON.

2.1.4 Displaying Default Access Control Information

The NCP LIST KNOWN NODES command displays a list of remote nodes and any default access control information that has been set for a remote node. If the access control information contains a password, that password is not displayed on the screen. The password is represented by three dots (...).

Figure 2-2 shows remote nodes in a sample DECnet-DOS network. Each node has a specific node name.

Figure 2-2: Remote Node Names



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To display information for the remote nodes that appear in Figure 2-2, type the NCP command `LIST KNOWN NODES`. This command displays the following information for nodes that are **known** to the local node ROCKY:

- Node address
- Node name
- Number of current active logical links to this node
- Whether the node is a LAT host or an MS-NET server
- Access control information (in the form `/USER/PASSWORD/ACCOUNT`).

NCP>LIST KNOWN NODES (RET)

The system responds with:

Node Summary as of 4-Aug-1987 16:36:30

Executor node = 55.86 (VIGOR)
Executor state On
Executor Identification DECnet-VAXmate V2.0

Node Address	Node Name	Active Links	LAT/MS-NET	Account Information
2.375	LONDON	0		/SMITH/...
4.30	BOS1A	1	M L	
4.60	ELLENK	0		
4.62	AMHERS	0		
4.64	FINANC	0		
4.215	SIRIUS	0		
4.216	SAGAN	0		
4.298	PEABO	0		
55.86	VIGOR	0		/D_JONES
55.124	UNWELL	1	M L	
55.170	HELGA	0		
55.242	JUN	0	L	
55.261	DSRVC1	0		
55.335	MAGNTA	0		

2.2 Maintaining and Updating Your Node

Using NCP commands, you can display the following local node and network information on your screen:

- Node, line and circuit parameters can be displayed by specifying CHARACTERISTICS with a specific network entity.
- Node names, node addresses, and access control information for remote nodes can be displayed if they have been defined locally.
- COUNTERS display statistics about the flow of network messages to and from your node. The counters also record error conditions and accumulate their totals for you.
- Network status (state) and other related information can be displayed for a specific node, line, or circuit.

In the context of DECnet-DOS, a circuit is the communications path established between the local node and its adjacent node. A line is the physical line connecting the local node to the adjacent node. To update your node, you can use NCP commands to change the executor node, line, and circuit parameters according to the needs of your network. It is recommended that you do not change the settings for these parameters unless you are familiar with DECnet concepts, and you are aware of how all nodes (and their parameters and characteristics) interact in the network.

2.2.1 Changing Network Information for Your Node

The following network parameters are some of the features that you can change.

At Installation

Executor node name and address

The node name is a one- to six-character alphanumeric string associated with a specific node address. The string must contain at least one alphabetic character. The node address is a numeric string that identifies the location of the node in the network. Each name and address must be unique within the network.

Line speed (applies to asynchronous DDCMP lines only)

The speed of the communications line can be set to a specific baud rate. Line speed is the rate at which signals are transmitted over a communications line.

Line state

The state of the communications line can be either ON or OFF. See Section 2.3.4 for an explanation of line states and substates.

Likely to Require Changing

Segment buffer size

Every node in the network uses areas in memory, called buffers, for temporary storage of data. The buffers hold information being transferred to and from each node.

The segment buffers are used for transmitting DECnet messages. The segment buffer size defines the amount of information that a node can process from the buffer at one time. Do not change the segment buffer size unless you are very familiar with DECnet concepts and how the local network is set up.

You can only change this parameter using the DEFINE command.

Maximum links

This parameter defines the maximum number of links available for the node. When you adjust this parameter, the number of buffers is adjusted accordingly. Since the default number of maximum links is only 4, this number needs to be increased frequently.

You can only change this parameter using the DEFINE command.

2.2.2 Displaying Executor Node Information

To display information about the currently running executor node, enter the following:

```
NCP> SHOW EXECUTOR CHARACTERISTICS (RET)
```

This command summarizes the network parameters for the currently running executor node.

If you want to display the executor node values that take effect when you reboot your system, use the LIST EXECUTOR CHARACTERISTICS command.

2.2.3 Displaying Remote Node Information

To determine if you defined a specific node with the DEFINE NODE command, type LIST NODE followed by the node name. For example, if the node you want to check is WALKER, enter:

```
NCP> LIST NODE WALKER (RET)
```

NCP then displays the node name, node address, access control information, and the number of current active logical links for node WALKER from this node.

You can also use the LIST NODE command to display information about all of the nodes in a particular node area. For example, to display information about nodes in area 4, enter the following command:

```
NCP> LIST NODE 4.* (RET)
```

NCP then displays information about the node addresses, node names, active links, LAT or MS-NET information, and account information for the nodes in area 4.

If you want information only for nodes with active logical links, use the SHOW ACTIVE NODES command. For example:

```
NCP> SHOW ACTIVE NODES (RET)
```

This command displays the node name and address, the access control information, and the number of current active links from this node to the adjacent node and any other nodes with active logical links to your node. The executor node is always displayed.

2.2.4 Displaying Line Information

In the context of DECnet-DOS, a line is the physical line connecting the local node with the adjacent node. There are two possible line states:

- **ON** — The line is ready for use. To determine if the line is working properly, use the `SHOW LINE CHARACTERISTICS` command. (See Chapter 4 for a more detailed explanation.)
- **OFF** — The line's database and parameters are present, but the line is not available for any DECnet network activity. This allows other communications products to use the communications port.

There are three substates controlled through network management. They can be observed only when the `LINE STATE` is `ON`. Use the `SHOW LINE CHARACTERISTICS` command to display line substates. The substates are:

- **SYNCHRONIZING** — The line is to be or is being initialized.
- **RUNNING** — The line is in normal running state.
- **SERVICE** — The line is reserved for loopback testing.

To display status information about the physical line's characteristics, enter:

```
NCP>SHOW LINE CHARACTERISTICS (RET)
```

This command displays the current characteristics for the line.

2.2.5 Displaying Circuit Information

In the context of DECnet-DOS, a circuit is the communications path established between the local node and its adjacent node. There are two possible circuit states:

- **ON** — The circuit is ready for use. To determine if the circuit is working properly, use the `SHOW CIRCUIT CHARACTERISTICS` command. (See Chapter 4 for a more detailed explanation.)
- **OFF** — The circuit's database and parameters are present, but the circuit is not available for any DECnet network activity.

There are three substates controlled through network management. Use the SHOW CIRCUIT CHARACTERISTICS command to display circuit substates. The substates are:

- **SYNCHRONIZING** — The circuit is being initialized.
- **STARTING** — The circuit is initialized.
- **RUNNING** — The circuit is in running state.

To display status information about the circuit's characteristics, enter:

```
NCP> SHOW CIRCUIT CHARACTERISTICS (RET)
```

This command displays the current characteristics for the circuit.

2.3 Monitoring Your Node

NCP provides several commands that allow you to monitor the activity of nodes on your network. For example, the MONITOR LOGGING command displays network events as they are being logged. An **event** is an occurrence that has potential significance in the operation and/or maintenance of a network. **Logging** is the process that generates a record of the event. Capturing this information in a file can be useful to you if network problems occur.

The READ LOG command displays the contents of the event logging buffer.

For DECnet-DOS systems, event logging is always turned on, and all events are displayed. (You cannot select only a few events to be displayed.) After the events are displayed or redirected to a file, they are discarded.

If an event is lost, NCP displays an error message before displaying the rest of the logged events. For example:

```
Event type 0.0 Event records lost
```

Each event can display the following information:

```
Event type nn.nn name-of-event-type  
Occurred dd-mmm-yyyy hh:mm:ss  
other-event-dependent-text  
.  
.  
.
```

Testing the Network

This chapter provides an overview of the NCP commands that you can use to diagnose problems you may have connecting your personal computer to the network. These commands allow you to display information about your node and how it is interacting with the network. You can also display information about other nodes in the network.

You do not need any special technical knowledge to use these commands, but it is helpful to know the topology of your network. The topology indicates which nodes are in the network, where they are located, and how they are connected. A basic understanding of network testing concepts (such as loopback) is also helpful.

This chapter is divided into two sections:

- **Overview of the NCP test commands** (see Section 3.1) — describes the NCP test commands and lists the functions you can perform with them.
- **Testing the network** (see Section 3.2) — describes the sequence of operations performed by the loopback commands as they test the network components (such as hardware, loopback connectors, or cables).

3.1 Overview of the NCP Test Commands

NCP provides a way for you to interact with the network. This interaction includes setting network parameters and displaying information about your node and its network. In addition, NCP provides a way for you to troubleshoot your network by issuing loopback tests from your node and allowing other nodes to send loopback tests to your node.

You can use NCP to pinpoint problems connecting your personal computer to the network. Since problems can occur in any of the network components, these commands let you perform various tests which check the operation of each component. The tests check the operation of your local node, the connection to the remote node, and the communication hardware between them.

By starting with your local node and progressing outward to each of the components in your network, you can determine which specific component is not operating properly. If all of your components appear to be working properly, you should contact your network manager or the manager of the network you are trying to reach. Have the manager perform further tests to determine the network problem.

The following commands let you display network information and allow other nodes to send loopback tests to your node:

- **LOOP** tests check the operation of your local node, the connection to the remote node, and the communication hardware that connects them. This hardware includes local and remote modems.
- **MIRROR** is the network application that is used when a loopback test is performed from a remote node to the local node. The mirror allows test messages from a remote node to be echoed back to that same remote node.
- **MONITOR LOGGING** continuously displays event logging information on the terminal screen.
- **READ LOG** displays the contents of the event logging buffer.
- **SHOW** displays statistics about node, line, and circuit characteristics. **SHOW** also displays counter statistics.
- **TELL** instructs a remote DECnet node to display information about its executor, lines, or circuits.
- **ZERO** resets line, circuit, or executor counters to zero.

3.2 Testing the Network

You can use loop messages to test the following parts of your network:

- The local node
- The communications controller
- The Ethernet interface to the communications controller
- A local or a remote modem (for DDCMP use only)
- An adjacent node at the circuit level (for DDCMP use only)
- A remote node at the circuit level (for Ethernet only)
- A remote node at the application level

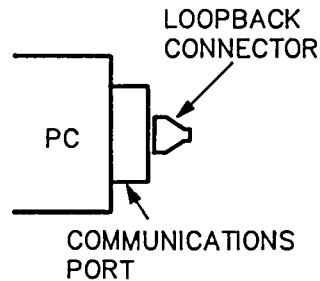
The loop messages are sent using DECnet through the communications controller. DECnet-DOS V2.0 supports either Ethernet connections (using the integrated Ethernet communications controller) or asynchronous network connections (using the integrated asynchronous serial port).

Some of the tests use a device called a “loopback connector” to check the operation of the various components. The loopback connector is a hardware device that you attach to each component to isolate it from the others while you test it. Loopback test messages are sent to the connector and returned to the local node. If the messages do not return, or if they do not match the original messages that were sent, the problem is likely to be with the component you are currently testing. Loop tests also require that the line and circuit states be ON before you run any of the tests. When you start the test, NCP displays a message indicating if the line or circuit is turned on.

The following figures show how you can progressively check the operation of your local node, your transceiver cable, your local modem, and your remote modem. These examples apply to DDCMP configurations only.

Figure 3-1 illustrates the use of the asynchronous loopback connector on your local node. It is attached to the system unit at the controller port. With the connector in this position, you can check that your system is working properly.

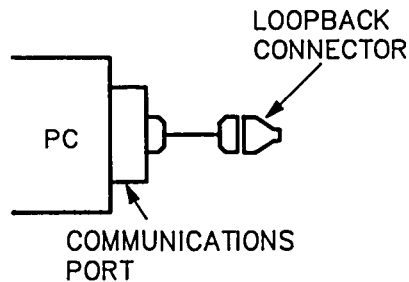
Figure 3-1: LOOP CIRCUIT Test (to the Loopback Plug on the Controller)



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Figure 3-2 illustrates the use of the asynchronous loopback connector on the cable that is attached to your system unit. With the connector in this position, you can check that the cable connecting your system to the network is operating properly.

Figure 3-2: LOOP CIRCUIT Test (to the Loopback Plug on the Cable)



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Figure 3-3 illustrates the local modem loopback test. Using this test, you can check that your network is operating properly up to the local modem.

Figure 3-3: LOOP CIRCUIT Test (to the Local Modem)

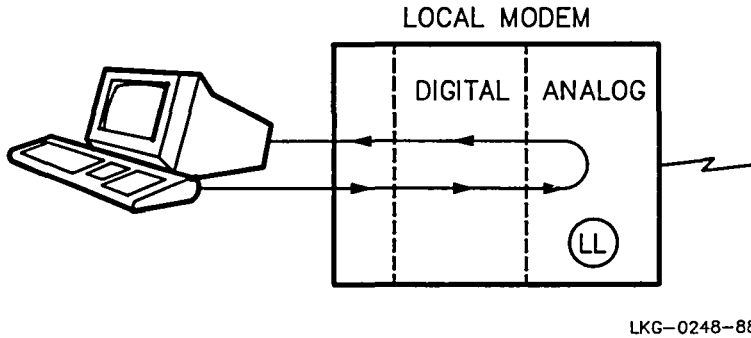
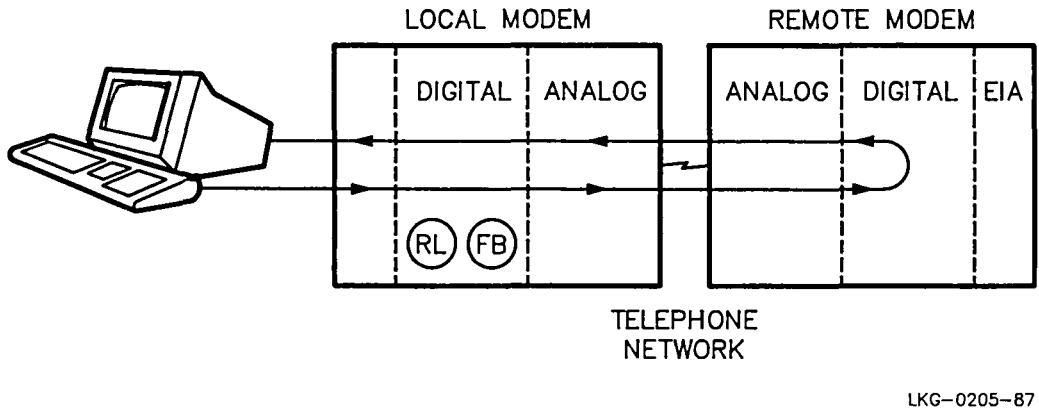


Figure 3-4 illustrates the remote modem loopback test. Using this test, you can check that your network is working properly up to the remote modem.

Figure 3-4: LOOP CIRCUIT Test (to the Remote Modem)



When you run the loopback tests, network counters record events that occur while the test is running. The counters record the error and traffic information that occurs on the network, including events for your local node, line, or circuit. You can zero these counters prior to running the loop test by using the ZERO CIRCUIT, ZERO LINE, and ZERO EXECUTOR commands. When the test is run, the errors and traffic that are recorded reflect the most recent network activity. To display the counters after the test has run, use one of the following commands:

- SHOW CIRCUIT COUNTERS
- SHOW LINE COUNTERS
- SHOW EXECUTOR COUNTERS

The loop tests are performed using the following information:

- The length of the test message
- The number of times to send the test message
- The type of format for the test message
- The node that will receive the test message and retransmit it back to your node

3.3 Performance and Tuning Hints

The following sections describe hints and suggestions that you can use to improve performance or tune your system. Suggestions are provided for asynchronous configurations and Ethernet configurations.

3.3.1 Asynchronous Performance and Tuning

If you have a poor asynchronous DDCMP connection (such as a noisy phone line between modems), the following suggestions may help:

1. Set the line speed lower (NCP SET LINE SPEED *n*).
2. Set the personal computer's executor retransmit factor higher (NCP SET EXECUTOR RETRANSMIT FACTOR *n*). The default is 12; try 16. This is the number of times that a message is retransmitted before the logical link is declared broken. Setting this parameter higher allows the network more times to retry messages with errors.

3. Set the personal computer's segment size smaller (NCP SET EXECUTOR SEGMENT BUFFER SIZE *n*). A smaller segment size improves the chances that messages will be sent with no errors. A smaller segment size also means that the loss of one character causes fewer characters to be retransmitted. The VMS minimum is 192. Try 200 first. The minimum of the peers is used. NPT may produce "buffer too small" errors at low values.
4. Set the host's EXECUTOR HELLO TIMER longer. This affects how long DECnet will wait for any traffic before declaring the line to be down.

On VMS, SET CIRCUIT MAX TRANSMITS controls the retransmit count before recycling the line. Default is 4; set it to 32.

3.3.2 Asynchronous Configuration Problems

When the network process has the line state ON, it assumes that it has complete control of the communications port of the system. It will continue to run DECnet protocols in the background. If you wish to use the communications port for other purposes (such as a terminal emulator), you must first turn the line state OFF with NCP. This will disengage the network process and return the communications port to its previous state.

The network process uses the communications parameters stored in the DECnet database, NOT the parameters that the port may be programmed with by MS-DOS SETUP commands (or PC-DOS MODE commands on IBM Personal Computers). Problems will occur if, for example, you do not properly adjust the line speed with NCP to match the remote system.

3.3.3 Ethernet Performance and Tuning

The 3Com and MCom Ethernet controllers supported by DECnet-DOS V2.0 use single buffers for message reception. Since the personal computer's CPU is fairly slow compared to the speed of the Ethernet, it is possible for a message to be lost by a personal computer because it is busy getting the last message off of the controller. When this happens, DECnet will detect that a message has been lost (after a short time has passed) and automatically retransmit the lost message. This loss of messages and subsequent recovery can be observed in counters displayed by NCP in failures, in Ethernet loop circuit commands in NCP, and in short pauses during normal operations. These symptoms do NOT indicate correctable problems. The loss of messages and subsequent recovery is expected.

A number of network management parameters can be changed in an effort to improve performance:

- In very large networks that include many routing nodes and/or many LAT services, each personal computer may have to receive a number of messages which are regularly broadcast by routing nodes and LAT services. These messages are necessary for normal operations. However, received data performance may be improved by preventing the reception of these regular messages. The following commands turn off reception of these messages and the effect of each command. Only after all commands have been typed will the potential performance improvement be realized.

NOTE

These examples show the use of the NCP SET command. However, you must use the NCP DEFINE command if you want the changes to be permanent. NCP SET commands remain in effect only until the system reboots.

1. LAT /n

The /n switch to LAT prevents LAT from being told the name of each LAT service. If you do not wish to use LAT services, just do not run LAT. If you DO wish to use LAT services, use the /n switch when starting LAT and use the LAT-HOST keyword with the NCP DEFINE NODE command to inform LAT which services should be available. (This restricts your use of LAT services to those with service names of 6 characters or less.) The default is no /n switch, which enables the reception of multicast messages.

2. NCP SET CIRCUIT SERVICE DISABLED [ENABLED]

This command prevents your personal computer from being able to respond to loopback requests or MOP requests at the circuit level. The default is ENABLED, which allows your personal computer to receive multicast messages in order to provide service functions.

3. NCP SET CIRCUIT MULTICAST DISABLED [ENABLED]

This command causes your personal computer to listen for announcements concerning which node on the Ethernet is the router only when the line is started and only every ten minutes for 1 minute after that. The default is ENABLED, which allows your personal computer to receive multicast messages concerning routing.

- If logical links break, try setting the retry counter in your personal computer higher by typing:

```
NCP> SET EXECUTOR RETRANSMIT FACTOR 18 (RET)
```

- If performance seems bursty, try setting the delays before retransmission lower by typing these commands on your remote (non-MS-DOS) systems:

```
NCP> SET EXECUTOR DELAY FACTOR 32 (RET)
```

```
NCP> SET EXECUTOR DELAY WEIGHT 3 (RET)
```

- If performance seems bursty, you may also want to try lowering the number of messages that a remote node can send to your personal computer at a time. Enter the following command:

```
NCP> SET EXECUTOR RECEIVE PIPE QUOTA 1 (RET)
```

- If performance seems bursty, you may also want to try raising the number of messages that a remote node can send to your personal computer at a time. Enter the following commands:

```
NCP> SET EXECUTOR RECEIVE PIPE QUOTA 8 (RET)
```

```
NCP> SET EXECUTOR NAK QUOTA 7 (RET)
```

Experimenting with these values and running DTS tests will help to determine adequate values.

3.3.4 Ethernet Configuration Problems

During power OFF (and perhaps power ON), Ethernet controllers may introduce noise on the Ethernet.

It may not be possible to format floppies on the IBM Personal Computer, the IBM Personal Computer XT, or the IBM Personal Computer AT while the Ethernet line is in the ON state. The direct memory access (DMA) of bytes to and from the Ethernet controller may interfere with the floppy timing while formatting. If this seems to be happening to you, use the NCP command SET LINE STATE OFF before formatting, and then SET LINE STATE ON after formatting.

NCP Commands for DECnet-DOS Networks

This chapter provides detailed descriptions of all the NCP commands that you can use for setting up, maintaining, updating, and monitoring your node in a DECnet-DOS network.

4.1 Standard Definitions Used in NCP Commands

Table 4-1 lists variables and parameters that are frequently used in NCP commands. Several of the command descriptions in this chapter refer to this table. The information is presented here to avoid repetition throughout the chapter.

Table 4-1: NCP Command Parameters and Variables

Parameter	Function
CHARACTERISTICS	displays parameters that are currently set for the executor, line, or circuit.
<i>circuit-id</i>	specifies circuit ASYNC-1 or ETHER-1. Since there is only one circuit to use for each configuration, the <i>circuit-id</i> is optional.
COUNTERS	displays error and traffic information for the executor, line, or circuit.
	A counter displays statistics about the flow of network messages for your node. The counters also tabulate recorded error conditions.
	Traffic refers to messages traveling over the line between nodes.
<i>device-id</i>	specifies the device for controlling the DECnet line.

(Continued on next page)

Table 4-1: NCP Command Parameters and Variables (Cont.)

Parameter	Function
<i>line-id</i>	specifies line ASYNC-1 or ETHER-1. Since there is only one line to use for each configuration, the <i>line-id</i> is optional.
<i>node-id</i>	specifies a node address (see <i>node-address</i>) or a node name (see <i>node-name</i>).
<i>node-address</i>	specifies a unique decimal string consisting of an area number in the range of 1 to 63, followed by a period and a node number in the range of 1 to 1023.
<i>node-name</i>	specifies a string of 1 to 6 alphanumeric characters, including at least one alphabetic character.
STATUS	displays the availability of the executor, line, or circuit for network activity.
SUMMARY	displays only the most useful information for the executor, line, circuit, or links. SUMMARY is the default display type.
TO <i>file-id</i>	specifies the name of an output file to which information is to be directed. You can specify an output file for the COPY, LIST, MONITOR, READ, and SHOW commands.

4.2 NCP Commands

The NCP commands are presented in the following sections in alphabetical order. Each section explains how to use the command and provides command examples and sample system responses to the command.

CLEAR EXECUTOR

The CLEAR EXECUTOR command removes specified executor node parameters from the local database for the running system. These parameters include a RECEIVE PASSWORD and a TRANSMIT PASSWORD. (To remove these parameters from the permanent database, use the PURGE EXECUTOR command.)

If RECEIVE and TRANSMIT passwords have been enabled on the executor node and the adjacent node, the passwords are automatically exchanged when either node turns on the communication line to the other node. The network coordinator defines these passwords for DDCMP use. The exchange of passwords also occurs when the communication line is restarted from either node due to errors.

Format

```
CLEAR EXECUTOR {RECEIVE PASSWORD }  
                {TRANSMIT PASSWORD }
```

where

RECEIVE PASSWORD removes the password the executor node must receive from the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting eight alphanumeric characters.

TRANSMIT PASSWORD removes the password the executor node must transmit to the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting of eight alphanumeric characters.

NOTE

These passwords are used for asynchronous DDCMP connections only.

Example

```
NCP> CLEAR EXECUTOR TRANSMIT PASSWORD (RET)
```

This command removes the password that the executor node must transmit to the adjacent node when the executor node first begins communications. Until the network coordinator defines a new transmit password, the executor node cannot open the communication line between itself and the adjacent node.

CLEAR LOCAL-ADAPTER-NAME

CLEAR LOCAL-ADAPTER-NAME

This command clears a specific local adapter name from the volatile database. The local adapter name identifies a network application which is written to use the NETBIOS emulator interface. The network application resides on your personal computer.

The CLEAR KNOWN LOCAL-ADAPTER-NAMES command clears all of the local adapter names from the volatile database.

Note that the CLEAR command for adapter name information is case sensitive. This means that you must specify the exact name you want to clear by enclosing the name in quotation marks. If you have two local adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the CLEAR LOCAL-ADAPTER-NAME command. If you do not use quotation marks with the CLEAR command, NCP will remove the name that is stored in all capital letters.

Format

CLEAR LOCAL-ADAPTER-NAME *name* [BYTE 16 *nn*]

or

CLEAR KNOWN LOCAL-ADAPTER-NAMES

where

name is a 1- to 16-character ASCII printable string that specifies the name of the local application you want to remove from the volatile database.

nn specifies a value for byte 16. This value can be any decimal value from 0 to 255.

Example

```
NCP> CLEAR LOCAL-ADAPTER-NAME "Charlie"(RET)
```

CLEAR REMOTE-ADAPTER-NAME

This command clears a specific remote adapter name from the volatile database. The remote adapter name identifies a network application which is written to use the NETBIOS emulator interface. The network application resides on a remote personal computer.

The CLEAR KNOWN REMOTE-ADAPTER-NAMES command clears all of the remote adapter names from the volatile database.

Note that the CLEAR command for adapter name information is case sensitive. This means that you must specify the exact name you want to clear by enclosing the name in quotation marks. If you have two local adapter names that use the same letters but are in different cases, such as "ANCHOR" and "anchor", you must be very specific when using the CLEAR REMOTE-ADAPTER-NAME command. If you do not use quotation marks with the CLEAR command, NCP will remove the name that is stored in all capital letters.

Format

CLEAR REMOTE-ADAPTER-NAME *name*

or

CLEAR KNOWN REMOTE-ADAPTER-NAMES

where

name is a 1- to 16-character alphabetic string that specifies the name of the remote application you want to remove from the volatile database.

Example

```
NCP> CLEAR REMOTE-ADAPTER-NAME "Hoosier" (RET)
```

COPY NODE

COPY NODE

The COPY NODE *node-id* FROM command copies information about a single node name (or a group of nodes within a single area) from a specified remote node into the node database (DECNODE.DAT). This is useful if you want to add information from a particular node to your database. It is also helpful if you want to copy information from a node that has a large node database and you want to copy information only about nodes in a particular area.

The COPY KNOWN NODES FROM specifies a remote node from which to copy the complete database of node names and node addresses to your local node. This set of node names will not include any access information. If the database on the remote node is large (for example, in excess of 100 nodes), this can significantly slow down the access time to the remote node's database. You can interrupt the copying of node names at any time by pressing any key on the keyboard.

The COPY KNOWN NODES TO command copies the local node database to a file. If the database contains access information, it is not copied. This command is useful if you want to copy your node database for another DECnet-DOS V2.0 system, but you do not want to include any of the access information.

Format

COPY NODE *node-id* FROM *remote-node-id*

COPY NODE *area*. * FROM *remote-node-id*

COPY KNOWN NODES FROM *remote-node-id*

or

COPY KNOWN NODES TO *file-id*

where

node-id specifies the name or the address of the node for which you want to collect information.

remote-node-id specifies the name or the address of the remote node from which you want to collect information.

COPY NODE

*area.** specifies the particular node area for which you want to collect information. The asterisk (*) is a wildcard that indicates that you want to copy all of the node information for the specified area. (You should note that the use of wildcards only works if the remote system supports wildcarded node names for network management.)

TO *file-id* indicates the information defined in Table 4-1.

Examples

```
NCP> COPY NODE BASBAL FROM STADIA (RET)
```

This command copies information about the node BASBAL from the node STADIA.

```
NCP> COPY KNOWN NODES TO NODEDATA.DAT (RET)
```

This command copies the node database to the file NODEDATA.DAT.

DEFINE ACCESS

DEFINE ACCESS

The DEFINE ACCESS command defines incoming access information for the designated user. The access information is stored on a per user basis, and it includes the password and access type. The access type describes the type of privilege the user has to access information on your node.

The information you define with DEFINE ACCESS is stored in the database DECACC.DAT. The DECACC.DAT file is used by the File Access Listener (FAL) and other DECnet-DOS utilities to limit access from remote systems. If the incoming access database file does not exist, no access checking is performed.

If you want the characters representing the access information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks. For example:

abc will be stored in the database as **ABC**

“Aab” will be stored in the database as **Aab**

Format

```
DEFINE ACCESS USER user-id [PASSWORD password] [access-type]
```

where

<i>username</i>	is a 1- to 39-character alphabetic string that defines the user.
<i>password</i>	is a 1- to 39-character alphabetic string that defines the user's password. The default is no password.
<i>access-type</i>	describes the type of privilege the user has to access information on this node. There are four types of access. They are: <ul style="list-style-type: none">▪ NONE — no access for this user. This is the default.▪ READ — provides read only access.▪ WRITE — provides write only access.▪ ALL — provides both read and write access.

DEFINE ACCESS

Example

```
NCP> DEFINE ACCESS USER BARKER PASSWORD JUMPER READ (RET)
```

This command defines access information for the user BARKER. In this case, the password is JUMPER and the access type is READ. This means that the user BARKER can only read information on your node.

DEFINE CIRCUIT

DEFINE CIRCUIT

The DEFINE CIRCUIT command defines permanent characteristics for the circuit. The value you specify does not take effect until the next time you boot your system. (To have the value take effect immediately, but only temporarily, use the SET CIRCUIT command.)

Format

```
DEFINE CIRCUIT { HELLO TIMER seconds
                  MULTICAST-LISTENER {DISABLED}
                                      {ENABLED}
                  OWNER {DECNET}
                              {DLX}
                              {MOP}
                  SERVICE {DISABLED}
                          {ENABLED}
                  STATE {ON}
                       {OFF} }
```

where

HELLO TIMER *seconds* specifies the frequency of routing hello messages sent to the adjacent node over the circuit. The valid range is 1 to 8191 seconds. The default is 30.

MULTICAST-LISTENER sets the circuit's multicast-listener state. The default is enabled.

DISABLED specifies that the circuit will not respond to multicast requests. **This applies to Ethernet communications only.**

ENABLED specifies that the circuit will respond to multicast requests. **This applies to Ethernet communications only.**

OWNER specifies the circuit owner. The default is DECNET.

DEFINE CIRCUIT

SERVICE	sets the circuit's service state. The default is ENABLED.
DISABLED	specifies that the circuit is unavailable for service operations.
ENABLED	specifies that the circuit is available for special network activity such as loopback testing.
STATE	sets the line's operational state to ON or OFF. The default is ON.
ON	allows network traffic to flow over the circuit. This is the normal operational state.
OFF	allows no traffic to flow over the circuit. The circuit is unavailable for any network activity.

Example

```
NCP> DEFINE CIRCUIT STATE ON (RET)
```

This command sets the circuit state to ON for the next system reboot.

DEFINE EXECUTOR

DEFINE EXECUTOR

The DEFINE EXECUTOR command defines executor characteristics that become effective after the next system reboot. (To have the value take effect immediately, but only temporarily, use the SET EXECUTOR command.)

Format

DEFINE EXECUTOR ADDRESS *node-address*
CONFIDENCE TIMER *number*
DELAY FACTOR *number*
DELAY WEIGHT *number*
IDENTIFICATION *id-string*
INACTIVITY TIMER *seconds*
INCOMING TIMER *seconds*
MAXIMUM BUFFERS *number*
MAXIMUM LINKS *number*
NAK QUOTA *number*
NAME *node-name*
OUTGOING TIMER *seconds*
RECEIVE PASSWORD *password*
RECEIVE PIPE QUOTA *number*
RETRANSMIT FACTOR *number*
SEGMENT BUFFER SIZE *number*
STATE [ON | OFF]
TRANSMIT PASSWORD *password*
TRANSMIT PIPE QUOTA *number*
AUTOBOOT [ENABLED | DISABLED]

where

ADDRESS *node-address* specifies the address assigned to the executor node. The node address is a unique numeric identification for the node. It must include an area number and a node number.

CONFIDENCE TIMER *number* The value range for this timer is 1 to 65535. The default is 15.

DEFINE EXECUTOR

DELAY FACTOR <i>number</i>	determines the amount of time to wait before a message is retransmitted to a node. The time is measured in increments of $\frac{1}{16}$ th seconds. The number is a decimal in the range of 16 to 4095. The default number is 32 (which means that the delay factor would then be $\frac{32}{16}$ seconds, or 2 seconds).
DELAY WEIGHT <i>number</i>	is the weight to apply to a current round trip delay to a remote node when updating the estimated round trip delay to a node. The number is decimal in the range 1 to 255. The default is 1.
IDENTIFICATION <i>id-string</i>	<p>specifies a text identification string for the executor node. The string can consist of 1 to 32 alphanumeric characters. You must use a set of double quotation marks (“ ”) to delimit any string containing blanks or tabs. You cannot use a single set of quotation marks within the identification string.</p> <p>You can use the IDENTIFICATION parameter to identify the executor node to other nodes in the network (for example, by including your name or department in the string).</p>
INACTIVITY TIMER <i>seconds</i>	is the maximum duration of inactivity (no data in either direction) on a logical link before the node checks to see if the logical link still works. If no activity occurs within the minimum number of seconds, the node generates traffic to test the link. The value range is 1 to 65535. The default is 30.
INCOMING TIMER <i>seconds</i>	is the maximum duration between the time a connection request is received at the executor node and the time that it takes to accept or reject the request. If the request is not accepted or rejected by the user program within the specified number of seconds, the connection request is automatically rejected. If no value is set, there is no timer. The value range is 1 to 65535. The default is 45.

DEFINE EXECUTOR

MAXIMUM BUFFERS <i>number</i>	specifies the maximum number of large network communication buffers available for use by DECnet-DOS. The valid range is 1 to 255. The default is six times (6 ×) the number of links. For example, if your number of maximum links is 4, then the number of maximum buffers would be 6 × 4, or 24. The actual number of buffers is restricted by available memory. This affects the network response time and memory usage. The default is 24.
MAXIMUM LINKS <i>number</i>	specifies the maximum number of active logical links for the executor node. The valid range is 1 to 32. The default is 4.
NAK QUOTA <i>number</i>	This is the number of out-of-order segments to receive before sending a negative acknowledgment (NAK) out on the logical link. This number must be less than or equal to the RECEIVE PIPE QUOTA. The value range for this quota is 0 to 65535. The default is 0 (or 6 for slower devices and processors).
NAME <i>node-name</i>	specifies the node name for the executor node. The node name is an identification string consisting of one to six alphanumeric characters, including at least one alphabetic character.
OUTGOING TIMER <i>seconds</i>	is the duration between the time that the executor node requests a connection and the time that it takes for the request to be acknowledged at the remote node. The value range is 1 to 65535. The default is 60.
RECEIVE PASSWORD <i>password</i>	is the password the local node must receive from the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting of eight alphanumeric characters.
RECEIVE PIPE QUOTA <i>number</i>	the number of segments the driver will allow to be received for a link by flow control. (A driver is a set of code that handles the physical input and output to a specific device.) The valid range is 1 to 65535. The default is 6.

DEFINE EXECUTOR

- RETRANSMIT FACTOR** *number* is the maximum number of times that the executor node will restart the retransmission timer when it expires. If the number is exceeded, the logical link is disconnected. The number is a decimal value in the range of 1 to 65535. The default is 12.
- SEGMENT BUFFER SIZE** *number* specifies the size of the segment buffers in bytes. These buffers are used for transmitting DECnet messages off the local area network only. (The segment size on the local area network is fixed.) The size is a decimal integer in the range of 1 to 65535. The default is 557.
- STATE ON** allows logical links to be established to the executor node. The executor's state is OFF if the DECnet network process fails to find the DECnet database file, DECPARM.DAT.
- When the state is set to OFF, the system will reboot with the executor state OFF.
- TRANSMIT PASSWORD** *password* is the password the local node must transmit to the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting of eight alphanumeric characters.
- TRANSMIT PIPE QUOTA** *number* is the number of segments the driver will buffer into NSP before it blocks the user on a transmission. (NSP is a Network Services Protocol that NCP uses to perform network management and to exchange messages over logical links.) The valid range is 1 to 65535. The default is 6.
- AUTOBOOT** This parameter is used by MS-NET. The default is ENABLED.

DEFINE EXECUTOR

Examples

```
NCP> DEFINE EXECUTOR ADDRESS 2.197 (RET)
```

This command defines the executor address as 2.197.

```
NCP> DEFINE EXECUTOR ADDRESS 2.197 NAME MOTHER (RET)
```

This command defines the executor address as 2.197 and assigns MOTHER as the executor name.

```
NCP> DEFINE EXECUTOR MAXIMUM LINKS 6 (RET)
```

This command defines the maximum number of logical links for the executor node as 6.

DEFINE LINE

The DEFINE LINE command defines the state of the line at DECnet start-up. It becomes effective with the next system reboot. (To have the value take effect immediately, but only temporarily, use the SET LINE command.)

Format

```
DEFINE LINE [line-id] {
    DEVICE [device-id]
    MODEM { NULL }
           { FULL }
    RECEIVE BUFFERS n
    SPEED baud-rate
    STATE { ON }
          { OFF }
```

where

LINE [*line-id*] specifies either ASYNC-1 or ETHER-1 as the line for which parameters are to be created or modified. Since there is only one line to use for each configuration, the *line-id* is optional.

DEVICE *device-id* specifies the device for controlling the asynchronous DDCMP line. The line's circuit must be in the OFF state. For the VAXmate personal computers, the device is COM-1.

MODEM specifies the type of modem control to be used. Note that modem control is used only with asynchronous DDCMP connections.

NULL specifies that modem control signals will not be checked.

FULL specifies that modem control signals will be checked. The line will be shut down if the modem loses its connection. This is the default.

DEFINE LINE

RECEIVE BUFFERS *n* specifies the number of buffers to be used for receiving information. Increasing the number of buffers affects the network response time and memory usage (for use only in Ethernet communications). The valid range is 1 to 1024. The default is 8 (for Ethernet only).

SPEED *baud-rate* sets the DDCMP line speed to one of the following:

50	150	1200	3600
75	200	1800	4800
110	300	2000	7200
134	600	2400	9600

The default is 9600. For high performance systems only, a speed of 19200 is available.

STATE defines the line's reboot state to ON or OFF. When the line state is ON, the line is available for normal use. When the line state is OFF, the line's database and parameters are present, but the line is not available for any type of network activity.

If there is no DECPARM.DAT file, the default line state for reboot is OFF.

NOTE

Information about modem, line speed, and service state applies to asynchronous DDCMP communications only.

Examples

```
NCP>DEFINE LINE STATE ON (RET)
```

This command defines the line state as ON. When the system reboots, the line will come up in the ON state.

```
NCP>DEFINE LINE RECEIVE BUFFERS 30 (RET)
```

This command defines the maximum number of receive buffers to use for Ethernet communication as 30.

DEFINE NODE

The DEFINE NODE command assigns a node name plus access control information to a unique node address. If you want the characters representing the access information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks. For example:

abc will be stored in the database as **ABC**

“Aab” will be stored in the database as **Aab**

Format

DEFINE NODE *node-address* NAME *node-name* [*access-info*][LAT-HOST][MS-NET]

where

NODE *node-address* specifies the address of the node to be defined. The node address is a unique numeric identification for the node. It must include an area number and a node number.

NAME *node-name* specifies the name to be associated with the node address. The node name is an identification string consisting of one to six alphanumeric characters, including at least one alphabetic character.

access-info specifies access control information for the remote node. (See Chapter 1 for more details on specifying access control information.) This information uses the following format:

USER *user-name* [PASSWORD *password*]
[ACCOUNT *account*]

where

user-name is a character string of 1 to 39 alphanumeric characters that identifies the user at the remote node.

password is a character string of 1 to 39 alphanumeric characters that may be required to access files or programs on the remote node.

account is a character string of 1 to 39 alphanumeric characters.

DEFINE LINE

MS-NET	indicates that the node is an MS-NET server. If you have PCSA installed (using MS-NET or NETBIOS), this command will cause an entry in the MS-NET volatile database. (Also refer to the PURGE NODE command.)
LAT-HOST	indicates that the node is a LAT host.

Examples

```
NCP> DEFINE NODE 2.65 NAME MADRID USER MAGIC PASSWORD WAND (RET)
```

This command assigns the node name MADRID to the node at address 2.65. It also specifies the user-name as MAGIC and the password as WAND.

```
NCP> DEFINE NODE YODA FROM R2D2 (RET)
```

This command allows you to copy the node name YODA and its node address from the specified remote node R2D2.

If you want to add access control information or a node designation to a node that you have already defined in the database, you do not have to type both the node name and node address to add the information. You can use either the node's name or its address. For example, if you have already defined node BORIS with its address as 1.2, you can use either the name or the number in the following examples.

```
NCP> DEFINE NODE BORIS USER BENCH (RET)
```

This command assigns access information for the user BENCH to the previously-defined node BORIS, using only the node name.

```
NCP> DEFINE NODE 1.2 LAT-HOST (RET)
```

This command assigns a LAT host designation to the previously-defined node BORIS, using only the node number.

DEFINE OBJECT

The DEFINE OBJECT command defines object information for the Job Spawner. The information is stored in the Spawner object database, DECOBJ.DAT. The Spawner uses the database information to start a program or application whenever it receives a connect request from other nodes in the network.

In previous versions of DECnet-DOS, the Spawner used a file called DECSPAWN.DAT. This was an ASCII file containing object information for the Spawner. You can no longer use DECSPAWN.DAT. You must use the NCP DEFINE OBJECT command to create the binary database file DECOBJ.DAT in order for the Spawner to work properly. For more information about using the Job Spawner, refer to the *DECnet-DOS User's Guide*.

If you want the object information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks. For example:

abc will be stored in the database as **ABC**

“Aab” will be stored in the database as **Aab**

Format

```
DEFINE OBJECT object-name [NUMBER n] FILE file-name [ARGUMENTS xxx]
```

where

object-name is the name of the DECnet object. The object name can have a maximum length of 15 characters.

n is the number of the DECnet object. The range for this number is 0 to 255. Numbers 1 to 127 are reserved for DECnet-supplied objects. Numbers 128 to 255 can be used for user-written applications. The default is 0.

file-name is the name of a batch file or program to be started by the Spawner. Batch file names must end with the .BAT extension. (The file name may include a path specification.)

DEFINE OBJECT

NOTE

The DECnet-DOS Installation Procedure (DIP) defines some objects for you during the installation process. DIP lets you decide which objects to install. You can use NCP commands to change or delete these objects or to define new objects.

xxx are the command line arguments for the program specified with FILE. If there are spaces embedded within the string, be sure to enclose the string in quotation marks.

Examples

```
NCP>DEFINE OBJECT FAL NUMBER 17 FILE FAL (RET)
```

This command defines the File Access Listener (FAL) as object number 17.

```
NCP>DEFINE OBJECT MYBAT NUMBER 0 FILE MYBAT.BAT ARGUMENTS "ONE TWO" (RET)
```

This command defines a batch file (MYBAT.BAT) as object number 0.

```
NCP>DEFINE OBJECT TST NUMBER 1 FILE TST.BAT ARGUMENTS "One Two"(RET)
```

This command defines a batch file (TST.BAT) as object number 1. However, the arguments for this file will be stored in the database exactly as indicated in the quoted string.

DEFINE REMOTE-ADAPTER-NAME

The DEFINE REMOTE-ADAPTER-NAME command ties a remote adapter name to a remote node and object. The name is stored in the remote adapter database, DECRET.DAT. The adapter name includes a node name and a particular object associated with that node name.

This information is for MS-NET use ONLY. A remote adapter is a network application which is written to use the NETBIOS emulator interface. The application resides on a remote personal computer.

To have the value take effect immediately, but only temporarily, use the SET REMOTE-ADAPTER-NAME command.

If you want the user information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks. For example:

abc will be stored in the database as **ABC**

“Aab” will be stored in the database as **Aab**

Format

```
DEFINE REMOTE-ADAPTER-NAME name NODE node-id OBJECT n [ USER user-id
  PASSWORD password
  ACCOUNT account ]
```

where

name is a 1- to 16-character alphabetic string that specifies the name you want to assign to the remote application. If you want the characters representing the name to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks.

DEFINE REMOTE-ADAPTER-NAME

<i>node-id</i>	identifies the node that will be associated with this remote adapter. The node you use must be one that is already defined in the node database, DECNODE.DAT. You must identify a node for each remote adapter name that you define. The node-id can be either the node's name or its address. A node name is a 1- to 6-character alphanumeric string that identifies a specific node. A node address is a numeric character string consisting of an area number and a specific node number. The node address also serves as a unique identification of the node in the network.
<i>n</i>	is the number of the DECnet object. The range for this number is 0 to 255. The default is 0.
<i>user-id</i>	is the user information you may use for accessing the loopback mirror on the remote node. A user ID consists of 1 to 39 alphabetic characters.
<i>password</i>	is a unique character string that you may use for accessing the loopback mirror on the remote node. A user's password consists of 1 to 39 alphanumeric characters (some systems restrict password lengths to only 8 characters).
<i>account</i>	is alphanumeric information you may need to access the remote node's loopback mirror. The information can consist of 1 to 39 alphabetic characters.

Example

```
NCP> DEFINE REMOTE-ADAPTER-NAME WINSTON (RET)
```

EXIT

The EXIT command lets you exit from NCP. You can also use **CTRL/Z** **RET** to exit from NCP. Both methods have the same effect.

Format

EXIT

Example

```
NCP> EXIT RET
```

```
C>
```

This command causes you to exit from NCP and returns you to the prompt or system you were using previously.

HELP

HELP

The HELP command displays information about NCP commands on your screen.

Format

HELP [*command-verb* [*entity*]]

where

command-verb specifies the NCP command for which you would like more information.

entity specifies that you would like information about the specific command as it relates to this component.

Example

```
NCP> HELP LIST NODE (RET)
```

This command causes HELP information to be displayed for the LIST NODE command. The system responds with:

Display information about a remote node contained in the permanent database.

```
LIST NODE [node-id]          [TO filename]
LIST NODE [area.*]          [TO filename]
LIST NODE [*.*]             [TO filename]
```

LIST ACCESS

The LIST ACCESS command displays an entry in the incoming access database (DECACC.DAT) for a specific user. The access information is stored on a per user basis, and it includes the password and access type. The access type describes the type of privilege the user has to access information on your node, such as READ or WRITE privileges.

If passwords are included as part of the incoming access information, they do not display when you issue the LIST ACCESS command.

The LIST KNOWN ACCESS command displays all entries contained in the incoming access database. You can also redirect this information to an output file for future reference.

Format

LIST ACCESS USER *user-name* [TO *file-id*]

or

LIST KNOWN ACCESS [TO *file-id*]

where

user-name is a 1 to 39 alphabetic character string that defines the user whose access information you wish to display. If you want the user name to appear in lowercase letters, be sure to enclose the string in quotation marks.

TO *file-id* indicates the information defined in Table 4-1.

Example

```
NCP> LIST KNOWN ACCESS (RET)
```

LIST CIRCUIT

LIST CIRCUIT

The LIST CIRCUIT command displays all the permanent parameters you can change using the DEFINE CIRCUIT command. You can either display the information on your screen or redirect it to an output file at the local node.

This command will display only information that you can change. To view all of the information about the circuit, use the SHOW CIRCUIT command.

Format

```
LIST CIRCUIT [circuit-id] [ CHARACTERISTICS ] [TO file-id]  
                        [ STATUS  
                        [ SUMMARY ]
```

where

CIRCUIT [*circuit-id*] specifies the circuit (either ASYNC-1 or ETHER-1) for which information is to be displayed. Since there is only one circuit to use for each configuration, the *circuit-id* is optional.

CHARACTERISTICS indicate the information defined in Table 4-1.
STATUS
SUMMARY
TO *file-id*

Examples

```
NCP> LIST CIRCUIT ASYNC-1 CHARACTERISTICS (RET)
```

This command displays the permanent attributes of circuit ASYNC-1.

```
NCP> LIST CIRCUIT ETHER-1 CHARACTERISTICS TO CIR.DAT (RET)
```

This command redirects the permanent attribute information about circuit ETHER-1 to an output file named CIR.DAT.

LIST EXECUTOR

The LIST EXECUTOR command displays permanent information about the local node. This command will display only information that you can change. To view all of the information about the local node, use the SHOW EXECUTOR command.

Format

```
LIST EXECUTOR [ CHARACTERISTICS ] [ TO file-id ]  
                [ STATUS  
                [ SUMMARY ]
```

where

CHARACTERISTICS indicate the information defined in Table 4-1.
STATUS
SUMMARY
TO *file-id*

LIST EXECUTOR

Example

```
NCP> LIST EXECUTOR CHARACTERISTICS (RET)
```

This command displays the permanent characteristics that you can set for your executor node. Here is a sample system response:

```
Executor Characteristics as of 23-Aug-1987 16:17:53
```

```
Executor node           = 1.111 (VIGOR)

Executor state          = On
Executor Identification = DECnet-VAXmate V2.0
Node name               = VIGOR
Node address            = 1.111
Incoming timer          = 45
Outgoing timer          = 60
Confidence timer       = 15
Incoming proxy          = Disabled
Outgoing proxy          = Enabled
Maximum links           = 8
Delay factor            = 16
Delay weight            = 2
Inactivity timer       = 30
Retransmit factor      = 6
Maximum buffers         = 24
Segment buffer size    = 557
Receive password       = (password is not set)
Transmit password      = (password is not set)
Transmit pipe quota    = 8
Receive pipe quota     = 3
Out-of-order nak quota = 0
Autoboot               = Enabled
```

LIST LINE

The LIST LINE command displays the permanent parameters that can be changed for the DECnet line (ASYNC-1 or ETHER-1).

This command will display only information that you can change. To view all of the information about the line, use the SHOW LINE command.

Format

```
LIST LINE [line-id] [CHARACTERISTICS
                    STATUS
                    SUMMARY] [TO file-id]
```

where

line-id identifies the line (ASYNC-1 or ETHER-1) for which you want information displayed. Since there is only one line to use for each configuration, the *line-id* is optional.

CHARACTERISTICS indicate the information defined in Table 4-1.
 STATUS
 SUMMARY
 TO *file-id*

Example

```
NCP>LIST LINE CHARACTERISTICS (RET)
```

This command displays permanent information about your line. Here is a sample system response:

```
Line Characteristics as of 23-Aug-1987 16:17:57
```

```
Line = ETHER-1
```

```
Line state = On
```

LIST NODE

LIST NODE

The LIST NODE command displays permanent local information about a specific remote node. The node information appears on the screen in front of you.

If you are checking the status of a particular node, that node's name and address must already be defined in the node database. If there is no node database, use the NCP DEFINE NODE command to establish a database.

The LIST NODE *area.** command displays all of the nodes in the local database that are in one specified area.

The LIST KNOWN NODES command displays all of the nodes in the local node database.

Format

LIST NODE *node-id* [TO *file-id*]

LIST NODE *area.** [TO *file-id*]

or

LIST KNOWN NODES [TO *file-id*]

LIST KNOWN NODES MS-NET [TO *file-id*]

LIST KNOWN NODES LAT [TO *file-id*]

where

node-id specifies the name or the address of the node for which you want to display information. A node name is a 1- to 6-character alphanumeric string that identifies a specific node. A node address is a numeric character string consisting of an area number and a specific node number. The node address also serves as a unique identification of the node in the network.

TO *file-id* indicates the information defined in Table 4-1.

LIST NODE

MS-NET indicates those nodes that have been defined as MS-NET servers.

LAT indicates those nodes that have been defined as LAT host nodes.

Examples

```
NCP> LIST NODE GRAHAM (RET)
```

This command displays information for the node GRAHAM. Here is a sample system response:

```
Known permanent nodes as of 20-Aug-1987 16:36:30
```

Node Address	Node Name	Active Links	LAT/MS-NET	Account Information
4.30	GRAHAM	1	M L	

```
NCP> LIST KNOWN NODES (RET)
```

This command displays the nodes that have been defined in your network database. Here is a sample system response:

```
Known permanent nodes as of 20-Aug-1987 16:36:30
```

```
Executor node = 55.86 (VIGOR)
```

```
Executor state On  
Executor Identification DECnet-VAXmate V2.0
```

Node Address	Node Name	Active Links	LAT/MS-NET	Account Information
2.375	LONDON	0		/SMITH/...
4.30	STADIA	1	M L	
4.60	BASBAL	0		
4.62	PONTI	0		
4.64	AGNES	0		
4.215	SIRIUS	0		
4.216	SAGAN	0		
4.298	DEMBO	0		
55.86	VIGOR	0		/D_JONES
55.124	UNWELL	1	M L	
55.170	HELGA	0		
55.242	JUN	0	L	
55.261	DSRVC1	0		
55.335	MAGNTA	0		

LIST NODE

```
NCP>LIST NODE 55.* MSNET LAT (RET)
```

This command displays all of the nodes that have been defined for area 55 and have been designated as either MS-NET servers or LAT hosts. Here is a sample system response:

```
Known Permanent Nodes as of 25-Oct-1987 14:06:25
```

```
Executor node           = 55.86 (VIGOR)
```

```
Executor state         On  
Executor Identification DECnet-DOS V2.0
```

Node Address	Node Name	Active Links	LAT/ MS-NET	Account Information
4.30	GRAHAM	0	M L	
4.60	BASBAL	0	L	
4.298	DEMBO	0	L	
4.299	PIFFLE	0	L	

LIST OBJECT

The LIST OBJECT command displays information about individual objects that are contained in the Job Spawner object database (DECOBJ.DAT).

The LIST KNOWN OBJECTS command displays all of the objects that are contained in the object database.

Note that the LIST command is case sensitive. This means that you must specify the object you want to display by enclosing the name in quotation marks. If you have objects that have been stored in both all capital letters and in mixed-case letters (such as "FAL" and "tel"), you must specify the object exactly as it has been stored in the database. If you do not specify the proper object form when you issue the LIST command, NCP will not find the matching object in the database.

Format

```
LIST OBJECT object-name [TO file-id]  
           object-number [TO file-id]
```

or

```
LIST KNOWN OBJECTS [TO file-id]
```

where

object-name specifies the name of the object for which you want to list information. The name can be from 1 to 15 characters long.

object-number specifies the number of the object for which you want to list information. The value for this number can be from 0 to 255.

TO *file-id* indicates the information defined in Table 4-1.

LIST OBJECT

Examples

```
NCP>LIST OBJECT FAL (RET)
```

This command displays information in DECOBJ.DAT about the object FAL.

```
NCP>LIST KNOWN OBJECTS (RET)
```

This command displays information about all of the objects in DECOBJ.DAT. Here is a sample system response:

DECnet Objects		
	Taskname	File "Arguments"
0	tell	tells
17	FAL	FAL
63	DTR	DTR

LIST REMOTE-ADAPTER-NAME

The LIST REMOTE-ADAPTER-NAME command displays information about a specific remote adapter name in the DECRET.DAT database. The remote adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on a remote personal computer.

The LIST KNOWN REMOTE-ADAPTER-NAMES command displays information about all of the remote adapter names in the DECRET.DAT database.

Note that the LIST command for adapter name information is case sensitive. This means that you must specify the exact name you want to display by enclosing the name in quotation marks. If you have two remote adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the LIST REMOTE-ADAPTER-NAME command. If you do not use quotation marks with the LIST command, NCP will display the name that is stored in all capital letters.

Format

LIST REMOTE-ADAPTER-NAME *name*

or

LIST KNOWN REMOTE-ADAPTER-NAMES [TO *file-id*]

where

name is a 1- to 16-character alphabetic string that specifies the remote application for which you want to display information.

TO *file-id* indicates the information defined in Table 4-1.

Example

```
NCP>LIST REMOTE-ADAPTER-NAME Winter (RET)
```

This command displays information about the remote adapter named WINTER.

LOOP CIRCUIT

LOOP CIRCUIT

The LOOP CIRCUIT command performs loop tests for the DECnet circuit. You can use the loop circuit tests for either asynchronous DDCMP configurations or for Ethernet configurations.

If you are using DDCMP, the tests verify that network communication is possible between your local node and the following:

- The loopback plug or controller.
- The loopback plug or cable.
- The local modem.
- The remote modem.
- The adjacent node.

If you are using Ethernet, the tests verify that network communication is possible between your local node and the following:

- A specific remote node.
- Any remote node that responds to the loopback request.

When you issue the LOOP CIRCUIT command, NCP determines whether you are using DDCMP or Ethernet on your node. The prompts that NCP returns for this command will vary depending upon your node's configuration.

When you run the LOOP CIRCUIT test for DDCMP, NCP prompts you for information needed to run the test. You may need to perform one of the following operations:

- Place the loopback plug on the controller.
- Place the loopback plug on the end of the cable that is attached to the controller.
- Place the local modem in loopback mode (by pressing a switch on the modem).

LOOP CIRCUIT

- Place the remote modem in loopback mode (by pressing a switch on the modem).
- If you are performing a loop circuit test to an adjacent node, make sure the adjacent node is set with CIRCUIT STATE SERVICE. (Note that this is necessary for DDCMP configurations only.)

When you run the LOOP CIRCUIT test for Ethernet, you do not need to perform these operations. If you issue the command without specifying a responding node, a loop request is sent out to the multicast loopback assistance address. This means that any node on the Ethernet may reply to the loop request. Once a node responds to this request, NCP displays information about the loop message that was sent and the number of the responding node.

When you run any of the LOOP CIRCUIT tests, they check the network path from the local node to the hardware level on the remote node, the modem, or the loopback plug.

NCP performs each test *n* times, as long as the test is successful. The default value for *n* is 1. You can change this value by using the COUNT *n* option after the LOOP command.

When the test is complete, NCP displays a success message. If the test fails, NCP displays an error message.

Format (for DDCMP Configurations)

```
LOOP CIRCUIT [COUNT n] [WITH MIXED | ONES | ZEROES] [LENGTH n]
```

where

COUNT *n* is the number of times to repeat the loop test. The default is 1.

MIXED | ONES | ZEROES indicates that the message type should be mixed ones and zeroes, all ones, or all zeroes. The default is MIXED.

LENGTH *n* is the length of the loop message to be sent. The maximum value you can use is 512. The default is 40.

LOOP CIRCUIT

Format (for Ethernet Configurations)

LOOP CIRCUIT [COUNT *n*] [WITH MIXED | ONES | ZEROES] [LENGTH *n*]

or

LOOP CIRCUIT NODE *node-id*
[COUNT *n*] [WITH MIXED | ONES | ZEROES] [LENGTH *n*]

or

LOOP CIRCUIT PHYSICAL-ADDRESS *hh-hh-hh-hh-hh-hh*
[COUNT *n*] [WITH MIXED | ONES | ZEROES] [LENGTH *n*]

where

COUNT *n* is the number of times to repeat the loop test. The default is 1.

MIXED | ONES | ZEROES indicates that the message type should be mixed ones and zeroes, all ones, or all zeroes. The default is MIXED.

LENGTH *n* is the length of the loop message to be sent. The maximum value you can use is 512. The minimum value is 46. This is also the default.

NODE *node-id* is the name of the designated node to which you want to send loop messages. You can use either the node's name or its address. The node must already be defined by the NCP command SET NODE.

PHYSICAL-ADDRESS *hh-hh-hh-hh-hh-hh* is a hexadecimal number representing the actual physical address of the node you are trying to contact. The range for this number is 0 – F.

Examples

The following example illustrates a DDCMP loop circuit test.

```
NCP>LOOP CIRCUIT (RET)
```

LOOP CIRCUIT (DDCMP) - Do one of the following, then press any key to begin test. Check the Network Management Guide for details.

1. Place loopback plug on controller.
2. Place loopback plug on end of cable attached to controller.
3. Place local modem in loopback.
4. Place remote modem in loopback.
5. For circuit loopback to the adjacent node, be sure the adjacent node is set with CIRCUIT STATE SERVICE.

The following example illustrates an Ethernet loop circuit test to a multicast address.

```
NCP>LOOP CIRCUIT (RET)
```

```
LOOP CIRCUIT test started at 21-Aug-1987
```

```
Sending loop message 1, 46.  
Message echoed by remote circuit loopback 1, 46 bytes.  
Multicast Loop Circuit echoed by node 55.62
```

```
LOOP CIRCUIT test finished successfully at 21-Aug-1987 16:26:32
```

```
NCP>
```

The following example illustrates an Ethernet loop circuit test to the node 55.101 with a count of 3.

```
NCP>LOOP CIRCUIT NODE 55.101 COUNT 3 (RET)
```

```
LOOP CIRCUIT test started at 21-Aug-1987 16:29:08
```

```
Sending loop message 1, 46.  
Message echoed by remote circuit loopback 1, 46 bytes.  
Sending loop message 2, 46.  
Message echoed by remote circuit loopback 2, 46 bytes.  
Sending loop message 3, 46.  
Message echoed by remote circuit loopback 3, 46 bytes.
```

```
LOOP CIRCUIT test finished successfully at 21-Aug-1987 16:29:43
```

```
NCP>
```

LOOP EXECUTOR

LOOP EXECUTOR

The LOOP EXECUTOR command invokes the loop test for your local (executor) node. It verifies the operation of your local node by checking the local network software. This test verifies that your local node software has been properly installed.

When you issue this command, NCP performs the test *n* times, as long as the test is successful. The default value for *n* is 1. You can change this value by using the COUNT *n* option after the LOOP command.

When the test is complete, NCP displays a success message. If the test fails, NCP displays an error message.

Format

```
LOOP EXECUTOR [COUNT n] [WITH MIXED | ONES | ZEROES] [LENGTH n]
```

where

COUNT *n* is the number of times to repeat the loop test. The default is 1.

MIXED | ONES | ZEROES indicates that the message type should be mixed ones and zeroes, all ones, or all zeroes. The default is MIXED.

LENGTH *n* is the length of the loop message to be sent. The maximum value you can use is 512. The default is 46.

Example

The following example requests that the loop test be performed 10 times, with mixed ones and zeroes and a message length of 50.

```
NCP>LOOP EXECUTOR COUNT 10 WITH MIXED LENGTH 50 (RET)
```

LOOP LINE CONTROLLER

The LOOP LINE CONTROLLER command is used in Ethernet configurations only. It performs a loopback test within the local node at the device (or controller) level.

The loop line controller test requires the use of the loopback connector. You must attach this connector to the Ethernet controller in order to perform this test.

When you issue the LOOP LINE CONTROLLER command, NCP prompts you for information needed to run the test. There are no arguments or switches associated with this command.

Format

LOOP LINE CONTROLLER

Example

The following example illustrates a sample loop line controller test and possible system response.

```
NCP> LOOP LINE CONTROLLER (RET)
```

```
LOOP LINE CONTROLLER (Ethernet)
```

1. Unplug network cable from Controller on back of your computer.
2. Place the loopback plug on the Controller. Test will fail if loopback plug is not in place.
3. Press any key to begin test.
4. At the end of the test, reconnect the Controller to the network.

```
LOOP LINE CONTROLLER test started at 19-Aug-1987 11:08:47
```

```
LOOP LINE CONTROLLER test finished successfully at 19-Aug-1987  
11:08:49
```

```
Please remove loopback plug and reconnect your node to the  
network.
```

```
Press any key to continue.
```

```
NCP>
```

LOOP NODE

LOOP NODE

The LOOP NODE command invokes the loop test for the remote node. It verifies that your node can communicate with a specified remote node. To perform this test, you need to include any network parameters that are necessary for accessing the loopback mirror on the remote node. These parameters may include the node ID, the user ID, the password, and the account. You can enter these parameters before you run the test by using SET commands.

It is not necessary to include access information for all systems. Most systems do not require this information for performing the remote node test.

When you issue this command, NCP performs the test *n* times, as long as the test is successful. The default value for *n* is 1. You can change this value by using the COUNT *n* option after the LOOP command.

Before running the test, LOOP NODE sets the line state to ON. When the test is complete, NCP displays a success message. If the test is unsuccessful, NCP displays an error message.

If you do not specify user information for this command, NCP will use the default information that was set with the DEFINE NODE command.

Format

```
LOOP NODE node-id [ USER user-id
                     PASSWORD password
                     ACCOUNT account
                     COUNT n
                     WITH ONES | ZEROES | MIXED
                     LENGTH n ]
```

where

node-id specifies the name or the address of a remote node. A node name is a 1- to 6-character alphanumeric string that identifies a specific node. A node address is a numeric character string consisting of an area number and a specific node number. The node address also serves as a unique identification of the node in the network.

LOOP NODE

<i>user-id</i>	is the user information you may use for accessing the loopback mirror on the remote node. A user ID consists of 1 to 39 alphabetic characters.
<i>password</i>	is a unique character string that you may use for accessing the loopback mirror on the remote node. A user's password consists of 1 to 39 alphanumeric characters (some systems restrict password lengths to only 8 characters).
<i>account</i>	is alphanumeric information you may need to access the remote node's loopback mirror. The information can consist of 1 to 39 alphanumeric characters.
COUNT <i>n</i>	is the number of times to repeat the loop test. The default is 1.
ONES ZEROES MIXED	indicates that the message type should be all ones, all zeroes, or mixed ones and zeroes. The default is mixed.
LENGTH <i>n</i>	is the length of the loop message to be sent. The default is 46.

LOOP NODE

Example

```
NCP> LOOP NODE GRAHAM COUNT 5 LENGTH 40 (RET)
```

This command specifies the node GRAHAM as the remote node to be used in the remote node test. It specifies that the loop message should be repeated 5 times with a length of 40. Here is a sample system response:

```
LOOP NODE test started at 4-Aug-1987 14:32:14
  Connect complete to node GRAHAM
  Remote node maximum buffer size for loopback: 4096
```

```
Sending loop message 1, 40 bytes.
Successful send and receive, message 1.
Sending loop message 2, 40 bytes.
Successful send and receive, message 2.
Sending loop message 3, 40 bytes.
Successful send and receive, message 3.
Sending loop message 4, 40 bytes.
Sending loop message 5, 40 bytes.
Successful send and receive, message 4.
Successful send and receive, message 5.
```

```
LOOP NODE test finished successfully at 4-Aug-1987 14:32:15
```

Note that the messages do not necessarily return in the order they are sent (messages 4 and 5 in this example). This is normal output for the LOOP NODE command.

MIRROR

The MIRROR command is used for LOOP NODE tests from a remote node. MIRROR allows the LOOP NODE test to be run from remote systems which support the NCP loop node test to your local node. The maximum length of a message that NCP will loop back is 512 bytes.

Not all loop tests are available on all remote nodes. The tests you can use depend on the tests that are available at the remote node. The information required to run the test also depends on the remote node you are using.

The MIRROR command starts up a loopback mirror (DECnet object ID 25), which echoes test messages that it receives from a remote node back to that same remote node.

When the test run from the remote node is complete, you can press any key to return to the NCP command level.

Format

```
MIRROR
```

Example

```
NCP>MIRROR (RET)
```

This command starts the loopback mirror on your node. NCP displays the following information:

```
Loopback Mirror waiting to echo LOOP NODE test from remote node.  
Press any key to stop Loopback Mirror.
```

If a loop node test is detected from a remote node, NCP displays a message like this one:

```
Connect request received from node 4.299 (FREMI), object R_SMITH
```

After you press a key to stop the mirror, NCP displays a message and returns you to the NCP prompt.

```
Loopback mirror stopped
```

```
NCP>
```

MONITOR LOGGING

MONITOR LOGGING

The MONITOR LOGGING command continually displays on the screen in front of you network events as they occur. The logging of network events pauses when there are no more events to be displayed. You can stop the display of information logging and return to the NCP prompt by pressing any key on the keyboard.

Once the events have been displayed, the information contained in the event buffer is discarded. If you want to retain the logging information, you can redirect it to an output file. This is useful if you wish to store the information in order to analyze it later or if you need to show the information to a network support person. If you specify a file for storing log information, you can stop the input of information into the file by pressing any key.

Format

```
MONITOR LOGGING [TO file-id]
```

where

TO *file-id* indicates the information defined in Table 4-1.

Example

```
NCP>MONITOR LOGGING (RET)
```

Here is a sample system response:

```
Events logged as of 17-Jun-1987 11:17:41
```

```
Event type 4.10 Circuit up  
Occurred 17-Jun-1987 11:18:00  
Adjacent Node: 55.2 (LOWEND)
```

```
Event type 4.7 Circuit down - circuit fault  
Occurred 17-Jun-1987 11:18:09  
Adjacent Node: 55.2 (LOWEND)  
Reason: Line synchronization lost
```

```
Event type 4.10 Circuit up  
Occurred 17-Jun-1987 11:18:15  
Adjacent Node: 55.2 (LOWEND)
```

```
.  
. .
```

PURGE ACCESS

The PURGE ACCESS command removes incoming access information for the designated user. The access information is stored on a per user basis, and it includes the password and access type. The access type describes the type of privilege the user has to access information on your node. There are four types of access. They are:

- NONE — no access for this user. This is the default.
- READ — provides read only access.
- WRITE — provides write only access.
- ALL — provides both read and write access.

The PURGE KNOWN ACCESS command removes all incoming access information for all users in the incoming access database.

Note that the PURGE command is case sensitive. This means that you must specify the user information in quotation marks if it contains any lowercase letters. If you do not specify the proper format when you issue the PURGE command, NCP will not purge the information from the database.

Format

PURGE ACCESS USER *user-name*

or

PURGE KNOWN ACCESS

where

user-name is a 1 to 39 alphabetic character string that defines the user whose access information you want to remove.

Example

```
NCP>PURGE ACCESS USER BARKER (RET)
```

This command removes the entire entry for the user BARKER.

PURGE EXECUTOR

PURGE EXECUTOR

The PURGE EXECUTOR command removes specified executor node parameters from the permanent database. The parameters you can remove are RECEIVE PASSWORD and TRANSMIT PASSWORD. (To remove these parameters from the currently-running system only, use the CLEAR EXECUTOR command.)

The RECEIVE and TRANSMIT passwords are automatically exchanged when the executor or remote node turns on the communication line between itself and the adjacent node. The network coordinator defines these passwords for DDCMP use. The exchange of passwords also occurs when the communication line is restarted from either node due to errors.

Format

```
PURGE EXECUTOR {RECEIVE PASSWORD }  
                {TRANSMIT PASSWORD }
```

where

RECEIVE PASSWORD removes the password the executor node may receive from the adjacent node in order to exchange messages with the adjacent node. The receive password is only used if password checking is enabled on both nodes.

TRANSMIT PASSWORD removes the password the executor node may transmit to the adjacent node in order to exchange messages with the adjacent node.

NOTE

These passwords are used only for asynchronous DDCMP connections. They are used only if password checking is enabled on both nodes.

Example

```
NCP>PURGE EXECUTOR TRANSMIT PASSWORD (RET)
```

This command removes the password that the executor node must transmit to the adjacent node when the executor node first begins communications. Until the network coordinator defines a new transmit password, the executor node cannot open the communication line between itself and the adjacent node.

PURGE NODE

The PURGE NODE command removes parameters stored on the local node for either the specified remote node or all remote nodes known to the local node.

The PURGE KNOWN NODES command removes information from the local node database (DECNODE.DAT), including any related user, password, and account information.

Format

```
PURGE NODE node-id [ USER
                       PASSWORD
                       ACCOUNT
                       LAT-HOST
                       MS-NET ]
```

or

```
PURGE KNOWN NODES
```

where

NODE *node-id* specifies the node name (or node address) whose parameters are to be removed.

USER removes the user-name, password, and accounting information for the specified node.

PASSWORD removes only the password associated with the user-name.

ACCOUNT removes only the accounting information for the specified node.

LAT-HOST removes the indicator that identifies the node as a LAT host.

MS-NET removes the indicator that identifies the node as an MS-NET server.

KNOWN NODES removes node parameters (node name, node address, user ID, password and account) for all nodes known to the local node.

PURGE NODE

Example

```
NCP>PURGE NODE PARIS (RET)
```

This command removes all parameters for node PARIS from the local node's database.

PURGE OBJECT

The PURGE OBJECT command deletes information in the Spawner database (DECOBJ.DAT) for a specific object. You can delete an object by indicating either the object name or the object number.

The PURGE KNOWN OBJECTS command deletes all of the information about all of the objects in DECOBJ.DAT.

Note that the PURGE command is case sensitive. This means that you must specify the object you want to remove by enclosing the name in quotation marks if the name contains any lowercase letters. If you do not specify the proper object form when you issue the PURGE command, NCP will not find the matching object in the database.

Format

PURGE OBJECT *object-name*
object-number

or

PURGE KNOWN OBJECTS

where

object-name specifies the name of the object for which you want to delete information. The name can be from 1 to 15 characters long.

object-number specifies the number of the object for which you want to delete information. The value for this number can be from 0 to 255.

Example

```
NCP> PURGE OBJECT FAL (RET)
```

This commands deletes information about the object FAL.

PURGE REMOTE-ADAPTER-NAME

PURGE REMOTE-ADAPTER-NAME

The PURGE REMOTE-ADAPTER-NAME command deletes an entry from the permanent remote adapter name database (DECREM.DAT). The remote adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on a remote personal computer.

The PURGE KNOWN REMOTE-ADAPTER-NAMES command deletes all the remote adapter names (and associated information) from DECREM.DAT.

Format

PURGE REMOTE-ADAPTER-NAME *name*

or

PURGE KNOWN REMOTE-ADAPTER-NAMES

where

name is a 1- to 16-character alphabetic string that specifies the remote application you want to remove from the volatile database.

Example

```
NCP>PURGE REMOTE-ADAPTER-NAME WINSTON (RET)
```

This command deletes information about the remote adapter named WINSTON.

READ LOG

The READ LOG command displays the contents of the event logging buffer. Once the contents of the buffer have been displayed, the information contained in the event buffer is discarded. If you want to retain the logging information, you can redirect it to an output file. This is useful if you wish to store the information in order to analyze it later or if you need to show the information to a network support person.

If you specify a file for storing log information, you can stop the input of information into the file by pressing any key. Once the information has been redirected to an output file, it is discarded from the event logging buffer.

Format

```
READ LOG [TO file-id]
```

where

TO *file-id* indicates the information defined in Table 4-1.

Examples

```
NCP> READ LOG (RET)
```

This command displays the contents of the event logging buffer on the screen in front of you. Here is a sample system response:

```
Events logged as of 17-Jun-1987 11:17:41
Event type 4.10 Circuit up
Occurred 17-Jun-1987 11:18:00
Adjacent Node: 55.2 (LOWEND)
```

```
Event type 4.7 Circuit down - circuit fault
Occurred 17-Jun-1987 11:18:09
Adjacent Node: 55.2 (LOWEND)
Reason: Line synchronization lost
```

```
Event type 4.10 Circuit up
Occurred 17-Jun-1987 11:18:15
Adjacent Node: 55.2 (LOWEND)
```

```
NCP>
```

```
NCP> READ LOG TO LOGFILE.TXT (RET)
```

READ LOG

This command redirects the information in the event logging buffer to the file LOGFILE.TXT. Once the information has been redirected to the output file, it is discarded from the event logging buffer.

You can now exit from NCP and display the contents of this particular event buffer by viewing the output file you created. This is useful if you wish to store the information in order to analyze it later or if you need to show the information to a network support person.

To view the contents of LOGFILE.TXT, enter the following command:

```
C:\> TYPE LOGFILE.TXT (RET)
```

The system responds by displaying the contents of your output file. For example:

Events Logged as of 17-Aug-1987 16:46:24

Event type 0.0 Event records lost
Occurred 17-Aug-1987 10:22:48
Records lost: 22

Event type 4.18 Adjacency down - circuit fault
Occurred 17-Aug-1987 10:14:19
Adjacent node: 55.261 (DSRVC1)
Reason: Adjacency address change

Event type 4.15 Adjacency up
Occurred 17-Aug-1987 10:14:19
Adjacent node: 55.152

Event type 4.18 Adjacency down - circuit fault
Occurred 17-Aug-1987 10:14:31
Adjacent node: 55.152
Reason: Adjacency address change

Event type 4.15 Adjacency up
Occurred 17-Aug-1987 10:14:31
Adjacent node: 55.261 (DSRVC1)

Event type 4.18 Adjacency down - circuit fault
Occurred 17-Aug-1987 10:18:02
Adjacent node: 55.261 (DSRVC1)
Reason: Adjacency address change

Event type 4.15 Adjacency up
Occurred 17-Aug-1987 10:18:02
Adjacent node: 55.152

SET CIRCUIT

The SET CIRCUIT command modifies current circuit information.

Most parameters are set by your network coordinator. Therefore, you must obtain this information from that person.

Format

```
SET CIRCUIT [circuit-id] {
  HELLO TIMER seconds
  MULTICAST-LISTENER {DISABLED}
                    {ENABLED}
  OWNER {DECNET}
        {MOP}
  SERVICE {DISABLED}
         {ENABLED}
  STATE {ON}
       {OFF}
}
```

where

CIRCUIT [*circuit-id*] specifies the circuit (either ASYNC-1 or ETHER-1) for which parameters are to be defined or modified. Since there is only one circuit to use for each configuration, the *circuit-id* is optional.

HELLO TIMER *seconds* specifies the frequency of routing hello messages sent to the adjacent node over the circuit. The valid range is 1 to 8191 seconds. The default is 30.

MULTICAST-LISTENER sets the circuit's multicast-listener state. The default is enabled.

DISABLED specifies that the circuit will not respond to multicast requests. **This applies to Ethernet communications only.**

ENABLED specifies that the circuit will respond to multicast requests. **This applies to Ethernet communications only.**

OWNER specifies the circuit owner.

SET CIRCUIT

SERVICE	sets the circuit's service state. The default is ENABLED.
DISABLED	specifies that the circuit is unavailable for service operations.
ENABLED	specifies that the circuit is available for special network activity such as loopback testing.
STATE	sets the line's operational state to ON or OFF. The default state is ON.
ON	allows network traffic to flow over the circuit. This is the normal operational state.
OFF	allows no traffic to flow over the circuit. The circuit is unavailable for any network activity.

Example

```
NCP>SET CIRCUIT ASYNC-1 OWNER DECNET (RET)
```

This command identifies the owner of circuit ASYNC-1 as DECnet.

SET ECHO

The SET ECHO command determines whether a redirected input file is displayed on your screen as the file is executed. The default is OFF (no echo).

You can use the SET ECHO command only within a command file. You cannot use SET ECHO at the NCP prompt (using it this way will have no effect).

Format

```
SET ECHO {ON }  
         {OFF }
```

where

ON turns the echo on, causing the file's contents to be displayed on the screen as the file is executed.

OFF turns the echo off.

Example

To use SET ECHO, you should set up a command file that contains the SET ECHO command as well as other NCP commands. The following is a sample command file, named SAMPLE.TXT:

```
SET ECHO ON  
SHOW EXECUTOR CHARACTERISTICS  
EXIT
```

SET ECHO

Now, if you run your SAMPLE.TXT file as a batch file, you will see the results of the SHOW EXECUTOR CHARACTERISTICS command on the screen in front of you. Then, NCP will exit. For example:

```
C:\> NCP <SAMPLE.TXT (RET)
```

```
NCP> SHOW EXECUTOR CHARACTERISTICS (RET)
```

```
Executor Characteristics as of 23-Oct-1987 16:17:39
```

```
Executor node           = 1.111 (VIGOR)

Driver version number   = 1.3.29
Executor state         = On
Executor Identification = DECnet-DOS V2.0
Executor version       = 3.0.1
Node name              = VIGOR
Node address           = 1.111
Incoming timer         = 45
Outgoing timer        = 60
Confidence timer      = 15
Incoming proxy         = Disabled
Outgoing proxy        = Enabled
Active links           = 3
NSP version            = 4.0.0
Maximum links          = 8
Delay factor           = 16
Delay weight           = 2
Inactivity timer      = 30
Retransmit factor     = 6
Routing version       = 2.0.0
Routing types         = Nonrouting IV
Maximum buffers        = 24
Maximum buffer size   = 1498
Segment buffer size   = 557
Receive password      = (password is not set)
Transmit password     = (password is not set)
Database path         = C:\DECNET\
Transmit pipe quota   = 8
Receive pipe quota    = 3
PC type               = VAXmate
Out-of-order nak quota = 0
Autoboot              = Enabled
```

```
NCP> EXIT (RET)
```

```
C:\>
```

SET EXECUTOR

The SET EXECUTOR command sets the executor node's current parameters or characteristics. These settings are not preserved across system reboots. (To have the settings take effect the next time you boot your system, use the DEFINE EXECUTOR command.)

Format

```

SET EXECUTOR      ADDRESS node-address
                  CONFIDENCE TIMER number
                  DELAY FACTOR number
                  DELAY WEIGHT number
                  IDENTIFICATION id-string
                  INACTIVITY TIMER seconds
                  INCOMING TIMER seconds
                  NAME node-name
                  NAK QUOTA number
                  OUTGOING TIMER seconds
                  RECEIVE PASSWORD password
                  RECEIVE PIPE QUOTA number
                  RETRANSMIT FACTOR number
                  STATE ON
                  TRANSMIT PASSWORD password
                  TRANSMIT PIPE QUOTA number

```

where

ADDRESS *node-address* specifies the address assigned to the executor node. The node address is a unique numeric identification for the node. It must include an area number and a node number.

You can set ADDRESS only when the executor's state is OFF. The executor's state is OFF if the DECnet network process fails to find the DECnet database file, DECPARM.DAT.

CONFIDENCE TIMER *number* The value range for this timer is 1 to 65535. The default is 15.

SET EXECUTOR

DELAY FACTOR
number

determines the amount of time to wait before a message is retransmitted to a node. The time is measured in increments of $\frac{1}{16}$ th seconds. The number is a decimal in the range of 16 to 4095. The default number is 32 (which means that the delay factor would then be $\frac{32}{16}$ seconds, or 2 seconds).

DELAY WEIGHT
number

is the weight to apply to a current round trip delay to a remote node when updating the estimated round trip delay to a node. The number is decimal in the range 1 to 255. The default is 1.

IDENTIFICATION
id-string

specifies a text identification string for the executor node. The string can consist of 1 to 32 alphanumeric characters. You must use a set of quotation marks (“ ”) to delimit any string containing blanks or tabs. You cannot use a single set of quotation marks within the identification string.

You can use the IDENTIFICATION parameter to identify the executor node to other nodes in the network (for example, by including your name or department in the string).

INACTIVITY TIMER
seconds

is the maximum duration of inactivity (no data in either direction) on a logical link before the node checks to see if the logical link still works. If no activity occurs within the minimum number of seconds, the node generates traffic to test the link. The value range is 1 to 65535. The default is 30.

INCOMING TIMER
seconds

is the maximum duration between the time a connection request is received at the executor node and the time that it takes to accept or reject the request. If the request is not accepted or rejected by the user program within the specified number of seconds, the connection request is automatically rejected. If no value is set, there is no timer. The value range is 1 to 65535. The default is 45.

SET EXECUTOR

- NAK QUOTA** *number* This is the number of out-of-order segments to receive before sending a negative acknowledgment (NAK) out on the logical link. This number must be less than or equal to the RECEIVE PIPE QUOTA. The value range for this quota is 0 to 65535. The default is 0 (or 6 for the 3Com driver).
- NAME** *node-name* specifies the node name for the executor node. The node name is an identification string consisting of one to six alphanumeric characters, including at least one alphabetic character.

You can set NAME only when the executor's state is OFF. The executor's state is OFF if the DECnet network process fails to find the DECnet database file, DECPARM.DAT.
- OUTGOING TIMER** *seconds* is the duration between the time that the executor node requests a connection and the time that it takes for the request to be acknowledged at the remote node. The value range is 1 to 65535. The default is 60.
- RECEIVE PASSWORD** *password* is the password the local node must receive from the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting of eight alphanumeric characters.
- RECEIVE PIPE QUOTA** *number* the number of segments the driver will allow to be received for a link by flow control. (A driver is a set of code that handles the physical input and output to a specific device.) The valid range is 1 to 65535. The default is 6.
- RETRANSMIT FACTOR** *number* is the maximum number of times that the executor node will restart the retransmission timer when it expires. If the number is exceeded, the logical link is disconnected. The number is a decimal value in the range of 1 to 65535. The default is 12.

SET EXECUTOR

STATE ON allows logical links to be established to the executor node. The executor's state is OFF if the DECnet network process fails to find the DECnet database file, DECPARM.DAT. You must SET EXECUTOR ADDRESS (and NAME, if desired) before you can SET EXECUTOR STATE ON.

If you specify STATE ON, you cannot include any other parameters.

TRANSMIT PASSWORD *password* is the password the local node must transmit to the adjacent node in order to exchange messages with the adjacent node. The password is a character string consisting of eight alphanumeric characters.

TRANSMIT PIPE QUOTA *number* the number of segments the driver will buffer into NSP before it blocks the user on a transmission. (NSP is a Network Services Protocol that NCP uses to perform network management and to exchange messages over logical links.) The valid range is 1 to 65535. The default is 6.

NOTE

Information about RECEIVE PASSWORD and TRANSMIT PASSWORD applies to asynchronous DDCMP communications only.

Examples

```
NCP> SET EXECUTOR STATE ON (RET)
```

This command sets the executor node's state to ON. You must also turn the line state to ON with the SET LINE command. The node can then establish logical links with other nodes.

```
NCP> SET EXECUTOR OUTGOING TIMER 10 (RET)
```

This command indicates that the executor node will wait 10 seconds between the time that a connection request is sent and the time it takes for an acknowledgment to be sent by the destination node.

```
NCP> SET EXECUTOR ADDRESS 4.4 NAME FARA (RET)
```

This command sets the executor node's address to 4.4 and its name to FARA.

SET LINE

The SET LINE command sets line information. The values you set are not preserved across system reboots. (To have the settings take effect the next time you boot your system, use the DEFINE LINE command.)

Most parameters, such as the baud rate, are set by the person who coordinates activity on your network. Therefore, you must obtain this information from that person.

Restrictions

The executor state must be ON in order for you to define or modify any line parameters. In addition, the line state must be OFF if you wish to specify any parameters other than STATE OFF or RETRANSMIT TIMER. You must execute a SET LINE STATE OFF command before you define or modify any other line parameters. When you are finished, execute a SET LINE STATE ON command to turn the line back on.

Format

```
SET LINE [line-id] {
  DEVICE [device-id]
  MODEM {NULL}
          {FULL}
  SPEED baud-rate
  STATE {OFF}
          {ON}
          {HANGUP}
}
```

where

LINE [*line-id*] specifies either ASYNC-1 or ETHER-1 as the line for which parameters are to be created or modified. Since there is only one line to use for each configuration, the *line-id* is optional.

DEVICE *device-id* specifies the device for controlling the line. The line's circuit must be in the OFF state. For the VAXmate personal computers, the device is COM-1.

SET LINE

MODEM	specifies the type of modem control to be used. Note that modem control is used only with asynchronous DDCMP connections.																
NULL	specifies that modem control signals will not be checked.																
FULL	specifies that modem control signals will be checked. The line will be shut down if the modem loses its connection. SPEED <i>baud-rate</i> sets the DDCMP line speed to one of the following: <table><tr><td>50</td><td>150</td><td>1200</td><td>3600</td></tr><tr><td>75</td><td>200</td><td>1800</td><td>4800</td></tr><tr><td>110</td><td>300</td><td>2000</td><td>7200</td></tr><tr><td>134</td><td>600</td><td>2400</td><td>9600</td></tr></table> The default is 9600. For high performance systems only, a speed of 19200 is available. Note that information about line speed applies only to asynchronous DDCMP connections.	50	150	1200	3600	75	200	1800	4800	110	300	2000	7200	134	600	2400	9600
50	150	1200	3600														
75	200	1800	4800														
110	300	2000	7200														
134	600	2400	9600														
STATE	sets the line's operational state to ON, OFF, or HANGUP.																

NOTE

Information about modems, line speed, and service states applies to asynchronous DDCMP communications only.

Example

```
NCP> SET LINE ASYNC-1 SPEED 9600 (RET)
```

This command sets the speed of line ASYNC-1 to 9600. Note that line speed is set only if you are using asynchronous DDCMP connections. You can change the line speed only if the line state is OFF.

SET LINK

The SET LINK command terminates logical link connections that are associated with a specific socket. The socket is also detached.

The SET KNOWN LINKS command breaks all link connections that are not set with the socket option, SO__KEEPALIVE, and frees the associated sockets.

A socket is an addressable endpoint of communication within a program or a task. A task uses the socket to send and receive data to and from another task. The SO__KEEPALIVE option keeps any links associated with the socket active, even if you try to disconnect the links. As an example, links that are established by the Network Device Utility (NDU) for the virtual disk facility are set as KEEPALIVE. Thus, using the SET KNOWN LINKS command would not affect the NDU links.

For more information about sockets and socket options, you need to consult the *DECnet-DOS Programmer's Reference Manual*.

Use the SET LINK or SET KNOWN LINKS commands if you have run out of links and you want to recover without rebooting your system. **Note that you should be very familiar with the purpose of the socket (or sockets) whose state you want to change.**

Format

SET LINK *socket* STATE OFF

or

SET KNOWN LINKS STATE OFF

where

LINK *socket* specifies the socket to be detached.

STATE OFF turns the logical link off.

KNOWN LINKS breaks all current links whose sockets are not set with
STATE OFF SO__KEEPALIVE. The sockets can be reassigned to other tasks.

SET LINK

Examples

```
NCP> SET LINK 3 STATE OFF (RET)
```

This command detaches socket 3 and breaks its logical links. To determine the socket number, use the SHOW KNOWN LINKS command.

```
NCP> SET KNOWN LINKS STATE OFF (RET)
```

This command aborts all current links and frees the associated sockets.

SET LOCAL-ADAPTER-NAME

The SET LOCAL-ADAPTER-NAME command enters a local adapter name into the volatile database. This information is not preserved across system reboots. (To have the settings take effect the next time you boot your system, use the DEFINE REMOTE-ADAPTER-NAME command.)

The local adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on your local personal computer.

Note that the SET command for adapter name information is case sensitive. This means that you must specify the name you want to set by enclosing the name in quotation marks if the name contains any lowercase letters. If you have two local adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the SET LOCAL-ADAPTER-NAME command.

Format

SET LOCAL-ADAPTER-NAME *name* [BYTE 16 *nn*]

where

name is a 1- to 16-character ASCII string that specifies the name of the local application you want to add to the volatile database.

nn specifies a value for byte 16. This value can be any decimal value from 0 to 255.

Example

```
NCP> SET LOCAL-ADAPTER-NAME "myapp" (RET)
```

SET PAUSE

SET PAUSE

The SET PAUSE command enables or disables display characteristics. If you issue an NCP command that will display several screens of data all at once (such as LIST or SHOW), some of the information may scroll by before you can read it. SET PAUSE lets you control this display of information. For example, if you issue a SET PAUSE command and then issue a LIST command, the display stops at the end of the first screen of data. NCP issues a —More— prompt for you to continue. When you see this prompt, you can press **(RET)** to view the rest of the display.

Format

```
SET PAUSE {ON }  
          {OFF }
```

The default for SET PAUSE is OFF.

Examples

```
NCP> SET PAUSE ON (RET)
```

This command turns the PAUSE option ON.

Now when you issue a SHOW EXECUTOR CHARACTERISTICS command, the display stops at the end of the first screen and the —More— prompt appears. You must then press **(RET)** before you can view the rest of the display.

SET PAUSE

For example:

```
NCP> SHOW EXECUTOR CHARACTERISTICS (RET)
```

```
Executor Characteristics as of 23-Oct-1987 16:17:39
```

```
Executor node           = 1.111 (VIGOR)

Driver version number   = 1.3.29
Executor state          = On
Executor Identification = DECnet-DOS V2.0
Executor version        = 3.0.1
Node name               = VIGOR
Node address            = 1.111
Incoming timer          = 45
Outgoing timer          = 60
Confidence timer       = 15
Incoming proxy          = Disabled
Outgoing proxy          = Enabled
Active links            = 3
NSP version              = 4.0.0
Maximum links           = 8
Delay factor            = 16
Delay weight            = 2
Inactivity timer        = 30
Retransmit factor       = 6
Routing version         = 2.0.0
Routing types           = Nonrouting IV
--More-- (RET)

Maximum buffers         = 24
Maximum buffer size     = 1498
Segment buffer size     = 557
Receive password        = (password is not set)
Transmit password       = (password is not set)
Database path           = C:\DECNET\
Transmit pipe quota     = 8
Receive pipe quota      = 3
PC type                 = VAXmate
Out-of-order nak quota  = 0
Autoboot                = Enabled
```

SET REMOTE-ADAPTER-NAME

SET REMOTE-ADAPTER-NAME

The SET REMOTE-ADAPTER-NAME command enters a remote adapter name into the volatile database. This information is not preserved across system reboots. (To have the settings take effect the next time you boot your system, use the DEFINE REMOTE-ADAPTER-NAME command.)

The remote adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on a remote personal computer.

Note that the SET command for adapter name information is case sensitive. This means that you must specify the name you want to set by enclosing the name in quotation marks if the name contains any lowercase letters. If you have two remote adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the SET REMOTE-ADAPTER-NAME command.

Format

```
SET REMOTE-ADAPTER-NAME name NODE node-id OBJECT n [ USER user-id  
PASSWORD password  
ACCOUNT account ]
```

where

name is a 1- to 16-character alphabetic string that specifies the name you want to assign to the remote application. If you want the characters representing the name to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string in double quotation marks.

SET REMOTE-ADAPTER-NAME

<i>node-id</i>	identifies the node that will be associated with this remote adapter. The node you use must be one that is already defined in the node database, DECNODE.DAT. You must identify a node for each remote remote adapter name that you set. The node ID can be either the node's name or its address. A node name is a 1- to 6-character alphanumeric string that identifies a specific node. A node address is a numeric character string consisting of an area number and a specific node number. The node address also serves as a unique identification of the node in the network.
<i>n</i>	is the number of the DECnet object. The range for this number is 0 to 255. The default is 0.
<i>user-id</i>	is the user information you may use for accessing the loopback mirror on the remote node. A user ID consists of 1 to 39 alphabetic characters.
<i>password</i>	is a unique character string that you may use for accessing the loopback mirror on the remote node. A user's password consists of 1 to 39 alphanumeric characters (some systems restrict password lengths to only 8 characters).
<i>account</i>	is alphanumeric information you may need to access the remote node's loopback mirror. The information can consist of 1 to 39 alphabetic characters.

If you want the USER, PASSWORD, or ACCOUNT information to be stored in uppercase letters, simply type the characters. If you do not want the characters to be stored as uppercase, place the string within quotation marks. For example:

abc will be stored in the database as **ABC**

"Aab" will be stored in the database as **Aab**

Example

```
NCP>SET REMOTE-ADAPTER-NAME NORMAL (RET)
```

SHOW ACTIVE

SHOW ACTIVE

The SHOW ACTIVE command displays summary type information for all active links between the executor node and the adjacent node, as well as information about the executor node, the adjacent node, and the remote nodes that currently have active links to your local node.

Format

SHOW ACTIVE LINKS [TO *file-id*]

or

SHOW ACTIVE NODES [TO *file-id*]

where

TO *file-id* indicates the information defined in Table 4-1.

Examples

NCP> SHOW ACTIVE LINKS (RET)

This command displays a list of all the currently active logical links to your node. Here is a sample system response:

Active Links Status as of 13-Aug-1987 9:42:47

State	Socket	Node	Local Addr	Remote Addr	Local #	Local Name	Remote #	Remote Name
Running	1	55.124	35392	17455	0	_LLA35392	64	
Running	2	4.30	35425	52272	0	_LLA35425	64	

NCP> SHOW ACTIVE NODES (RET)

This command displays a list of all the active nodes that currently have logical links to your node. Here is a sample system response:

Active Volatile Nodes as of 13-Aug-1987 9:42:58

Node Address	Node Name	Active Links	Delay	Next Node Address	Next Node Name
55.86	VIGOR	0			
55.124	UNWELL	1			
4.30	ORIOLE	1			

SHOW ADJACENT

The SHOW ADJACENT command displays information for the adjacent node. This command displays the designated router for Ethernet.

Format

```
SHOW ADJACENT NODE [TO file-id]
```

where

TO *file-id* indicates the information defined in Table 4-1.

Example

```
NCP> SHOW ADJACENT NODE (RET)
```

This command displays the information for the adjacent node. Here is a sample system response:

```
Node Characteristics as of 21-Aug-1987 16:15:47
```

Node Address	Node Name	State	Active Links	Circuit ID
55.261	DSRVC1	Reachable	0	ETHER-1

SHOW CIRCUIT

SHOW CIRCUIT

The SHOW CIRCUIT command displays all the values of the currently running system. You can either display the information on your screen or redirect it to an output file at the local node.

Circuit counters monitor traffic and errors on individual circuits. The network coordinator can periodically check each circuit's counters to assess circuit performance and determine potential problems.

Format

```
SHOW CIRCUIT [circuit-id] [ CHARACTERISTICS  
                              COUNTERS  
                              STATUS  
                              SUMMARY ] [TO file-id]
```

where

CIRCUIT [*circuit-id*] specifies the circuit (either ASYNC-1 or ETHER-1) for which information is to be displayed. Since there is only one circuit to use for each configuration, the *circuit-id* is optional.

CHARACTERISTICS indicate the information shown in Table 4-1.
COUNTERS
STATUS
SUMMARY
TO *file-id*

Examples

```
NCP> SHOW CIRCUIT ASYNC-1 CHARACTERISTICS (RET)
```

This command displays the current characteristics of circuit ASYNC-1.

```
NCP> SHOW CIRCUIT COUNTERS (RET)
```

This command displays the current counters for the circuit.

```
NCP> SHOW CIRCUIT ETHER-1 STATUS TO CIR.DAT (RET)
```

This command redirects the current status information about circuit ETHER-1 to an output file named CIR.DAT.

SHOW EXECUTOR

The SHOW EXECUTOR command displays the current executor node information. You can either display the information on your screen or redirect it to an output file at the local node.

Format

```
SHOW EXECUTOR [ CHARACTERISTICS  
                COUNTERS  
                STATUS  
                SUMMARY ] [TO file-id]
```

where

CHARACTERISTICS indicate the information defined in Table 4-1.
COUNTERS
STATUS
SUMMARY
TO *file-id*

Examples

```
NCP> SHOW EXECUTOR STATUS TO STAT.NOD (RET)
```

This command redirects the status information for the executor node to an output file named STAT.NOD.

```
NCP> SHOW EXECUTOR CHARACTERISTICS (RET)
```

This command displays the characteristics for the executor node.

SHOW LAT

SHOW LAT

The SHOW LAT command displays information about the LAT connection you may be using. The information may be directed to a file. This command works only if you have LAT installed on your node.

Format

SHOW LAT [COUNTERS] [TO *file-id*]

where

COUNTERS indicate the information shown in Table 4-1.

TO *file-id*

Example

```
NCP> SHOW LAT COUNTERS (RET)
```

This command displays the counter information for the LAT line.

SHOW LINE

The SHOW LINE command displays current line information. You can either display the information on your screen or redirect it to an output file at the local node.

Line counters monitor procedures on individual lines. The network coordinator can periodically check each line's counters to assess line performance and determine potential problems.

Format

```
SHOW LINE [line-id] [ CHARACTERISTICS ] [TO file-id]
                   [ COUNTERS ]
                   [ STATUS ]
                   [ SUMMARY ]
```

where

LINE *line-id* specifies either ASYNC-1 or ETHER-1 as the line for which information is to be displayed. Since there is only one line to use for each configuration, the *line-id* is optional.

CHARACTERISTICS indicate the information defined in Table 4-1.
 COUNTERS
 STATUS
 SUMMARY
 TO *file-id*

Example

```
NCP>SHOW LINE ASYNC-1 CHARACTERISTICS TO STORE.LIN (RET)
```

This command redirects counter information about line ASYNC-1 to an output file named STORE.LIN.

SHOW LOCAL-ADAPTER-NAME

SHOW LOCAL-ADAPTER-NAME

The SHOW LOCAL-ADAPTER-NAME command displays information about the local adapter name in the volatile database.

The local adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on your local personal computer.

Note that the SHOW command for adapter name information is case sensitive. This means that you must specify the name you want to display by enclosing the name in quotation marks if the name contains any lowercase letters. If you have two local adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the SHOW LOCAL-ADAPTER-NAME command. If you do not use quotation marks with the SHOW command, NCP will display the name that is stored in all capital letters.

Format

```
SHOW LOCAL-ADAPTER-NAME name [BYTE nn]
```

where

name is a 1- to 16-character ASCII string that specifies the local application for which you want to display information.

nn specifies a value for byte 16. This value can be any decimal value from 0 to 255.

Example

```
NCP> SHOW LOCAL-ADAPTER-NAME REGAL (RET)
```

SHOW NODE

The SHOW NODE command displays information about a node that you have made a DECnet connection to since the last reboot.

The SHOW KNOWN NODES command displays information about all of the nodes that you have made DECnet connections to since the last reboot. This command always displays the executor node and the adjacent node.

Format

SHOW NODE *node-id*

SHOW KNOWN NODES

where

node-id specifies the name or the address of the node for which you want to display information.

Examples

NCP>SHOW NODE ORIOLE (RET)

Known Permanent Nodes as of 17-Oct-1987 15:12:11

Node Address	Node Name	Active Links	LAT/ MS-NET	Account Information
4.30	ORIOLE	0	M L	

This command displays information for the node ORIOLE.

NCP>SHOW KNOWN NODES (RET)

Known Volatile Nodes as of 17-Oct-1987 15:20:33

Node Address	Node Name	Active Links	Delay	Next Node Address	Name
55.11	VIGOR				
55.161					
4.298	DELON	0	1		

SHOW REMOTE-ADAPTER-NAME

SHOW REMOTE-ADAPTER-NAME

The SHOW REMOTE-ADAPTER-NAME command displays information about the remote adapter name in the volatile database.

The remote adapter name identifies a network application which is written to use the NETBIOS emulator interface. The application resides on a remote personal computer.

Note that the SHOW command for adapter name information is case sensitive. This means that you must specify the name you want to display by enclosing the name in quotation marks if the name contains any lowercase letters. If you have two remote adapter names that use the same letters but are in different cases, such as "BEST" and "best", you must be very specific when using the SHOW REMOTE-ADAPTER-NAME command. If you do not use quotation marks with the SHOW command, NCP will display the name that is stored in all capital letters.

Format

```
SHOW REMOTE-ADAPTER-NAME name
```

where

name is a 1- to 16-character alphabetic string that specifies the remote application for which you want to display information.

Example

```
NCP> SHOW REMOTE-ADAPTER-NAME PERSIS (RET)
```

TELL

The TELL command instructs a remote DECnet node to display volatile information about its executor, lines, or circuits. You cannot use this command for your local node.

If the remote system requires user and password information, these must be set using the DEFINE NODE command first.

Format

```
TELL node-id SHOW { EXECUTOR [CHARACT | COUNTERS | STATUS | SUMMARY]
                   { CIRCUIT circuit-id [CHARACT | COUNTERS | STATUS | SUMMARY]
                   { KNOWN CIRCUIT [CHARACT | COUNTERS | STATUS | SUMMARY]
                   { LINE line-id [CHARACT | COUNTERS | STATUS | SUMMARY]
                   { KNOWN LINE [CHARACT | COUNTERS | STATUS | SUMMARY]
                   KNOWN NODES
                   AREA n
                   KNOWN AREA
                   NODE node-id
                   }
                   }
                   }
                   }
                   }
[TO file-id]
```

```
TELL node-id SHOW NODE *.node-id
                                area.*
```

```
ZERO { EXECUTOR
      { CIRCUIT circuit-id
      { LINE line-id
      }
      }
      } [COUNTERS]
```

where

CIRCUIT *circuit-id* specifies the circuit on the remote node for which information is to be displayed.

LINE *line-id* specifies the line on the remote node for which information is to be displayed.

n specifies a certain area number for which you want to view node information. The value of *n* can be from 1 to 63.

SHOW KNOWN AREA is for use with Level 2 routers only.

TELL

*area.** specifies the particular node area for which you want to display information. The asterisk (*) is wildcard that indicates that you want to view all of the node information for the specified area. (You should note that the use of wildcards only works if the remote system supports wildcarded node names for network management.)

CHARACTERISTICS indicate the information defined in Table 4-1.
COUNTERS
STATUS
SUMMARY
node-id
TO *file-id*

Example

```
NCP>TELL GRAHAM SHOW EXECUTOR CHARACTERISTICS (RET)
```

This command instructs the node GRAHAM to display information about its executor characteristics. Here is a sample system response:

```
Executor address          = 4.30
Executor name             = GRAHAM

Identification            = DECnet-VAX V4.5, VMS V4.5
Version                   = 4 0 0
Incoming timer            = 45
Outgoing timer            = 60
NSP version                = 4 0 0
Maximum links              = 25
Delay factor               = 32
Delay weight               = 3
Inactivity timer          = 60
Retransmit factor         = 10
Routing version           = 2 0 0
Routing types              = 4
Routing timer              = 600
Broadcast routing timer   = 180
```

Maximum address	= 700
Maximum circuits	= 16
Maximum cost	= 128
Maximum hops	= 16
Maximum visits	= 32
Maximum area	= 63
Maximum broadcast nonrouters	= 300
Maximum broadcast routers	= 32
Area maximum cost	= 72
Area maximum hops	= 12
Maximum buffers	= 127
Maximum buffer size	= 576
Parameter 2712	= DECNET
Parameter 2731	= 3
Parameter 2740	= 6000
Parameter 2751	= 3
Parameter 2743	= 32
Parameter 2744	= 4156 BASBAL

ZERO CIRCUIT

ZERO CIRCUIT

The ZERO CIRCUIT command zeroes the counters for the circuit.

Format

ZERO CIRCUIT [*circuit-id*] [COUNTERS]

where

CIRCUIT [*circuit-id*] specifies either ASYNC-1 or ETHER-1 as the circuit for which counters are to be zeroed.

Example

```
NCP> ZERO CIRCUIT ETHER-1 (RET)
```

This command zeroes the counters for circuit ETHER-1.

ZERO EXECUTOR

The ZERO EXECUTOR command zeroes the counters associated with and maintained on the executor node.

Format

ZERO EXECUTOR [COUNTERS]

ZERO LAT

ZERO LAT

The ZERO LAT command zeroes the counters for the LAT line. This command works only if you have LAT installed on your node.

Format

ZERO LAT [COUNTERS]

Example

```
NCP> ZERO LAT COUNTERS (RET)
```

ZERO LINE

The ZERO LINE command zeroes the counters for the line.

Format

```
ZERO LINE [line-id] [COUNTERS]
```

where

LINE [*line-id*] specifies either ASYNC-1 or ETHER-1 as the line for which counters are to be zeroed. Since there is only one line to use for each configuration, the *line-id* is optional.

Example

```
NCP> ZERO LINE ASYNC-1 (RET)
```

This command zeroes the counters for line ASYNC-1.

NCP Error Messages

A.1 Introduction

Some common NCP error messages are listed on the following pages. An explanation and the appropriate user response are also included with each error message.

A.2 Types of NCP Error Messages

NCP error messages fall into three categories:

- **Command line errors.** These messages are displayed when you use the incorrect syntax for a command line.
- **File input/output (I/O) errors.** These messages are displayed when you try to access MS-DOS files.
- **Network errors.** These messages are displayed when you try to run NCP on a system where network support, or some part of it, is missing or not working properly.

A.3 Command Line Errors

The messages listed in this section are all related to accessing MS-DOS files.

Cannot set DDCMP parameter in Ethernet configurations.

You are running DECnet-DOS over an Ethernet connection, and you tried to set a parameter used only by DDCMP asynchronous lines.

Action to be taken: Use a different parameter, or reconfigure your connection for Ethernet communication.

Cannot set Ethernet parameter in DDCMP configurations.

You are running DECnet-DOS on an asynchronous line, and you tried to set a parameter used by Ethernet.

Action to be taken: Use a different parameter, or reconfigure your connection for DDCMP communications.

Could not find node address with node name = *node-name*.

The node address and node name pair did not match.

Action to be taken: Check your list of node names and node addresses and attempt to execute the NCP command again.

Could not find node name with node address = *node-address*.

NCP was unable to find the node name defined by the specific node address.

Action to be taken: Check your list of node names and node addresses and try to execute the NCP command again.

Executor is in wrong state.

The executor is not in the proper state for changing the parameter you specified. (For example: you cannot set the EXEC NAME or EXEC ADDR when the state is ON.)

Action to be taken: Use the DEFINE EXECUTOR command rather than SET EXECUTOR.

Line is in wrong state.

The line is not in the proper state for changing the parameter you specified.
(For example: you cannot change the line speed while the line state is ON.)

Action to be taken: Change the line state first, then change the parameter.

Node address must be in the range 1 to 1023.

The node address has exceeded the valid range.

Action to be taken: Enter a node address that is in the range of 1 to 1023.

Node area must be in the range 1 to 63.

The area number has exceeded the valid range.

Action to be taken: Enter a node area that is in the range of 1 to 63.

Node name already defined for another node number.

You tried to define a node name that has already been matched to a different node number.

Action to be taken: Select another name to apply to this node number.

Node name must contain an alphabetic character.

The node name you defined did not contain any alphabetic characters. Node names can consist of 1 to 6 alphanumeric characters, but at least one character must be a letter.

Action to be taken: Redefine the node name using at least one letter.

Node number already defined for another node name.

You tried to define a node number that has already been matched to a different node name.

Action to be taken: Select another number to apply to this node name.

Value out of range; check the documentation or type HELP.

The value you selected for this parameter is not within the valid range.

Action to be taken: The values for NCP parameters are defined in Chapter 2. Typing HELP will also provide the valid ranges for these parameters. Check the valid range for the parameter you want to define, then enter a correct value.

String too long. Maximum length is *n*.

The string you entered has too many characters in it.

Action to be taken: Enter a string that is in the range specified in the message (this message can appear for several different commands).

^User command error

The command line contains an invalid or missing keyword or parameter. The incorrect command line will be displayed with this error message on the next line. The circumflex (^) will point to the portion of the command line that was incorrect.

Action to be taken: Request on-line help for the specific command by using the NCP command HELP.

A.4 File Input/Output (I/O) Errors

The messages listed in this section are all related to accessing MS-DOS files.

Could not open file: {*file-name*}

The file was not found on the default database device in the \DECNET directory or an MS-DOS error occurred while you attempted to create or open the file.

Action to be taken: Refer to the appropriate installation guide for details on the \DECNET directory.

Could not read from file: {*file-name*}

An error occurred while you attempted to read from the file. The file may not have been properly created/opened, an attempt to read past the end of the file may have occurred, or the file may not have been found in the default database device in the \DECNET directory.

Action to be taken: Contact the person responsible for your network for assistance.

Could not seek in file: {*file-name*}

An error occurred while you attempted to modify the current seek position in the file.

Action to be taken: Contact the person responsible for your network for assistance.

Could not write to file: {file-name}

An error occurred while you attempted to write data to the file. The file may not have been properly created/opened, or the disk may be full.

Action to be taken: Contact the person responsible for your network for assistance.

A.5 Network Error Messages

The messages listed in this section are displayed when you try to run NCP on a system where network support (or some part of it) is missing or not working properly.

Network Error: Can't assign requested address

A request to set up a node name and node address from a remote node has failed. The node name and node address supplied by the user was not recognized by the local or remote node.

Action to be taken: You should specify a different node name and node address. Retry the operation.

Network Error: Connection timed out

A request to set up a node name and node address from a remote node has failed. The time period that is allowed for connecting to the remote network management listener has expired.

Action to be taken: Set the executor's timeout parameters to longer periods of time. Try the command again.

Network Error: Executor is in wrong state

An attempt to set a specific network parameter has failed. This occurs when you try to set the executor's node name or node address and the executor's state is already ON.

Action to be taken: Delete the DECPARM.DAT file in your \DECNET directory. Run the SETUP program and @NCP.TXT file as detailed in the appropriate installation guide.

Network Error: Host is unreachable

A request to set up a node name and node address from a remote node has failed. The remote node cannot be reached.

Action to be taken: Try a different remote node.

Network Error: Line is in wrong state

An attempt has been made to set certain line parameters when the line state is already ON.

Action to be taken: You must first set the line state to OFF. Then use the SET LINE command to modify certain line parameters. Then turn the line state to ON again.

Network Error: Network is down

An attempt was made to access the network with the executor state OFF.

Action to be taken: Verify that the executor's node address (and name) has been set. Set the executor state to ON with the SET EXECUTOR command, and turn the line state to ON with the SET LINE command.

Network Error: Network is unreachable

The DECnet driver was not properly installed.

Action to be taken: Refer to the appropriate installation guide for installation instructions. Repeat the installation procedure.

Network Error: No response from object

A request to set up a node name and node address from a remote node has failed. The logical link connection is broken, or the remote network management listener has failed.

Action to be taken: Try to execute your network request again. You can increase the executor's timeout period or try to make a connection to a different remote node.

Network Error: No such process

A request to set up a node name and node address from a remote node has failed. The remote node has no network management listener object.

Action to be taken: Try another remote node.

Network Error: Permission denied

An attempt was made to turn the executor state to ON when the executor's address was not set. An attempt was made to set the line state to ON when the executor's state is OFF.

Action to be taken: Use the SET EXECUTOR command to set the executor's node address, then turn the executor state ON with the SET EXECUTOR command.

To turn the line ON, first set the executor's state to ON. Then set the line state to ON with the SET LINE command.

Network Error: Socket operation on non-socket

The specified socket number was invalid.

Action to be taken: Specify a valid socket number using the SET LINK command. Refer to the *DECnet-DOS Programmer's Reference Manual* for more details.

A.6 Loop Test Error Messages

When you test the network using loop commands, you may see the following error messages in addition to other network error messages.

Please run NCP to SET NODE *n* NAME.

There is no node name defined for performing the loop tests.

Action to be taken: Be sure you have defined the proper node name to use for performing loop tests. You can define the name using the NCP command SET NODE *n* NAME.

Cannot access information about executor node. Please check that the DECnet-DOS network driver is installed and that NCP runs to:

```
SET EXEC ADDR node-address NAME node-name  
SET EXEC STATE ON
```

You have not defined the executor node name and address.

Action to be taken: Make sure DECnet-DOS is installed and that you can run NCP. Then use the NCP commands to define the executor node name and address and to turn the executor state ON.

Glossary

access control information

Optional security information that you may need to access a remote node.

account

A character string consisting of 1 to 39 alphanumeric characters.

adjacent node

A node that you are physically connected to by a single line.

alphanumeric

A string of characters that contains letters (alphabetic characters), numbers (numeric characters), or a combination of both. The term *alphanumeric* is a contraction of the words *alphabetic* and *numeric*.

application

A program (other than the operating system) that performs specific functions in order to meet user requirements. Applications available with DECnet-VAXmate include the Network File Transfer utility, the Network Device Utility, the Network Test Utility, and the SETHOST utility with network virtual terminal services.

buffer

A temporary storage area in a node's memory. Buffers temporarily hold data being transferred to and from the node. The size and the number of buffers determine the amount of data that can be stored.

circuit

The communications path that operates over a physical line connecting two nodes.

command switch

A word or character string that modifies the way in which a command operates. Typing the command **DIRECTORY LONDON::** causes the system to display a full directory of all files located on node LONDON. When you modify the command using the **/BRIEF** switch, (as in **DIRECTORY/BRIEF LONDON::**), the system only displays the file names.

communication path

The route through hardware components and a cable that a message takes when sent from one node to another.

counter

A counter displays statistics about the flow of network messages for your node. The counters also record error conditions and accumulate their totals for you.

DECnet

A family of Digital products that extend the capabilities of Digital computers to perform various operations over a network. DECnet provides many standard applications for accessing files and databases that exist on other nodes.

DECnet-DOS

A set of software and hardware components designed for use with the IBM PC, the IBM PC/XT and the IBM Personal Computer AT (including a limited set of compatibles). DECnet-DOS allows you to combine the capabilities of the IBM personal computers with DECnet applications to access the network as an end node.

DECnet-VAXmate

A set of software and hardware components designed for use with the VAXmate personal computers. DECnet-VAXmate allows you to combine the capabilities of the VAXmate personal computers with DECnet applications to create end-node only networks.

device

A specific name for a disk or diskette that is currently storing data files.

directory

A specific name assigned to a collection of files stored on a disk or a diskette. A directory can also provide a list of the file names that it contains.

emulate

To imitate the performance of a terminal on another system. When your personal computer emulates a terminal on a host system, it performs many of the same functions as the host terminal.

end node

A node that can only send and receive information for its own use. An end node cannot receive and then forward information intended for another node. Your personal computer is an end node.

executor node

A node that runs NCP commands. For a personal computer, this is the local node.

file specification

A complete file identification including an optional drive name and path name. The file specification must include at least a file name followed by an optional file type and version number.

foreign file

A file that has a format other than a format recognizable to DECnet-VAXmate. A foreign file specification must be enclosed in quotation marks (" ") in a command line.

host node

A node on the network that your node can access for the purpose of sharing resources and information.

line

The physical line connecting the local node with the adjacent node.

local node

The node that you are currently using to communicate with other nodes.

logging

The process of recording information from an occurrence in the network. Logging is the process that generates a record of the event.

loopback connector

A hardware device that temporarily connects the output portion of a circuit back to the input portion of a circuit for the purpose of testing communication lines. The loopback connector verifies the operation of devices on the same communications link.

loopback test

A test that sends an electronic signal over a hardware or software connection to verify the operation of devices along the communication link. Certain loopback tests require a loopback connector (see **loopback connector**).

modem

A hardware device capable of changing communications signals from digital to analog and back to digital. The term *modem* is a contraction of the words *modulation* and *demodulation*.

modulation

The process of varying an original computer communication (digital) signal into a telephone communication (analog) signal.

network

A group of computers or systems that are connected together and can communicate with each other to share resources and information.

network coordinator

A person who assigns and updates node names and node addresses. The network coordinator also provides administrative assistance to network users.

network link

A temporary connection that establishes communication between programs running on different nodes. The SETHOST utility with network virtual terminal services is a program that establishes a network link with another node, enabling you to log into a remote host system.

node

A computer with the necessary hardware and software to participate in a network with other computers.

node address

A unique numeric character string that identifies a node to other systems in the network.

node definition

A character string that identifies a particular node. The definition includes both the node address and the node name.

node name

A 1- to 6-character alphanumeric string (containing at least one letter) that identifies a node to other users in the network.

password

A character string that uniquely confirms your identity to the system.

process name

A character string that identifies one particular user in a group of users sharing the same system.

protocols

Rules or formats that operating systems must follow to conduct effective communications with other computers in a network.

queue

A waiting line for completing a service, such as transferring files.

reachable node

A node to which the local node has a usable communications path.

remote node

Any node on the network other than the node you are currently using.

remote node list

A list containing node definitions of other nodes that are available for communication on the same network.

router

A DECnet node that can receive messages and information from one node and forward them to another node.

routing node

A DECnet node that can receive and forward information from one node to another. A routing node can perform other functions that are not limited strictly to routing information.

segment

A set of data that can be stored anywhere in memory and can be retrieved at any time.

TO *file-id*

A qualifier that specifies the name of the output file which stores information resulting from the execution of an NCP command.

topology

The physical arrangement of nodes and connecting hardware that makes up the network.

user name

A character string consisting of 1 to 39 alphabetic characters identifying a user at a remote node.

window

A rectangular section of your screen which is used for running programs or applications.

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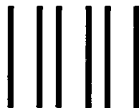
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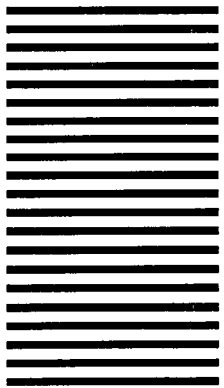
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